# **The Effects of Land Ownership System to Urban Development Plan** (Case Study: The Section Edge of Tehran City)

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**ABSTRACT:** Land use planning and organized urban activities are the pivot of urban planning. Understanding patterns of urban land and property ownership is important because it affects the nature and shape of urban development, especially on the edge of cities with many social and economic features in one hand and some illegal subdivision of lands occur in this place on the other hand that is very important in providing urban sustainable plans. For implementing the urban development plan; must acquire lands that it isn't an easy work for municipalities. For example the lands located along the southeastern edge of Tehran, called "Niroo Daryaee", though 80% of them are abandoned and have several social and environmental problems, which was decided to provide urban local plan for it by considering spatial, visual, social and environmental features and using Analytic Hierarchy Process (AHP) model. But the shape, form and system of land ownership is serious and has a limitation in implementing different types of plans. Thus municipality of Tehran tries changing restrictions to opportunities; it does not interfere in the form of lands because it is much costlier so decides to involve landowners to build their land, attracting public participation in successful implementation of the plan. Respecting citizens' rights, doing in his obligations has achieved satisfaction of residences as the final and real users of the plan.

Keywords: Land ownership, Section edge, Urban development plans

### **INTRODUCTION**

Urban planning has consisted of the imposition of a framework of rules, presented as being neutral and legitimized on the ground of being in the public interest (Sarin, 1982). Land use plans as a basis of urban planning, provide the ground rules for the development of urban real estate (Ballesteros, 2000). The nature and fortune of urban plan are depended to possibility of recognition, interfere, and supervision in using lands process. (Hamshahri newspaper, 2006)

Understanding patterns of urban land and property ownership is important not only because the size and configuration of land holdings affect urban morphology through new development, regeneration and refurbishment of existing land and property, but also because historically, the timing of land sales affects the nature and shape of urban development by reflecting contemporaneous architectural and planning styles. Land ownership also confers economic and social power and wealth on owners, who can also exert influence upon urban planning policies and outcomes. Finally, land ownership reflects societal values, given that ownership is a social construct and that urban areas impact on the environment. (Dixon, 2009)

In Iran, land is important as a possession and wealth. It means that, land is a private good which can use and being as an ownership and is traded for welfare and profit. On the other hand, land is considered as a public natural source which must provably preserve and distribute for surveys impacting on the society and transferring to future generation. (Urban Planning Council, 2009)

However the main problem through urban lands is supply limitation and increasing demand of it. How to use lands for compliance differential citizen needs, have a several complaints that new urbanism and urban plans encounter at many problems. On one hand, government and urban management don't have a enough funds to owns the lands for establishing public services, on the other hand, private owners intend to regenerate their lands to a profit usage (like a commercial and residential

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function), therefore urban management is conflicted, especially with a private land owners. In this case, advises and proposers of the urban development plan do not implement (Karimi, 2008). Meanwhile municipalities as an agent administrated of these plans must consider people's rights and respect to private ownership, according to the constitution code of Iran, and also provide a base of accomplishment a land use plan for increasing common welfare, accessibility all groups to necessity equipment and distributes these benefits to various citizenship(Urban Planning Council in Iran, 2009).

For instance, Tehran municipality recently provides a local plan for "Niroo Daryaee" area, which is located on the edge of the city and being useless. These obsolete lands have made several social and environmental problems and also fails to a legal restriction that is arising from very important and complicated urban land laws in Iran. So in this paper in literature review, urban lands laws in Iran describe broadly and also in this case study. Then introduce different type of urban design plans which examine by AHP model and chose a best one and propose land use plan finally, it cause to have an opportunities to changing environmental and conditional limitations to achieving a qualified neighborhoods.

### **Literature Review**

Urban Planning in the Edge of City, Using of Land Ownership "Edge Cities" has become a pervasive term in both the professional and popular literature of urban planning, Which first popularized the term, used it to describe a wide range of urbanized centers, from new cities on the suburban fringes to developments within existing cities (McGovern, 1993). The creation of the urban edge was identified as a mechanism to protect significant environments and resources and contain urban sprawl, in order to rationalise service delivery through managing growth and densification. Undoubtedly, the greatest pressure for development occurs in the management zone adjacent to the urban edge (Sasekapa & Kaapstad, 2004). This high rate of urban growth is often caused by rural–urban migration and urban expansion that leads to the annexation of neighbouring settlements. (Sharifi, et al., 2014)

In fact ,the rural–urban fringe is the zone of transition in land use, social and demographic characteristics, lying between (a) the continuously built-up urban and sub-urban areas of the central city, and (b) the rural hinterland, characterized by the almost complete absence of non-farm dwellings, occupations and land use, and of urban and rural social orientation; an incomplete range and penetration of urban utility services; uncoordinated zoning or planning regulations; areal extension beyond although contiguous with the political boundary of the central city.

Rather than containing any clear boundaries, the fringe is characterized by 'fuzzy' and permeable boundaries within which ad hoc, iterative and haphazard development processes and changes occur in a variety of spatial and temporal scales. These extremes of change and continuity that differentiate this space from other rural and urban domains and given the range of interests affected can engender significant local constitution, such complexity and diversity reflects its multi-level, multisector, multi-functional and multi-scalar attributes, it involves a wide variety of stakeholders, actors and institutions: and it shows levels of complexity, innovation, transition and emergence. It is shaped as much by social-cultural discourses as direct functional relationships (Scott, et al., 2013).

However, in unplanned development land conversion takes place in a haphazard manner and creates sporadic spots of development. In such conditions, regulating the growth of these spot developments and providing physical and social infrastructure on the periphery becomes difficult for local authorities. As the development takes place, the need for more and more serviced urban land is generated. The cities have a limited capacity to cater to the land demand, which increase the pressure of development on the periphery (Sapovadia, 2007) become more uncontrolled, more land use converted from agricultural to non-agricultural land. Since the land prices in the suburbs are cheaper than the canters the speculators, consciously or not, buy the cheap lands and wait for the right time to build or sell the lands or buildings for gaining profit from the increasing value of the lands. A lot of the fertile agriculture purchased from the farmers and then just abandoned. (Ardiwijaya, et al., 2014)

In this case, it is necessary to know the urban landownership, which is a keystone of national and local economies (Dixon, 2009) for instance: a new land-use plan can create developments rights that previously did not exist and thereby cause an increase in land value (Hobma, 2010).Therefore, understanding ownership patterns, including: commercial, residential property and urban land sectors, given the important role that urban areas play in the economy and the vital role that urban land and property ownership have in determining the shape and form of our cities (Dixon, 2009).

Furthermore, land-use plans can constitute a limitation of a landowner's property rights. In short, land-use plans determine what can be built where and which regulations (such as maximum heights) apply to it (Hobma, 2010). But it is very common for governments to employ private law, for instance, their right of ownership to land as an instrument to reach planning goals. To a certain extent, private law regulation of land use can be an alternative to public law regulation. These are agreements between a governmental party (usually a municipality) and mostly developers and/or investors as private parties. Such agreements are used if the parties wish to cooperate in connection with an urban area development project. (Hobma, 2011)

### **Urban Land Laws in Iran**

According to the article 30 of the civil code of Iran: "Every owner has unlimited rights of occupation and exploitation over his property in matters in which the law has made an exception" (The Civil Code of The Islamic Republic of Iran, 1997). This shows respectful of private land ownership in Iran. While, the 3 note from article 13 of the urban land code indicates that; municipality must satisfy owners to sell their land to him maximally 18 month for implementing urban development plans (Mansour, 2008). Otherwise; for the article 40 of constitution of the Islamic Republic of Iran," no person may exercise his own rights as a means of constraining others or violating the public interest" therefore, according to the article 173: "In order to investigate the complaints, grievances, and objections of the people with respect to government officials, organs, and statutes, a court will be established to be known as the Court of Administrative Justice under the supervision of the head of the judiciary branch" (Ramazani, 1980) the court Justifies to owners and municipalities should give a construction license to them. Hence it is a limitation factor to implement the urban development plan, because in the lack of financial recourses for municipality to acquire lands, (Mofarahi & Khaligh , 2007) after a passing certain time (18 months) owners could complain from municipality and take a construction licenses, and its cause to fail a part of approval plans. (Kamyar, 2007)

## **MATERIALS AND METHODS**

A method which is used in this job is the Analytic Hierarchy Process model (AHP) that is one of the most famous methods for making multi-criteria decisions, was developed to optimize decision making when one is faced with a mix of qualitative, quantitative, and sometimes conflicting factors that are taken into consideration. AHP has been very effective in making complicated, often irreversible decisions; (Malvi, 2012) dealing with complex decisions by supporting decision makers to find the decision that best suits their needs and their understanding of the problem (Söderholm & Nyström, 2009). To make a decision in an organized way to generate priorities needs to decompose the decision into the following steps.

Define the problem and determine the kind of knowledge sought.

Structure the decision hierarchy from the top with the goal of the decision, then the objectives from a broad perspective, through the intermediate levels (criteria on which subsequent elements depend) to the lowest level (which usually is a set of the alternatives).

Construct a set of pairwise comparison matrices. Each element in an upper level is used to compare the elements in the level immediately below with respect to it.

Use the priorities obtained from the comparisons to weigh the priorities in the level immediately below. Do this for every element. Then for each element in the level below to add its weighed values and obtain its overall or global priority. Continue this process of weighing and adding until the final priorities of the alternatives in the bottom most level are obtained. (Saaty, 2008)

### Niroo Daryaee Lands

Niroo Daryaee" lands with a population of 315 persons and a 22 hectare area is located along the southeastern edge of the city (Armansher Consulting Engineers, 2010a) in the district 15 of Tehran municipality, restricted by a 78meter wide highway from the east side, that separates the city from Mesgarabad village, and into the adjacent residential zone (Masoudieh neighbourhood) from the west side. (Fig.1)

In topographical aspect, it is very differences. Existence the hill

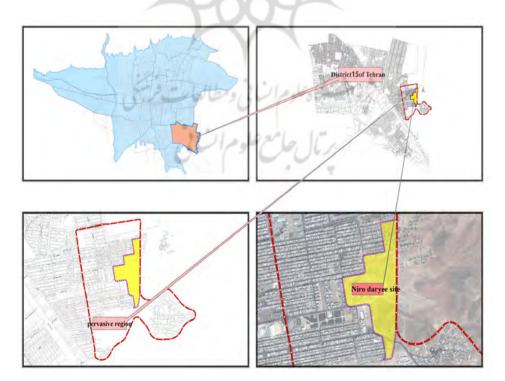


Fig. 1: Location of Niroo Darysee site in Tehran city.

in the south of site, create a nice view, as the mountain in north of the city is completely clear. (Fig. 2)

However about 80 percent of lands are abandoned, thus they have made many social and environmental problems (Fig. 3) several fires happen in it, commit a crime and inner quarrels occur on it and cause to be insecure and create undefended spaces especially for children and old people. In fact, this site is a kind of urban fringe with all social and economic side effects.



Fig. 2: Hill in the south of site.



Fig. 3: Abandon land in the site.

Beside environmental pollution problems and social abnormality, the site is encounter to a legal limitation. In fact, as it mentioned before, these lands are located on the edge of the city and some of them had been situated outside of the city and were abandoned, but after providing a new urban development plan, they are settled inside of the city with complicated urban marginal features and a lot of titleholder who are waiting for years to build their lands. For example the owners of 300 land parcels obtained verdict from the "Court of Administrative Justice" Fortunately municipality acquired 75% of lands (Armansher Consulting Engineers, 2010b) (Fig. 4) but many



Fig. 4: Proportion of land ownership in the site.

private land owners wait to give construction license from the municipality.

For removing land ownership problems, cooperating between private owners and urban management is necessary. For resolving people's troubles, make a suitable place for living and replying citizen rights; was decided to provide a local plan for this place.

# **RESULTS AND DISCUSSION**

# Impacting Private Land Ownership to Urban Development Plan

The site is located in the margin of the city and some illegal subdivision of lands were occurred on it, without any attention to urban planning's rules and just for profits and speculation's aims then the land parcels transferred to the persons who have a verdict from the court now.

In this case; as it mentioned before, most of "Niroo Daryaee" lands were abandoned and land conversion rarely takes place in a haphazard manner and creates sporadic spots of building without receiving a license from the municipality and following standard rules, choose to do not have an acceptable quality. Therefore, urban management decided to rehabilitate and organize the site with special attention to an owner's right, so for approaching to sustainable architecture with steady of local identities (such as: natural, ecological, cultural and social); traditional and native culture (Eco design) was a principal. Also tried to make open, private, and public spaces according to socio-cultural features and considering safety, creating defensible space in different places by increasing accessibilities and the possibility of social surveillance were the basis of study in this job. Making peaceful neighbourhoods far from urban traffic; till to have a safe, calm and a suitable place for playing children and social relation between other residences. Tendency to walkways and human scale is another purpose of this project. (Armansher Consulting Engineers, 2010c)

Totally for urban development plan, all environmental, functional, visual, social... subjects were studied and analysed. To achieve urban development, social welfare, growth and quality of life promotion; 6 alternatives of urban design were proposed (Figs. 5-9). To evaluate and choose the alternatives, environmental quality criteria's series such as walking ways, visibility, applicability, economic justification, sociability, vitality and fluent movement which have extracted from the goals and prospect of urban design, were applied.

The first scenario concentrates on vision's corridors and their relation to Masoudieh neighbourhood mostly and follows these features:

Create diversity of visons corridors towards the hill;

Hierarchy movement of corridors and landmarks to the hill as a distinctive element;

Allocate specific public functions in the location of the hill and its open spaces;

Coordinate and integrate with Masoudieh neighborhood; Make proper and harmonize border for the highway.



Fig. 5: The first alternative of urban design.



Fig. 6: The second alternative of urban design.

The second scenario supported common centres, plazas and neighbourhood settlements and follows these features: Central Plaza (according to the strategic plan);

Settle blocks like as a loop around each neighbourhood, cause more calm and forbidden vehicle's traffic to accesses of residential units;

Appropriate location of the cultural house in the bottom of the hill and its link to the pedestrians;

Design bicycle path and walkway from northern park along marginal linear park till to the hill;

Locate a stadium for Masoudieh neighbourhood inside the northern green space.



Fig. 7: The third alternative of urban design.

In the third scenario link and coordinate to nature is a main criteria of design. Hence topographic lines, conserving and development of nature's elements were important leading factors to an organic design. So this scenario includes the following features:

Logic form of plan, according to the topographic lines;' The diversity of vision and aspect;

Free movement in the shaping of mass;

Enough amount of open space;

Make a waterfall on top of hill and lake in the bottom of it; Separating of walkway and roadway by emphasis to the walkway;

Create linear markets inside of urban fibre.

In the fourth scenario, walkway, create private open space for residential units, construct private, a public court properly, build two special common centres for generating social relationship were considered very seriously. Also make a vision's corridors and walkway's relation between those centres to the hill is an important factor for plan's form. So this scenario includes following features:

Build two public centers of greenery and recreation among two sections of district;

Completely separating of walkways and roadways, as two city centers, linear park and the hill are related to each other by a walkway;

Create two strong passages between common centers and cultural hill as an eminent element and put homogenous landmarks on top of them;

Do not cross the place front of house, for more calm by make loops and dead end turns;

Establish galleries and cultural exhibitions in the hill for more useful of this distinctive element.



Fig. 8: The forth alternative of urban design.



Fig. 9: The sixth alternative of urban design.

In the sixth scenario, some parameters like as regard to

features of detailed plan and land ownership system, order of establishment of buildings, make network of public spaces and walkways and promotion of vision's corridors was considered. So this scenario includes the following features:

Define two main walks and parkways from north of the site to the hill;

Promote visual quality and vision's corridors of local accesses by motion that has created in the establishment of parcels;

Create a special aspect of residential fibres, visible from the hill and dominant height nodes;

Make relation between walkways, linear park and hill;

Inject commercial usages in the border of walkways for increasing liveliness and activity;

Make complex cultural function, consistent with structure of hill and flat space front of it.

At first, because most of the lands in this area were idle; it seemed it's possible to perform some various urban design plans. But some investigated shows that, the form and shape of lands are limitation factor. In reality, land parcels are very different from natural, local features and size (Sadr & khalesi, 1999). To implement plans that do not coordinate of landform are very difficult. In condition urban management abilities to applies plans which were proposed in different alternatives who owns most of the site's lands, that is indeed impossible, because it is much costlier full and also he needs a great budget to perform subsequent phases of the project and provides necessity equipment and infrastructure, such as: transportation network, public services, utilities, parks and green spaces.

Besides that, urban management's experiments during years to encounter to private land ownerships shows that; it is very difficult to satisfy owners who are waiting for years to build their land, sell them to the municipality. Because at this time, after preparing a new comprehensive plan for Tehran, development right is created, so the owners want to gain the benefits while their land have not acquired yet; so some owners complained from municipality and take a verdict from the "Court of Administrative Justice" therefore he forced to proceed with it and considers people's right in the short time, takes construction's license to build their own lands and legally he could not delay them anymore.

### **Analysing Scenarios**

### **Criteria's Evaluated**

The alternatives were investigated by evaluation list of criteria. In determining a significant ratio of criteria and sub criteria, AHP model was used. Also for decreasing error in the judgments; the process of "analysing hierarchy group" was applied. In this process tried to decrease "index of inconsistence "in judgments by group of discussions and allocating suitable weight, according to the expertise and responsibility of each decision maker.

For evaluation the scenarios; seven criteria and twenty seven sub criteria; including: spatial, visual-aesthetics, social-perceptual, environmental, contextual, functional, morphologies were studied in these aspects:

Effects of private land ownership and how to acquire them; The area of open spaces and greenery of the ground;

The idealistic impression in pattern and architectural style; The diversity of skyline and order of height floors;

Order of building's location and following standard rules.

For use AHP model; Criteria and sub-criteria classified in tree chart. In the next step of evaluation, criteria compared pairwise and then the final scores of criteria calculated, after that, the scores of sub-criteria (for each criteria) was determined by geometric means' way. (Table1)

In the all of the steps cared the ratio of inconsistency be lesser than 0.1, otherwise, the scores were worthless and need to verify again.

Checklist of criteria			Urban design alternatives					
	ماتبایی	Alt.1	Alt.2	Alt.3	Alt.4	Alt.5	Alt.6	
	Proper locating of spatial spots	*3	5	3	5	5	5	
Spatial	Care to margin of highway	5	5	5	3	5	5	
Spatia	Considering spatial zones inside of the site	5	5	3	5	5	3	
	Creating and promotion of the main vi- sual corridors	5	3	3	5	5	5	
Visual-Aesthetics	Visual coordination in the whole of site	5	5	3	5	5	5	
	Humanity scale of open spaces	3	5	3	3	5	5	
	Visual permeability to the urban fabric	3	5	5	3	5	5	
	Improve social relation	3	5	3	5	5	5	
Social-Perceptual	Preventing from create indefensible spaces	5	3	5	5	5	3	
	Legibility of nods, corridors and land- marks	5	5	3	5	5	3	

Table 1: Criteria and sub criteria in AHP model analysing.

	Continiue of Table 1: Criteria and su	b criteria ir	n AHP mode	l analysing					
(	Checklist of criteria		Urban design alternatives						
		Alt.1	Alt.2	Alt.3	Alt.4	Alt.5	Alt.6		
	Greenery	3	5	5	5	3	5		
Environment	Topography of site	3	3	5	3	3	3		
Environment	Making natural landscape	5	3	5	3	3	5		
	Care to climatology	3	5	3	5	5	5		
	Promote identity of Masoudieh neigh- bourhood	3	5	1	5	5	3		
Contextual	conserve and promote characteristic of	1	3	3	3	3	3		
	Mesgarabad village								
	Improve quality of residential zone	1	3	3	3	5	3		
	Provide services for neighbourhood settlements	5	5	5	5	5	5		
	Distributing of utilities	3	5	1	5	5	5		
Functional	Hierarchy of roads	3	5	3	5	5	5		
	Appropriate separating from walk and roadway	3	3	5	5	5	5		
	Unifying parcels of private land's lot	3	3	3	3	5	5		
	Permeability of buildings	5	3	5	3	5	5		
	Prominent and distinctive of the borders	3	3	3	5	5	5		
Morphological	Wealthy architectural forms	3	5	5	5	3	3		
	Diversity of patterns of houses for differ- ent people	10	5	5	5	5	3		
	summery	90	110	96	112	120	112		

\*scoring those criteria in ternary range: suitable 5/medium 3/ weak 1.

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Alternative2	.395		.5	5	5	.3	.3	5	
Alternative3	.326		5	.3	1	.3	.3	5	
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Fig. 10: Expert choice software.

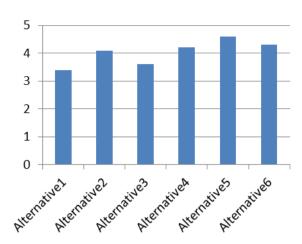


Fig. 11: Expert choice software.

At this stage, six alternatives evaluated and final score of alternatives was calculated by expert choice software (Fig.10). Finally, summing weighted of criteria on each alternative show that, the fifth alternative obtained the highest score, so it is chosen option (Fig. 11)

# **RESULTS AND DISCUSSION**

### **The Best Alternative**

The fifth alternative is chosen as a good one. In this alternative some parameters like as: quality of life, growth, creating local centres, making accessibility of networks and walkways were considered.

Following characters of detailed plan and land ownership system are the main features of this alternative which interferes to form, configuration of the lands as a minimum, hence for implementation of this plan, don't need to acquire land, as it possible use (Fig.12). In fact urban management follows method, meanwhile regards peoples' rights, prepares basis to participate owners to implement the plan. So, according to the approved plan, people can take construction's license, thus private land ownerships obtain their benefits and participate and invest to urban projects.

In the accepted scenario, some parameters like as a regard to features of detailed plan and land ownership system, supporting common centers, making network of public spaces and walkways were considered. So this scenario includes the following features:

Define two eastern-western neighborhoods, considering common spaces for each neighbourhood

Separately and linked them to each other by a walkway;

Make walkway's connections between northern public spaces,

linear park and the hill. Creating network of common places and walkways;

Build a plaza in the north of site by defining two levels of cultural and commercial's functions in local scale;

Make a walkway from northern plaza toward the hill and inject commercial functions in the body of passages for increasing liveness, vitality and activity;

Create complex cultural utility, consistent with the structure of hill and the flat ground front of it;

Developing of promenade, walkway and bicycle path in the border of the highway.

According to land use plan (Fig.13) most of the site was occupied with residential zones and services. To create urban space, worthless buildings and the idle land were used. It is better to concentrate commercial functions and utilities in specific places (like as a downtown) but in few extents, some facilities were distributed in the entire site for daily needs of residences.

For increasing safety on site, mixing different usages were considered to prevent growth of undefended spaces and lack of task, so making different functions, to attract people in different times, creating a playground for children and common places for gathering families such as old people and women for progress of sociability especially in public spaces are some ways to promote neighborhood's safety.

Moreover, for conserving natural features, vision and aspect of site, it is specified to green and open space, walkway and cultural function. Preserve the hill as a landmark of recreation and greenery. Make safety existence of pedestrians in all over the hill. Finally, create a linear park on the border of the high way was suggested.



Fig. 12: Accepted alternative of urban design.



Fig. 13: Land use plan proposed.

## **CONCLUSION**

As it mentions in this paper; private land ownership and respect to people's rights is very important in Iran. Whereas, implementing any plans cannot prevent owners to use their rights legally, it is so clear in this study, especially on the edges of the cities which is distinguished from other urban land.

Beside many social, economic and environmental problems, sometimes some illegal subdivision of lands occurs in this place that is very important to see it in providing plans. Therefore, urban management in prepare and implement of urban development plans should consider people's right seriously.

The paper tries to answer to this issue, some results arise from it:

The land ownership system has an important role in urban planning and has a major effect in providing and implement of land use plan;

The form and configurations of lands are a main factor in proposing the urban plan;

For having a successful urban development plan is not necessary to interfere to land forms, but it is very important to following of the shape of the lands and considering property ownership;

Urban management, especially municipality in here, pursues some ways to increase participation of people in the urban development plan according to their desires, particularly in implementing position especially with a lack of enough financial resources.

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