

## Community development strategies codification (physical - spatial) using smart growth approaches

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**Abstract:** - Urban management structure in recent decades, associated with features and constraints such as non-participatory, focus, system of scheduling, planning top-down, bureaucratic and politicization of the urban development process lacks practical commitment to the principles and applications urban development programs. Hence, it has paused the management strategies developed to resolve these issues and problems at the micro level and neighborhoods. However, despite years of planning, today's cities are growing sporadically. In the past decades, a large amount of agricultural land, gardens and green spaces around the city in order to grow the city is dedicated to building and the day following cities and have been moving more and more toward scattering phenomena and the increasing use of private cars fueled by the fragmentation and is involved on environment quality degradation. Urban Village, new-urbanism, sustainable development, smart growth and the increasing development of all new concepts and approaches that the today's urban problems and uncontrolled expansion of urban areas and put up a new way of development in open areas of the old, the potential uses, increased density and...and each one is complement each loan different from the experiences and achievements of former approaches. the methodology is descriptive-analytical.in this research we try that new approaches are presented in the discussion of urban development and smart growth theory as the main approach to explain the research is and concepts developed and compression is needed to analyze and eventually the criticisms and pudding on smart growth and enumerate the benefits of local sustainable development strategies will be described.

**Keywords:** *smart growth, sustainable development, neighborhood, uses density, new urbanism*

### I. INTRODUCTION

Characteristic of our era in recent decade is urban population, urban population increases and consequently the development of small towns and big. In 1900, only one out of every eight people lived in urban areas (Gilbert and Gagler, 1996) and according to estimates over the period 1990 to 2030, the urban population will grow to about 3.3 billion people which it will be 90 percent in urban areas in developing countries. As migrants in search of jobs, better opportunities, or just food and shelter, continued to migrate to cities, urban infrastructure capacity and are often at reduced pressure, the worse housing conditions and housing are condensed, outdoor raped falls, the streets are congested, air quality has plummeted, declining water resources, surface and ground waters will be contaminated.

Neighborhood Manage is the link neighborhood residents and urban management. If accepted by the city administration to improve the participation of all actors in development, including public, private and civil society is essential, management in the context of the cooperation of all actors and takes place the culture of democratic governance. (sarrafi: 2004).

### II. PROBLEMS DEFINED

Rapid population growth and subsequent rapid expansion of cities as one of the main issues raised in the city today is because of lack of planning and efficient management of this phenomenon, cities are faced with the problems that is is known that can be pointed loss of critical habitat, high dependence on private cars, the

rising cost of city government. In response to these problems were discussed new concepts and approaches for the future. One of these approaches is smart growth that is proposed in the face of development patterns of suburban America in the United States has been and it is pausing principles for the development and redevelopment of dense cities and reduces the uncontrolled expansion of urban areas.

Also in Iran, scattered in the development of urban release areas, preparation and public lands and cooperative and... enhanced.

Activities associated with growth, affected such as the isolation of rural communities, threatening the core urban centers and weakened small communities, destruction of open spaces and natural areas are the following.

Tehran metropolis is also not an exception. Uneven development of the city of Tehran and dozens of negative consequences resulting from this development, effects of smart growth and sustainable development in the control of the open space in terms of economic, social and environmental issues as one of the solutions to control the expansion aims.

Smart Growth proper use of resources, increased utilities, development mixed uses neighborhoods, public transportation facilities and the design of sustainable is proposed results on a human scale integrated urban development.

Urban Smart Growth has numerous approaches including: the creation of a mixed use, taking advantage of compact building design, building neighborhoods accessible by foot, and the areas of environmental preservation of open space and agricultural land, providing a variety of modes of transport, emphasis on redevelopment within the context of existing neighborhoods, encourage citizen participation and collaboration....

Smart growth strategies based on the study area (urban, rural or suburban area) are different:

- A) The City: The metropolitan area, the emphasis on redevelopment of existing neighborhoods and the context, enhancing the mixing of different land uses and enhance the transportation system, especially walking and public transport.
- B) Suburban: suburban area, medium traffic centers have varied access applications through the development of mixed communities are created in the suburbs or planned development based on the principles of smart growth. This method encourages independence and self-reliance and improves the choice of travel destination in the region.
- C) Village: rural smart growth strategy includes strategies that helps develop public services to rural areas with mixed land uses become available. (Litman, 2005:6-7).

### III. MATERIALS AND METHODS

Methodology is kind of developmental and descriptive - analytical approach.

#### 4-Definitions:

##### Urban growth:

Urban growth is a spatial process and population that refers to as increase of the concentration of population in urban areas and towns with an economy and society specifically. However, urban growth axis is the composition and spatial dynamics (Seto & Fragkias, 2005)

The pattern of urban growth and urban sprawl, or what new urbanism as smart growth (urban development process and the direct impact on both the city and the neighborhood) describes corresponds. (Bhatta, 2009)

##### Development

Development is a process by which increases capacity and capability of system and its components in the development process, not necessarily wealth, but also is enhanced the capacity, capability, skill, creativity and knowledge and understanding.

Important consequence of development is enhance the quality of life. Sufficient to achieve the goals and ideals of objectivity and to make wishes. This result enables the system to optimize its resource consumption and increase with reliance on foreign sources in order to their growth and development. (Amir ahmadi: 1996)

##### Smart growth

Smart growth is not identical with the word growth. Smart growth is kind of development in the economic sphere (market) serves communities and the environment. Smart growth provides a framework for communities to make to adopt appropriate decisions about how communities and where to grow. smart growth enables communities in ways growth that must be optimal given support economic and employment: empowering neighborhoods with alternative housing units (housing), business and Transport and build a healthy community with families in a safe environment. Smart Growth could have been achieved as a reasonable response in the face of those who deal with more dispersed development patterns over the past 50 years (recent). (ICMA.2000).

The United States model of smart growth is defined as: "Smart growth is an urban development strategy that seeks to comfort the living, productivity improvement and environmental sense. smart growth has developed its own fundamental way by urban planners, ecologists and other experts in the United States. (Appleyard, 2007). Smart growth is one of new perspectives on the concept of growth management which has been proposed against suburban development pattern in U.S. A. and poses principles for dense development and redevelopment within urban areas (Talen, 2003).

### **Urban sprawl**

Dispersed urban growth after the Second World War, became the most important issues of urbanization processes in developed countries such as America, Canada and some European countries (Gill; 2008). Sparse growth which has defined as urban sprawl suburbs are as a model of low-density urban development and car-dependent (Bhatta, Sarawati, & Bandyopaddhyay, 2010B). Terms of urban distribution associated with the expansion of cities into suburbs and rural areas and agricultural lands are used. In other words, residents of such areas tend to live in single-family homes and commute daily between their work and their lives.

### **Physical-Spatial Development**

Physical development includes the development and use of town is the city which appears result in factors including increasing population and the need for more urban land uses. In other words, the physical development of the city can be seen as an increase in the urban area. (Sustainable urban development; 2000).

### **Compact City**

Compact cities are high population density, mixed-use, convenient and efficient public transportation system by encouraging walking and cycling. This idea rests based on cities traditional European form. (Burton, 2000). Compact urban form should be scale suitable for walking and cycling and public transport, it must be a level of compactness that encourage social interaction. Compact urban form, not just focus on urban centers and the available land has been abandoned but avoid expanding outside of town is well. (Richards & Rogers, 1999). Such places have high population density and the incorporation of social interaction is the main features of the traditional city permits.

### **Sustainable Development**

Sustainable development is a concept that has been discovered in all the different departments in areas such as land use, particularly when reporting commission Brandt Land is widespread throughout the world, attracted a lot of fans in that order. (WCED, 1987). Brandt Land Commission in its report in 1987, sustainable development is defined as:

"the kind of development which to provide the needs of the present generation without compromising the ability of future generations for their needs." (Brunt land commission)

## **IV. INNOVATIVE APPROACH IN URBAN PLANNING**

### **- Sustainable Development:**

After examining the perilous state of the natural environment and the destruction of the environment, began in 1972 sustainable development and attention to environmental issues, the United Nations Conference on the Human Environment in Stockholm, Sweden. More on this meeting to discuss air pollution and exploitation of resources. Following the meeting Stockholm cocoyoc notices published in 1974 and it was proposed to develop ecological and eventually became as sustainable development. (Nasiri, page 191). In 1989 after the conference Brunt land, WCED report was published as the first to document clearly states that sustainable development. A year later published in the CEC green paper reports prepared in 1990 and the Leaders' Agenda 21 was in 1993. (Wily & Son, 2006.456)

Numerous definitions have been proposed of sustainable development, but the most comprehensive and most complete definition of sustainable development is known as the World Commission on Environment and Development Commission, brunt land is "sustainable development is development that meet the needs of the present without compromising the ability of future generations to meet their potential. " In this definition, are allowed the right of every generation have the same amount of natural capital that is available to other results generation recognized and the use of natural capital as its interest (and not its origin that the cause of the destruction of natural capital).

The main objective of sustainable development mentioned meet basic needs, improve living standards for all, better maintaining the future ecosystems and a safer and more prosperous. (Bahraini, 2001, p 44)

Principles of sustainable development policies can be divided into four groups:  
- To minimize the consumption of non-renewable natural resources

- Build sustainable use of renewable natural resources
- Keeping limit the amount of waste and pollution absorption capacity of local and global
- Providing basic human and social needs.

### Urban Village

In the late nineteenth century urban planners, particularly in Great Britain - followed by more industrialized and urbanized countries in the world - the formation of new towns that were backed against the problems of the industrial age. They hoped that the bustle and rush of modern city with a village-like environment to a greater integration of work and family life and optimal use of the environment to return.

Ebenezer Howard, a British designer was perhaps one of the most effective advocates of this approach. Because of his fear of disorder and chaos, disease, crime and delinquency in modern industrial metropolis, the garden city on the outskirts of the city to support their observational characteristics of cities with a population of about 30,000 people, self-employed and the desired neighborhoods with homes which is surrounded by rural areas. Garden City, he was a model of development that affected designers worldwide soon in America, Germany, Australia, Japan and other parts of the world.

The concept of urban villages affected by this theory and the urban village was introduced in England in the late 1980s and *peter calthorpe* was raised and promoting the idea of relying on public transport, cycling and walking instead of using cars. The urban village concept was guided by a philosophy and set of principles to create to better design, mixed use, sustainable area with a commitment a sense of place and community. (Aldous, 1992) Urban villages are places that have a focus on employment, housing, commercial uses, public spaces; public transportation and walking are activities. They are often within relatively compact geographical areas with different land uses are found together in the same structure.

### new urbanism

The default thinking of new urbanism in the 1980s, advent with the of the Sea side in Florida. The argument is based on the idea of the notion of sustainability Jane Jacobs (1961) is based on the incorporation requires user is walking the street pattern and associated communities. New plan - traditional or traditional neighborhood design initially proposed by *Plater Zyberk* know that supported the population in urban centers with mixed use of traditional building types. Transit-oriented development that was being promoted by calthorpe, would suggest that the planners of public transport as a tool for organizing mechanism to determine the density and land use.

In 1993, these individuals came together to form new urbanism Conference and its result were mix of principle together (Leccese & McCormick, 2000) new urbanism Congress has provided the Charter of principles. (CNU, 1996,2000) urban planners agreed CNU Charter that should be explained clearly defines the principles. The list is as follows: metropolitan areas, cities, city, and neighborhoods with identifiable borders and centers, intensive development of the agricultural land and to protect sensitive areas around the development, the increase in the urban centers, returns to life again streets interlocking, friendly, pedestrians and cyclists, mixed-use, smart parking location and parking spaces to avoid creating a landscape dominated by automobiles, transit-oriented development, design and layout of buildings and public gathering places, using buildings, streets and various buildings to create a coherent urban form and ... (Katz, 1994; CNU, 2000)



**Figure 1:** Sea Side district in Florida - Project development began in the early 1980s by Robert Davis is as the first development project in the United States in field of new urbanism.



**infill development**

The increasing development, process development and reuse of components (or parts) of empty or unused within existing urban areas that are already developed. This strategy was formed of a severe reaction after 70 AD than uncontrolled growth of cities to deal with this problem. Infill development emphasis on the development of vacant and abandoned the city is trying to load development on these lands (municipal research & services center of Washington, 1997, p.1)



Generally three major movements, sustainable development and smart growth can a move that has prompted increasing discussion of the range. Nowadays the debate on sustainable development, including the benefits to develop the increases to be mentioned, environmental benefits and the promotion of sustainable urban development. On the other hand, due to public transport, pedestrian-oriented, according to the principles of sustainability, and such is the common mentioned also mentioned in the Charter and to promote the increase. It should also be noted that increased following the development of smart growth approach, a single physical action for land use and environmental abandoned and attention was not normal to the values, but undertakes part of the process of development and growth of the city.

**Growth Management**

Growth management can be defined as a program that government to influence the amount, type, location, pattern, or severity of public and private development costs and on the other hand is designed to achieve the desired goals. Among the objectives of the management plan is followed by transport system can be noted efficient, livable communities, protect natural resources and particularly urban growth.

Including growth management principles that can be followed to achieve them:

- Create meaningful residential areas according to regional scale growth
- Promoting cities as economic engines of urban cores , main streets and livable cities and the city
- Protection of architectural monuments , rural landscapes and natural resources
- New transport link , network infrastructure, water and sanitation, sustainable development and health policy.
- Strategic investment and development effectiveness transportation method.
- Ensure that existing and new community's safe places to live, with high standards of quality of water and air.
- Investment in physical infrastructure of existing communities through the development of a pro-
- Building healthy communities that respond to the needs of new and existing social and cultural rights
- Ensure community support for the release of a variety of mixed- use, dense development and a variety of housing options that are livable communities to meet the need of economic and social.

**V. NEIGHBORHOOD DEVELOPMENT**

Neighborhood, community

**-Neighborhood**

Take a look at the various definitions indicate that the main characteristic of a neighborhood place in a context characterized by the existence of social relationships and networks and deep bonds between people so that the neighborhood is a time of special social and cultural sense than living in one place and stream it to come to mind (Nabavi, 2008).

Subdivisions in the neighborhood of a set of services and residential buildings where residents are defined in terms of its social fabric of the place they came from. The neighborhood is made up of a series of building blocks that are separated by a network of neighborhoods and subdivisions of the municipality (Khaksari and others, 2006).

Neighborhood adjacent houses comes up in a specific geographical space and the accumulation of continuity, high or low, close association, neighborhood relationships and alliances among a group of people. In other words, a single neighborhood in a single homogeneous physical and social. Hence is necessary the

formation of an urban neighborhood or geographic areas with a more or less extent, the emergence and development of human resources and dependence on a small community and the interaction between them (Shokuei, 1993).

#### **-neighborhood community**

Community that is created due to the correlation between living space, a neighborhood demographics and physical forms that can have different sizes. (Sarraf, 2004) Here is our social context.

What the community is very important in this respect, there is a close relationship; social solidarity is a common fate, so the same can be said of urban neighborhood community in which it is located. Obviously, in such an environment, the relationship is close, face and body cannot be too certain. Because the nature of close relationships and face will fade and so by definition cannot be applied to a community where they live as possible. The definition of community is where it happens in everyday interaction. So that the action is more intense than the action outside of the local community. Hence Community have normative concept that social commitments based on shared values creates for its members and the rights of individuals to be associated with their responsibilities. Where there is an ongoing relationship between humans and the environment, and the correct understanding of the natural and social expectations of appropriate capacity will be followed that In turn, the possibility of social justice and ecological balance and will.

### **VI. PHYSICAL DEVELOPMENT**

Physical development includes the development and use of town is the city of factors including increasing population and the need for more urban arises. In other words, the physical development of cities can be considered increase urban area. (Sustainable urban development; 2000)

Forms of urban physical development include:

- Connected to the city's development
- Develop separate with spaces that are likely to be connected to the city within the time specified.
- Development of a discrete intervals within the time specified in the connection is not possible. Attached and detached areas where development can take the form of direct hinterland towns, because the development is located outside of this range, the Enhancements independent or dependent on other parts of the region. (Listoki, 2005)

Key Factors on physical development are as follows:

- Natural factors: posture and physical development of cities in the first place, their history and geographical circumstances. Adjacent space areas associated with environmental factors, such as ripples, and their proximity to terrain and climate conditions governing them has played a decisive role in how the physical development of cities, towns, so that to grow and develop compliance with these Terms form and they also communicate with each other continue. (Bullard, 2003)
- Economic factors: The foundation of urban studies and urban design of the city's economic base upon which employment, population, revenue, and ultimately is needed determine how much space. (Shieh , 2001 ) Thus, the fate of the city, with the amount income generating activities and it Basically turns out how, the rise, development and economic prosperity of cities before anything else. ( Dalir , 2006 ), the city that have been on the Silk Road , Port cities and towns along the agricultural and industrial centers have been created , Genesis and regardless of its booming economic activities ( services, agriculture or industry) owes factor or factors that to be in place cause earnings .
- Social factors: in urban studies, parallel to the characterization of the natural topography and buildings, it is necessary to pay attention to urban topography social groups. City development in close connection with urban population growth, and in this connection, the natural increase of population, the level of net migration to the city, making the transfer of rural population is a major factor to urban communities and build the city's population. (Rahnamaee, 199.)
- Political factors: different aspects of government policy could be effective in urban development, including the development of administrative, political, economic dependency in the Third World, the dominant social relations of production and the creation of Slums, suburban, urban wear Central banks are creating the ground and control the form of urban development and efficient use of urban land, is involved about balanced distribution of population decentralization and the creation of new cities.

### **VII. SPATIAL DEVELOPMENT**

The space is means combining physical structures in the below and above ground, which is driven by the availability and effectiveness of human activities and objectives of spatial development concept, the definition of long-term model of regional development, which includes improving the economic competitiveness and well quality of life, environmental protection, nature conservation and sustainable use of natural resources, conservation and protection of the cultural heritage against natural disasters and other

integrated hazards. Spatial development as a tool to monitor the state space, the set of user's question, determines the mode of usage of space during the construction process and the implementation of programs and development of the lands.

Number of spatial development priorities as follows:

These results in the development of the integration methods are not scheduled to occur and the problem is exacerbated, and an incredible range of environmental impacts are which to develop services that are not in the short term. To solve this problem, environmental sustainability coordination of spatial planning can have a significant impact on regional spatial development coordinator.

- Depletion of natural resources and agricultural land values: these two basic issues discussed, in relation to the built environment is fragmented and dispersed. As a result of these two approaches, the spatial development of many negative effects on sensitive natural and valuable agricultural land will be eroded. Management of natural resources and agricultural land in the preservation of this valuable resource effectively.

### VIII. CRITICISM ON SMART GROWTH

there are considerable controversy regarding the inability to manage urban development. Critics argue that the real benefits of smart growth and smart growth increases the density is very low and worsening living conditions. They claim that smart growth increases traffic congestion, pollution, accidents, costs of public services, crime and poverty.

A major criticism of smart growth, briefly include:

1 - People prefer sprawl and car-based society: the developments of distributed and community-based cars as well as a variety of alternative modes of transportation. In fact, critics are not considered of the many benefits of smart growth, including possible financial savings, increased physical mobility of people, community cohesion and protection of the environment.

2 - Smart Growth increases the amount of regulation and thus reduces the amount of freedom leads to: Opponents believe that smart growth increases and subsequent regulations will reduce individual liberty, However many existing regulations restrict smart growth strategies of taking away freedoms. On the other hand, with activities such as the creation of smart growth development projects and to choose the right people to adopt a flexible way to travel to the release of individual and social leads.

3 - Smart Growth lowers the purchasing power of people: Critics of smart growth by reducing the need for land, housing costs will increase, but is to overlook the growth of the smart ways to reduce household spending.

4 - Smart growth can lead to increased density: Critics of smart growth, traffic density increases and consequently lowers the quality of the transportation system, while smart growth along with increased density to increase accessibility and opportunities for travel leads to a variety. You should also bear in mind that traffic congestion alone is not is a good indicator for judging the quality of the transport system.

5 - The cost of public services: Although many studies showed a decrease in the cost of development and public service in communities that make use of smart growth recommendations, but many critics saying it ignores the fact that the dispersion causes all these services.

6 - Economic Development: Smart Growth Critics claim that the economy strikes. Smart growth seeks to increase economic efficiency and economic growth is associated with high income. (Litman, 2005).

### IX. NEIGHBORHOOD DEVELOPMENT INDICATORS

Neighborhood as a social unit - physical examines, therefore, appropriate for a community development must be studied both social factors and the physical parameters. Neighborhood social indicators summarized as follows:

- Character and vitality
- Safety of neighborhood
- A sense of community
- A neighborhood social cohesion
- Homogeneity and cultural heterogeneity
- Neighborhood Partnerships
- Populated locality (Azizi, 2006)

The body index briefly neighborhood include:

- Dynamism and adaptability
- Visual diversity
- Density and bearing capacity of neighborhood
- Neighborhood boundary
- The size of the neighborhood
- Access and communication networks
- Environmental issues
- The physical indicators (Square, mosques, baths, markets, etc) (Azizi, 2006)

## X. NEIGHBORHOOD SUSTAINABILITY

It has ever offered compared with the definitions and concepts of sustainable development at the international, national, regional and city, the concept of sustainable development at the neighborhood scale is not yet clear certainty of its concepts and the correctness of the analysis has been (Azizi, 2006). Sustainability requires that decisions and activities, leading to social investment in local capacity to be strengthened in this way, or at least Investment conditions, natural, social, human, social and does not reduce (Eftekhari, 2004).

Many neighborhood stability principles and criteria have been proposed and analyzed. Including the principles and criteria can be identified and vitality, dynamism and adaptability, diversity, fair access, congestion and capacity Neighborhood cited. (Azizi, 2006)

Aspects of sustainable development that can be placed in line with the neighborhood include:

1 - Self-Sufficiency: Independence meet the needs of residents, an important point is stable in environments that vary in scale from one building to the neighborhood, the city and the region is recommended. In this chain, the community can play a key role, although in reality, completely self-sufficient neighborhoods in the city, far-fetched and illogical.

2 - Reduce travel within the city: the cloud - modern city, reducing the need for intercity travel. This can aim be met by encouraging walking, cycling and using public transport. Local service is provided at a threshold of hiking and distribution facilities in the neighborhood, along with a balanced distribution of activity centers in the area can meet such a goal.

3 - The social capability and collective sense: it is also a component of sustainable communities. Sustainability is not only dealing with energy and recycled materials but all aspects of life to achieve a pleasant and safe environment in which it is necessary. The role of social factors, especially when it is highlighted that the people they are involved in decisions about their surroundings. In fact the requirements of sustainable development cannot be imposed and the active participation of local communities is essential.

4 - Sense of place and identity: it is other components of a sustainable environment, having is special a sense of place and identity. It has were established traditional settlements, fitness and a better match between the spatial structure, the element of time, meaning, communication, and social culture. Recently an approach that mimics the look of traditional settlements, to achieve a common identity, location, and characteristics of the individual must identify the actual location specific and relevant to be replaced. A sustainable settlement must seek to upgrade and maintain their positive values and characteristics of the natural environment and cultural synthetic (Houghton & Puncar, 1996)

## XI. CONCLUSIONS

Urban management structure in recent decades, with features and constraints such as non-participatory, focus, system of scheduling, planning, top-down, bureaucratic and politicization of the urban development process lacks practical commitment to the principles and applications urban development has been. The management strategies are discussed developed to resolve these issues and problems at the micro level and neighborhoods.

Neighborhoods are considered as the smallest unit divisions. In general, both physical and social perspectives on urban neighborhoods that are in the neighborhood (neighborhood) and the neighborhood community (community) are expressed. Neighborhood perspective refers to the physical standards and the local community on social interactions within the neighborhood, and it emphasizes the social dimension and based on the quality of social relations within the defined neighborhood. However, in recent decades, such as smart growth, new approaches to deal with the problems of modern cities and uncontrolled urban expansion has established and increased the opening of new city development in old areas, the use of the existing potentials, density and knows.

The idea that the uncontrolled expansion pattern is formed, principles and strategies for the development of the community suggest. Principles such as citizen participation in planning, creating mixed use, protecting natural resources and open space, guiding development in existing communities and thus will help the creation of sustainable urban neighborhoods,.

## REFERENCE

- [1] Davoudi, Mohammad Ali(2006) " **provided the spatial development strategy based on sustainable development - the metropolitan area of Tehran**" Science and Research Branch, Islamic Azad University.
- [2] Hadadan Yazdi, kymia( 2006) " **Identification and control of land development patterns in dysfunctional urban areas with an emphasis on smart growth approach**", Tarbiat Modarres University.
- [3] khavaninzadeh , Sajjad(2011) "**with an emphasis on smart growth and urban spatial expansion control region of Tehran**", Islamic Azad University.



- [4] Gabriel , Steven;2009;"**A multiobjective optimization approach to smart growth in land development**"; University of Maryland
- [5] ICMA , EPA ;2006," **getting to smart growth : 100 policies for implementation**"
- [6] Miller,John ;2002;"**The smart growth debate:best practices for urban transportation planning**";University of Virginia
- [7] Preuss,Ilana;2005;"**smart growth and dynamic modeling:implications for quality of life in Montgomery County , M aryland**";University of Maryland
- [8] Turner , Matthew;2007;"**A simple theory of smart growth and sprawl**";University of Toronto.
- [9] Turner , Matthew;2007;"**A simple theory of smart growth and sprawl**";University of Toronto.