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NATIONAL URBAN POLICY PROGRAME IN I. R. IRAN

NATIONAL URBAN POLICY AND SMART CITY STRATEGY DOCUMENT

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National Urban Policy Programme

Developing National Urban Policy and Smart City Strategy in I.R. Iran

National Urban Policy and Smart City Strategy Document

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UN-Habitat:

Programme Coordinator: Remy Sietchiping

Project Manager: Sara Habibi

Project Coordinator: Maysam Basirat

Urban and Regional Planning Expert: Masoumeh Mirsafa

Urban Policy Expert: Hossein Aslipour

Smart City Expert: Abbas Shieh

Ministry of Roads and Urban Development Contributors:

Gholamreza Kazemian: Director general of Urban Planning and Development Plans, MoRUD

Ehsan Babaei: Urban Planning Expert, MoRUD

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1. Introduction and Background

1.1. NUP definition and framework

The current rate of urbanization will see 5.17 billion people living in urban areas by 2030. Urbanization has many features that can be leveraged to improve the livelihoods of all citizens – rural, peri-urban and urban. A NUP is an important tool for governments that seek to manage and direct rapid urbanization, and to tap into urbanization's positive effects while accommodating its inevitable stresses.

According to UN-Habitat, a NUP is: "a coherent set of decisions through a deliberate government-led process of coordinating and rallying various actors towards a common vision and goal that will promote more transformative, productive, inclusive and resilient urban development for the long term" (UN-Habitat, 2014).

The work of UN-Habitat on NUP is rooted in the Governing Council resolution HSP/GC/24/L.6 which "requests the Executive Director, in consultation with the Committee of Permanent Representatives, to develop a general guiding framework for the development, where appropriate, of NUPs, based on international good experiences, to further support member states when developing and improving

their urban policies". There is a lack of the supporting policies and frameworks that can leverage the urbanization process for increased development gains and guide it towards sustainable patterns. In this way, UN-Habitat is currently working to support a number of countries with the development, implementation and monitoring and evaluation of NUP. The development of these policies requires a coordinated approach and clear policy directions.

Building on previous project experiences and responding to the growing demand and needs from countries and partners, UN-Habitat, through the National Urban Policy Programme (NUPP) support countries by equipping them with relevant tools for the development and implementation of integrated and inclusive National Urban Policy and Smart City Strategy.

In Iran, urban and regional planning is based on more than 50 years of experience. The urbanisation process in Iran presents both opportunities and challenges. Similar to the characteristics of many countries in the world, Iran's urbanisation faces major challenges in areas such as rapid growth of urban population, housing, integrated urban management, and climate change. In this regard, adopting NUP can help establishing a framework for the overall process of urbanisation.

The pilot phase of the National Urban Policy Programme (NUPP): "Developing NUP and Smart City Strategies in Iran" started in 2017 in collaboration between UN-Habitat, Republic of Korea, in three pilot countries of Niger, Myanmar, and Islamic Republic of Iran. It aimed to develop National Urban Policies and Smart City Strategies in Iran and to offer a platform to foster synergy, coherence, capacity development and mutual learning and exchange global experiences on National Urban Policy. There are three main accomplishments expected from the pilot phase of the National Urban Policy Programme:

1. Enhanced capacity of sub-national and national governments in the three pilot countries to develop, implement, and monitor and evaluate national urban policy (NUP and SUP) and develop smart city strategies.

2. Increased centralization of knowledge and tools on the development, implementation, and

monitoring and evaluation of urban policy (NUP and SUP) and smart city strategies.

3. Augmented opportunity for knowledge sharing and peer learning activities on urban policy (NUP and SUP) and smart city strategies.

Moreover, NUP addresses these issues in Iran:

- Lack of communication and inconsistency between the national and local levels,
- Absence of integrated planning in the urban management system,
- Poor understanding of the concerns and interests of stakeholders, beneficiaries and related end users,
- Lack of public participation in urban planning,
- Inefficiency of some urban planning laws, rules and regulations,
- Lack of inter organizational relationship,

NUPP in I.R. Iran seeks to contribute to a larger response to urbanization and its emerging challenges, while also consolidating and sharing knowledge on urban policy at the global level. It is also a tool for implementation and monitoring of global urban agendas, such as the New Urban Agenda, Paris Agreement (agreed upon by I. R. Iran in in Paris, on 12 December 2015) and Sendai Framework (agreed upon by I. R. Iran in UN World Conference in Sendai, Japan, on 18 March 2015).

The NUPP in I.R. Iran has gone through different steps since its beginning. In the first step, the "Diagnosis Report" was prepared by the selected consultant and launched in December 2018. In the next step of NUPP, by receiving the approval of the Project Document and preparation of the Inception Report, preparation of the National Urban Policy and Smart City Strategy document is pursued as part of the joint programme of the UN-Habitat and the Urban Planning and Architecture Directorate of the Ministry of Roads and Urban Development (MoRUD) and other partners and stakeholders.

1.2. NUP and its Connection to NUA

National Urban Policy has a two-fold role in the future of our cities; on the national level, NUP is considered as a key tool for governments to coordinate territorial and urban development by linking sectorial policies and connecting national, regional and local government policies, and on the international level, NUP promotes sustainable urban development. Accordingly, one of the major global frameworks that is relevant to and supportive of NUP includes the New Urban Agenda.

New Urban Agenda

Throughout the third United Nations Conference on Housing and Sustainable Development (Habitat III) preparatory process, NUP has been recognized as an essential tool for government and other stakeholders to achieve sustainable urbanization. The selection of NUP as one of ten thematic Policy Units, in preparation for Habitat III, is demonstrative of the recognition on the international stage of the relevance of NUP to promote sustainable urban development. By working to facilitate vertical and horizontal institutional linkages, NUP can

help to create an enabling institutional environment, assist with the mobilization of stakeholders, assess and build capacities (institutional, financial, human, etc), and define an urban vision and plan for a country.

The New Urban Agenda proposes NUPs within local-national partnerships as one of the fundamental drivers of change:

"We will take measures to establish legal and policy frameworks, based on the principles of equality and non-discrimination, to better enable prevailing governments to effectively implement national urban policies, as appropriate, and to empower them as policy and decision-makers, ensuring appropriate fiscal, political, and administrative decentralization based on the principle of subsidiarity (UN-Habitat, 2016b)

The Policy Paper on NUP developed and submitted by the Habitat III Policy Unit, presents key issues involved in the design, implementation, monitoring, and evaluation of NUPs and provides action-oriented recommendations. Habitat III Policy Paper recommends the following eight tangible actions:

a) Establishing a technical and political consensus on a national urban policy, including the objective, the value-added, contents and scope, and the time frame;
b) Engaging all the key stakeholders from the outset of the national urban policy process;
c) Creating a national and shared vision/strategy for urban policies, with clear objectives, targets, responsible institutions, and implementation and monitoring mechanisms;
d) Reviewing and adjusting existing national legal, institutional and fiscal frameworks and guidelines of all sectors in light of the agreed urban strategy;
e) Maximizing the use of technology to help evidence-based decision-making;
f) Establishing a participatory mechanism to facilitate policy dialogues among national and sub-national levels, as well as between State and non-State actors;
g) Establishing a global mechanism to stimulate policy-relevant research to support national urban policies and the implementation of the New Urban Agenda; and
h) Building capacity (human, institutional, financial and technical) at all levels of government.

1.3. History of urban policy making in I.R. Iran

The 100-year background of change in the management of Iranian cities can well represent the constant tensions between different levels of government, institutions, as well as the complexity of power relations between several actors. By more than five decades of the Preparation of of urban plans and more than two decades of the prevalence of the concept of urban management, urban policy-making has been a neglected layer in both practical and theoretical areas in advancing urban affairs (Kazemian, 2016: 122). Adopting a planning approach to managing the country goesback to 1947. In 1948, Iran officially had a plan and from that year to 1977, six development plans, including two plans with a 7-year horizon and four plans with a 5-year horizon have been developed

Apart from the urban and regional plans that will be discussed later, two subjects influence macro-policies in the Iranian policy making system The first is the Meta policies of the system, which are prepared and approved by the Expediency Council and communicated by the Supreme Leader and second is membership in international treaties and conventions.

1.4. NUP conceptual framework and methodology

1.4.1. National urban policy process, methodology and framework

This research employs a mixed-method to develop the national urban policies in Iran; accordingly, the research is the qualitative type with an exploratory approach in response to the question of "what are policies and strategies" and is simultaneously quantitative in response to the question of prioritization of proposed policies. Considering that the output of the qualitative part of the research is the input of its quantitative part (prioritization), so among the various mixed method research, this project uses the exploratory mixed-method approach, in which first the qualitative research and then Quantitative research is done (Morse and Niehaus, 2016).

For this purpose, the thematic analysis strategy is used in the qualitative part. After identifying urban policies and smart city strategies based on the qualitative research, the quantitative content analysis method based on the abundance of frequent themes in the qualitative analysis phase is used to prioritize the identified policies or strategies.

The thematic analysis method is one of the most widely used methods under the Qualitative content analysis strategy (Braun & Clarke, 2006). Qualitative content analysis is performed with two inductive or deductive approaches that this research will follow the Abductive (Simultaneous application of deductive and inductive approach) Content Analysis.

In order to implement the NUP project in IR. Iran, the following steps were taken based on the methodology designed during the research (Figure 1)

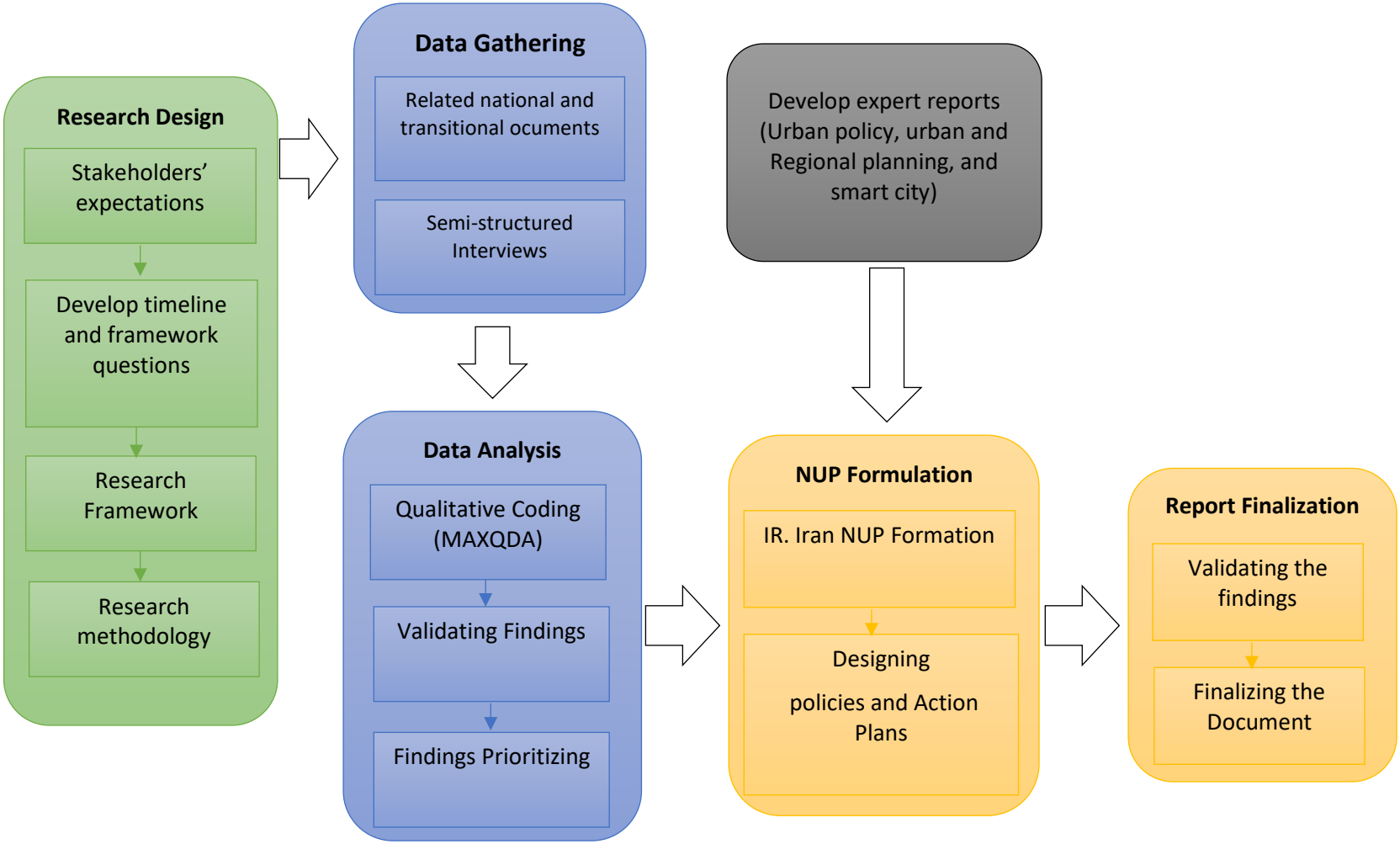

Figure 1 NUP process in I.R. Iran

Firstly, the expectations from the Ministry of Roads and Urban Development (MoRUD) and UN-Habitat Headquarters were received through organizing meetings. Then, the research framework and methodology were developed. National and transitional Documents were identified and reviewed in the areas of urban planning, policy-making and smart city. Moreover, to receive the viewpoints of experts, 24 semi-structured interviews were done in the mentioned areas, and results were analysed through qualitative methods. Two workshops were held in order to validate the process of developing the NUP and Smart City Documents. The final result was developing six technical reports in the following areas:

1. The Research Methodology Report;
2. Review and Analysis of National and Transnational Documents, Regulations and Laws on Urban Planning in I.R. Iran;
3. Urban Policy Making Report;
4. Review and Analysis of the Content of Interviews with Urban Planning and Policy Experts;
5. Review and Analysis of National and Transnational Documents, Regulations and Laws on Smart Cities in I.R. Iran;
6. Review and Analysis of the Content of Interviews with Smart City Experts.

The process of formulation of the policies started after receiving the comments of the MoRUD on technical reports and positive feedback on 13 prioritized areas. In the final step, action plans were developed in the area of urban policy, and it was attempted to reflect the results of developing the “Smart City Strategic Plan“ by proposing interlinked action plans.

The Conceptual Framework of the research can be divided as two following parts:

- **NUP conceptual framework**

According to the definition of NUP, UN-Habitat has prepared a guiding framework for the NUP formation and has defined six themes under the concept of NUP including: urban governance, spatial sustainability, financial sustainability, Economic sustainability, social sustainability and environmental sustainability. It is necessary to emphasize that the aforementioned themes can be customized according to the context and conditions of countries.

- **Conceptual framework from the perspective of the urban policy-making process:**

1. **Main urban problems of Iran**: Since public policy-making is a problem-oriented knowledge, the starting point in urban policy-making in Iran is to identify and prioritize the main urban issues and problems.

2. **Policy goals and Objectives**: Each policy takes steps towards achieving goals and objectives that are usually based on upstream documents governing urban policy as well as national and transnational documented laws and procedures.

3. **Policy implementation and its instruments**: Policies are implemented with three general approaches: top-down (by the central/local government to the citizens), bottom-up (by involving citizens), or a combination. Among these, some of the most important policy instruments are the direct provision of services by the government, building infrastructure, equipment, or facilities required by the government, collection of taxes, fines or levies, granting of loans and banking facilities, setting rules and regulations, services Insurance, providing financial and non-financial incentives, imposing sanctions and restrictions, training

and capacity building of the audience, etc. These instruments can be classified into a spectrum from coercive to voluntary instruments.

4. **Causal model of achieving outputs and impacts**: One of the important components of policy design is a causal model or chain of urban problems towards policies and ultimately the outputs and effects/impacts of the policy.

5. **Policy Timing**: The required time period for policy implementation can be divided to three types: short-term (less than three year); mid-term (between three to five years) or finally long term (more than five years).

6. **Actors**: Various classifications are presented to distinguish the types of actors influencing the public policy process, here, which are to be divided into actors: actors in charge or responsible for the policy and other influential actors in the policy-making process.

7. **Smart City Considerations**: The smart city approach is not separate from the design of urban policy, but has integrated considerations in all urban policies.

Table 1 reflects the general framework for the formation of Iran's national urban policies in terms of public policy knowledge.

Table 1.The general framework for the formation of policies and action plans

Problem #			
Priority			
Some Evidence			
Related Documents			
Policy Goal			
Policy Objectives			
NUP	**SUB_POLICIES**		
NUP #			
Policy Instruments		Top-down approach ☐ Bottom-up approach ☐ Mixed approach ☐	**Coercive** ☐ **Persuasion** ☐ **Information** ☐ **Capacity Building** ☐ **Taxes &tax exemptions** ☐
Policy Timing: (years)	**Short-term** ☐ **Mid-term** ☐ **Long-term** ☐		
Policy Evaluation Criteria	**Output:**	**Impact and Effect:**	
Policy Implementation	**Corresponding Actor(s):** Governance level ☐ Managerial Level ☐	**Influent Actor(s)**	
SMART City Considerations			

This framework will be applied to formulate the policies and action plans. Parts of the above table (the 8 first rows) are used in the NUP formulation of IR. Iran and other parts (policy instruments, policy timing, policy evaluation criteria, actors) are used in the table of action plan design.

1.4.2. NUP stakeholders to be involved

Policy-making involves the process of making a set of decisions for all stages of problem identification and definition, finding solutions, choosing from them, taking action, and evaluating (Dye, 2012). In this regard, various studies have defined and identified stakeholders in the field of public policy (Beach, 2009; Bryson, 2003; Kivits, 2013).In addition, some studies have focused on identifying and defining them in urban policy (Gupta, 1995; Schmeer, 1999; Mushove and Vogel, 2005; Reed, 2008).

One of the most basic measures to promote urban problem solving is to identify and involve stakeholders in decision-making (Basedow, Westrope, & Meaux, 2017). Thus, a "stakeholder power analysis" approach that addresses how people, institutions, and policies interact can be helpful. Therefore, by presenting an authoritarian and centralized assessment in Iranian urban policy-making, actors active in this field can be introduced as such by nature (Table 2).

Table 2 Actors in urban policy-making of I.R. Iran

stakeholders	Roles in urban policy making
City Council	It should be the most important institution of urban policy-making, but it is not widely recognized. The city council has a greater role in macro-policies than the municipality. But for various causes, such as not getting involved in the basic issues of the city, it has not gained much trust.
Municipality of Tehran	It has the most prominent role in policy-making for urban infrastructure; However, in the event of a conflict, it has the least power in the final decision.
Public sector	It had less awareness of the major issues in the city and its citizens; At the same time, they have the largest share of policy-making in all areas. Despite having the most financial resources; But it is more focused on strategies and is the final decision maker in case of conflict.
Owners of capital and power (informal influencers)	They have the most resources after the government. Economic development, as well as land and housing, play a significant role in physical development policy. They have little knowledge of the real needs of citizens and are irresponsible about the development of urban infrastructure and transportation. They are not qualified to run the city by nature. Given their interests, they are interested in participating in urban policy-making, but there is no formal process for it.
Citizens	There are neglected actors who, due to the lack of the requirements for participation, and their lack of self-belief, have a presence of less than 5% in urban policy-making.

Kazemian and Mir Abedini, 2011

In the case of developing NUP, different stakeholders were identified in partnership with MoRUD, and it was tried to receive their viewpoints and comments in developing the NUP Document. Apart from the Steering Committee members that guided the project's technical aspects, the main stakeholders involved in developing the Document could be defined as National Government, Local governments, professionals, and academia.

2. Rationale for National Urban Policy in I.R. Iran

2.1. Iran Urban Profile

This section provides a brief overview of the demographic dynamics and urbanization process in Iran including the population status, distribution and density of the population across the country as well as the urbanization rate, and immigration trends.

2.1.1. Population Dynamics

According to the latest national census on population and housing, Iran's total population in 2016 was 79,926,270. The figures provided by the Statistical Centre of Iran shows that in May 2022, Iran's total population has reached 84,443,018. One of the main objectives of the Sixth National Development Plan concerning the population, was to increase the population from 79 million to around 84 million people in 2021, with an average annual growth rate of 1.26%. An objective that has been met according to the recent figures by Statistical Centre of Iran. The highest population growth (3.91 percent) in Iran happened in 1976-1986, and ever since the population growth rate has declined to 1.2 percent (2.0 percent in urban areas and -0.7% in rural areas).

In the age pyramid of 2011, age groups of 20-24 and 25-29 years old show a significant population increase (the generation born after the revolution of 1979), which has caused the country to face the phenomenon of "youth inflation". Although economists refer to this as a "golden opportunity," overpopulation at this age will affect the birth rate in the next decades, known as the "population torque effect." In the census of 2016, this trend has continued and the population of 0-4 years is more than the population of 5-9 years (Statistical Centre of Iran, 2019).

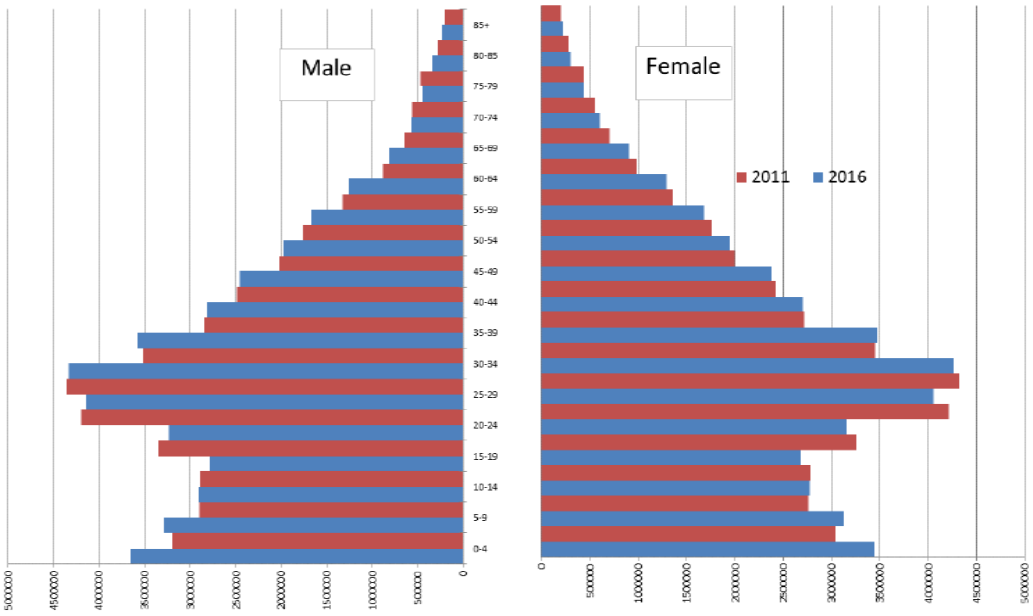

Figure 2 Comparison of age distribution pyramid of Iran`s population: 2011 and 2016 (Statistical Centre of Iran, 2016)

In demographic studies, to have an overview of population structure, the age structure of the population can be examined in the following three main age groups, including youth (0 to 14 years), middle aged (15 to 64 years), and elderly (65 years and older). The elderly population of Iran has seen significant changes in the last few decades. Figure 3 presents the aging index of Iran's population between 1966 and 2016. The Aging Index refers to the number of elderly population (aged 65 years and over) per 100 individuals younger than 14 years old in a specific population. The aging index from 1956 to 1986, has a gradual decline reaching 6.68%. This is mainly due to the decrease in child and infant mortality and in part to the increase in births, which has caused the annual growth rate of children and adolescents to be higher than the growth rate of the elderly population. Since 1986, with a rapid decline in fertility, the trend has been reversed, so that in 2016, there were 38.6 elderly people every 100 young individuals that shows a relatively rapid increase of the aging index of the country from 1996.

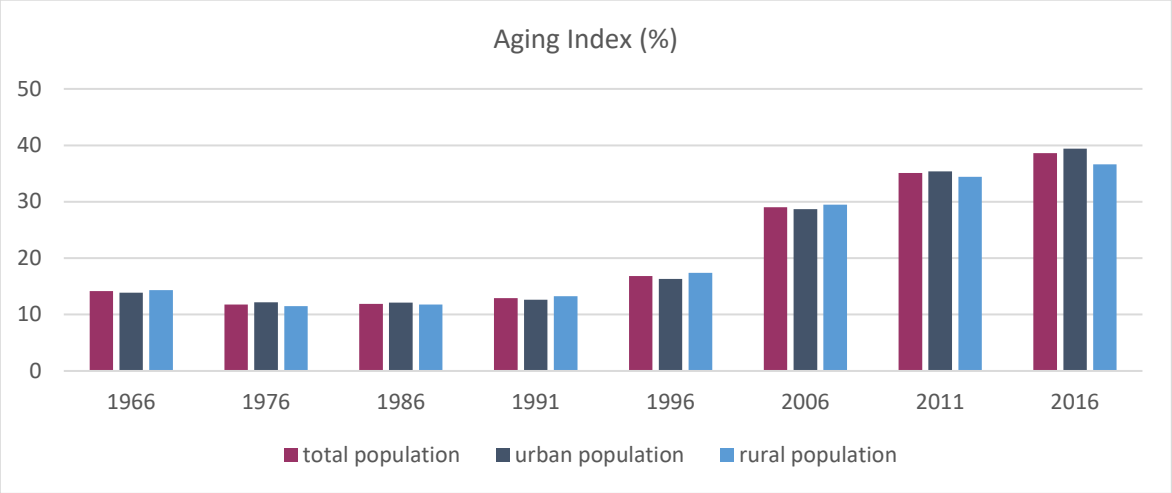

Figure 3 Aging index of Iran's population between 1966 and 2016 (Statistical Centre of Iran, 2016)

2.1.2. Urbanization rate

Iran has gone through very rapid urbanization in the last few decades (74.1% of the total population live in urban areas by 2016). The main reasons for urban population growth include the natural growth of population in urban areas, increased number of cities in Iran (from 201 cities in 1956 to 1245 cities in 2016), integration of villages into the cities, and rural-urban migration. Tehran, Qom and Alborz provinces have more than 90 percent of their population living in urban areas, and are the most urbanized provinces of Iran. Accordingly, the largest and smallest share of the total population and urban population live in the provinces of Tehran and Ilam (14.7% and 1% of total urban population), respectively.

- **Distribution of urban population**

A distinguishing feature of Iran's urbanisation is the concentration of urban population in its largest cities. Iran's highest urban growth population has occurred in Tehran and other metropolitan cities of the country. 35% of Iran's urban population live in eight metropolitan cities. This has resulted in polarized growth and uneven population distribution across the country. Figure 5 presents the population growth of eight metropolises of Iran in six decades. It highlights the difference between the capital city of Tehran with other metropolises and consequently, the macrocephaly of Tehran.

Rapid growth of metropolitan regions and the imbalanced urban development reality of the country have had other consequences such as formation of informal settlements. Alaedini (2015) introduces unequal access to resources between urban and rural areas and the resulting high rates of rural-urban migration, along with the rapid urbanization, housing policy, urban plans, and the macroeconomic environment as the main culprits behind the formation and expansion of informal settlements. In the typical cases of informal settlements, poor migrants and other low-income households unable to afford standard shelter purchase land in the informal market of privately owned lands in areas just outside official city boundaries. According to the figures provided by Housing Comprehensive Plan: Consolidation Document (MoRUD, 2015, p.18), some 11 million people including 3.2 million households live in 56000 hectares of informal settlements in urban and rural areas of Iran. Among which, five metropolises including Tehran, Mashhad, Zahedan, Tabriz and Isfahan have critical conditions.

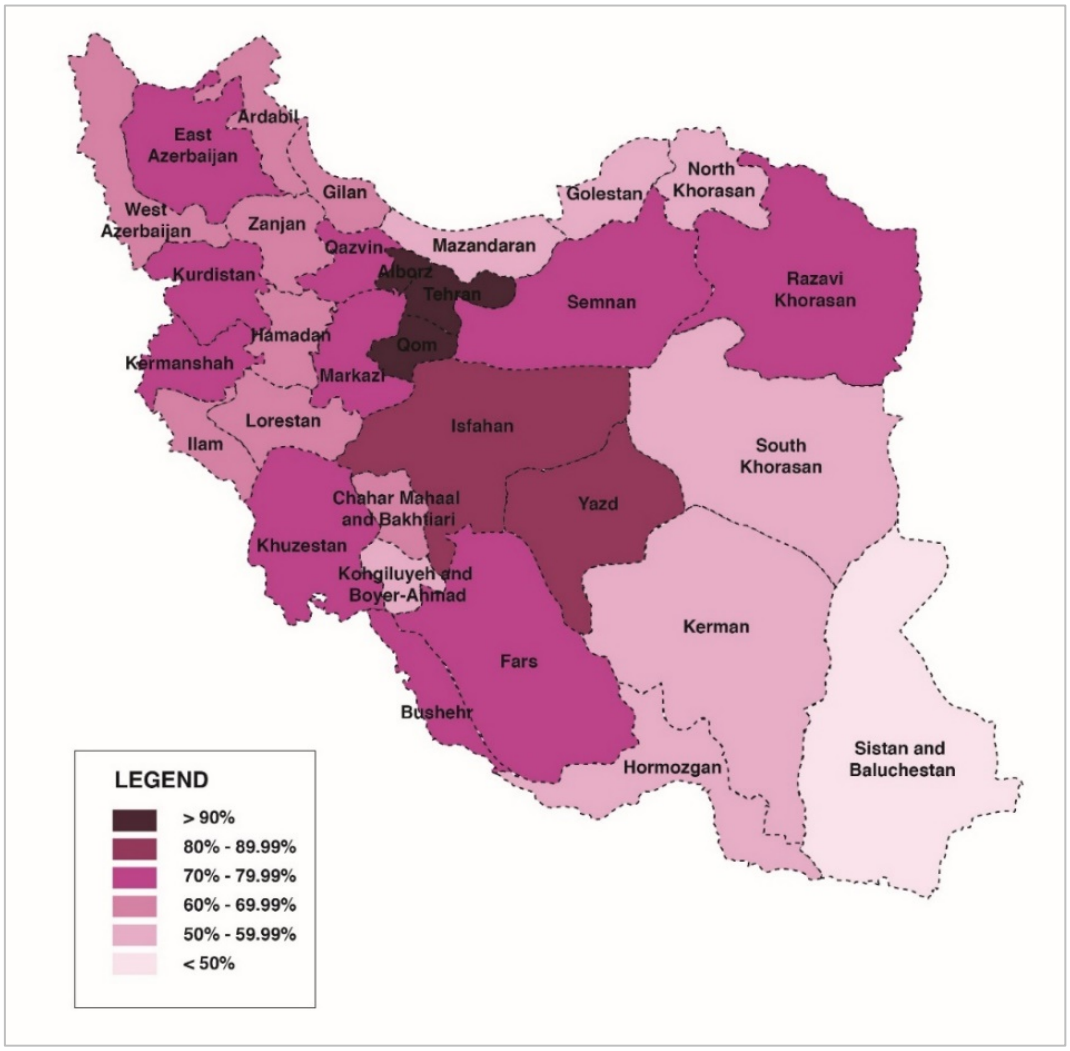

Figure 4 Urbanization rate by province (Statistical Centre of Iran, 2016)

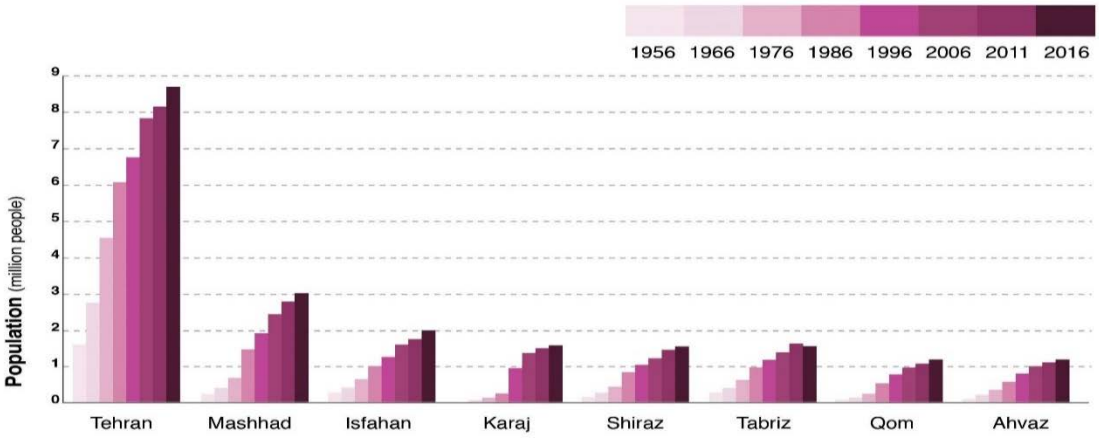

Figure 5 Population of Iranian Metropolises (1956-2016) (Fathi 2020, p.7)

- **Population density**

Among various provinces of Iran, the highest population density belongs to the province of Tehran with 969 people per square kilometre, followed by Alborz and Gilan with 529 and 180 people per square kilometre, respectively. The lowest population density belongs to the provinces of Yazd, Semnan and South-Khorasan with 15, 7, and 5 inhabitants per square kilometre. The imbalanced spatial distribution of the population across the country is highly influenced by geographical and natural factors including the deserts, high mountains and highlands with poor condition for settlement and drought in a large part of the country (Statistical Centre of Iran, 2019). Consequently, the western part of the country, due to having more favourable environment than the eastern part, accommodate larger population. Significant differences in population density in various parts of the country should be considered in developing urban policies.

In addition to the geographic and natural circumstances, numerous historical, social and economic factors have concentrated most of the investments, especially in the last fifty years, in certain areas of the country, turning these areas into major hubs of Industrial and economic development and attracting points for immigrant populations from other regions.

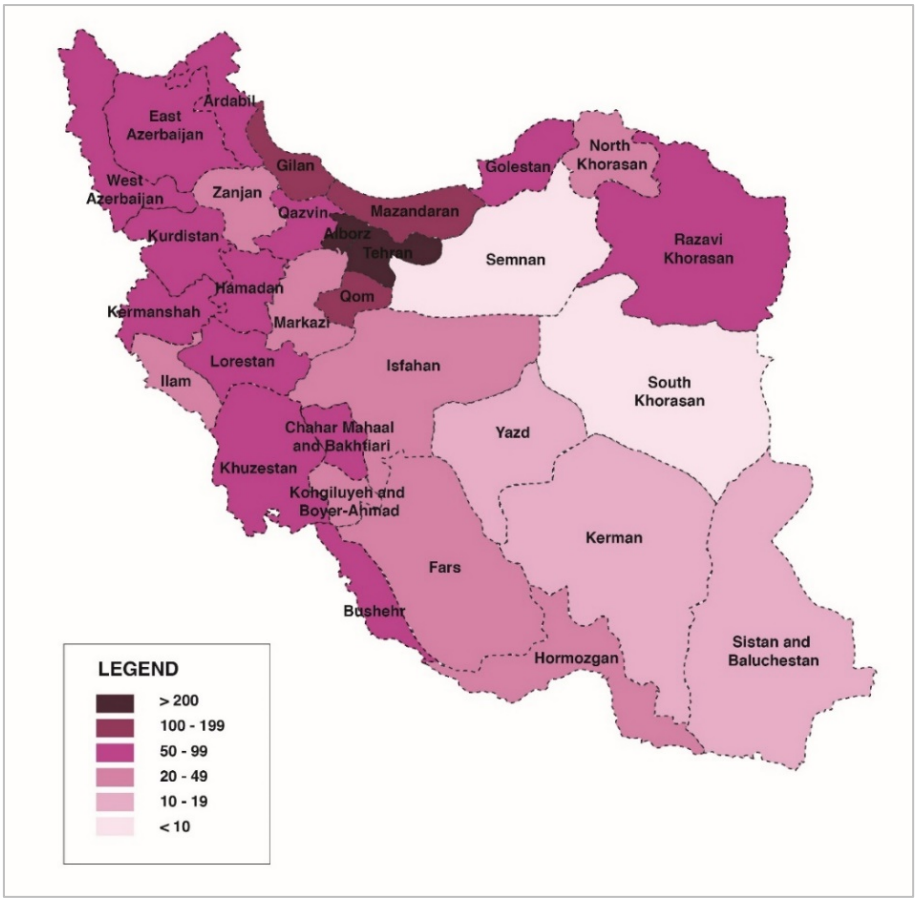

Figure 6 Relative distribution of population by province (Statistical Center of Iran, 2016)

2.1.3. Migration situation

Figures by the Statistical Centre of Iran (2016) shows that:

- 2011 to 2016, 5.4 percent of the total population have migrated, 82 percent of them from urban and 18 percent from rural areas.
- The highest percentage (47%) are immigrants from cities of other provinces and 32% have migrated to cities in the same province (5% are from cities of the same county and 27% are from cities of the same province).
- The age structure of the migrants in the urban areas of the country in 2016 indicates the high proportion of age groups 20 to 34 compared to other groups.

The net migration rate is the difference between the number of immigrants and the number of emigrants throughout the year. When the number of immigrants is larger than the number of emigrants, a positive net migration rate occurs. In a five-year period (2011-2016), provinces of Tehran (166920) and Alborz (104232), Yazd (36746), Semnan (30646), and Isfahan (24763) were the top receiving provinces. On the other end, provinces of Khuzestan (-81859), Lorestan (-64122), Kermanshah (-34928), Hamedan (-32418), and Sistan and Baluchestan (-32326) are the top five sending provinces. (Figure 7)

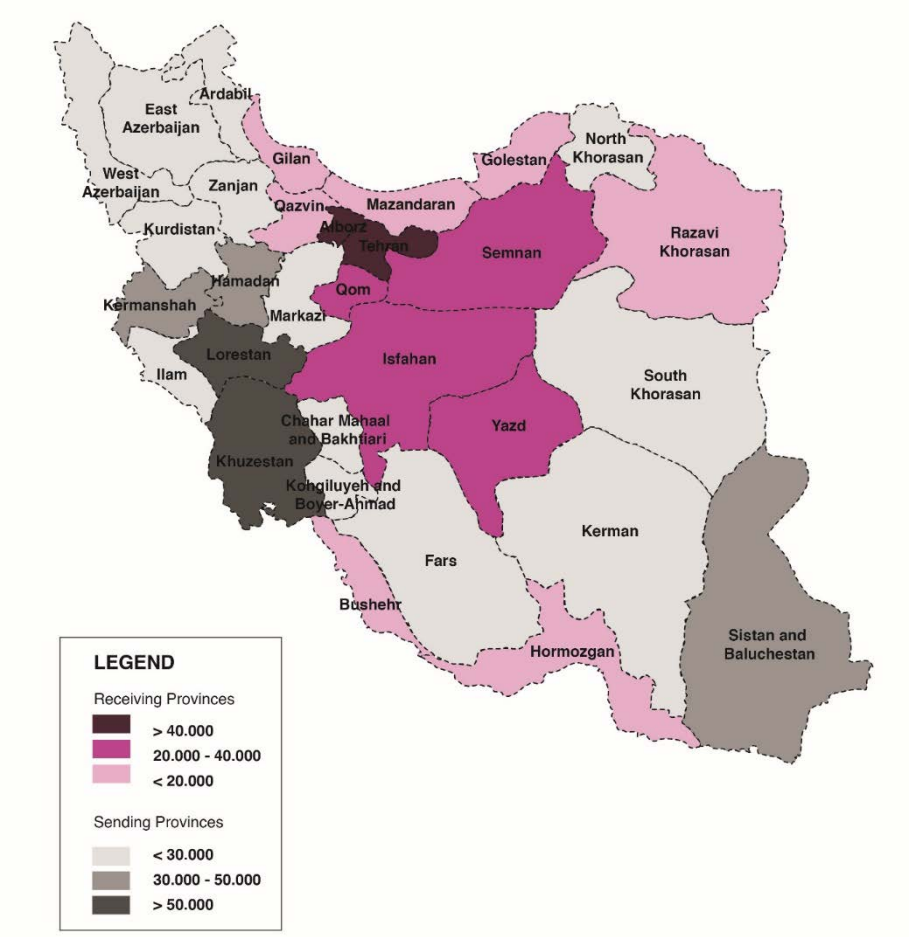

Figure 7 Net migration rate: sending and receiving province in Iran (Statistical Center of Iran, 2016)

2.1.3. Concluding remarks

- **Growing population**: The population of Iran is about 85 million people, with the largest share of population (16.6%) living in the province of Tehran and the smallest share (less than 1%) in the province of Ilam.
- **Polarized urbanization**: Urban distribution is not balanced nationwide; in provinces such as Qom and Tehran, more than 90 per cent of the population live in the cities, while this proportion is less than 50 per cent in the province of Sistan and Baluchestan.
- **Imbalanced urban distribution**: Eight metropolitan areas of Tehran, Mashhad, Isfahan, Karaj, Shiraz, Tabriz, Qom and Ahvaz, each with a population of more than one million, contain 35% of the Iranian urban population (equal to 25% of total population).
- **Aging population**: Due to the decline in fertility, the aging index of the country shows a relatively rapid increase since 1996, and the middle age group will dominate Iran's population in the future.
- **Increased internal migration**: The level of development of origin is the main factor in population migration, and therefore, in provinces with higher levels of development, urbanization and immigration rates are higher (61 per cent of the provinces of the country are sending migrants)
- **Lower development in Coastal provinces**: despite high potentials Sistan and Baluchestan, Hormozgan and Bushehr have relatively low population.

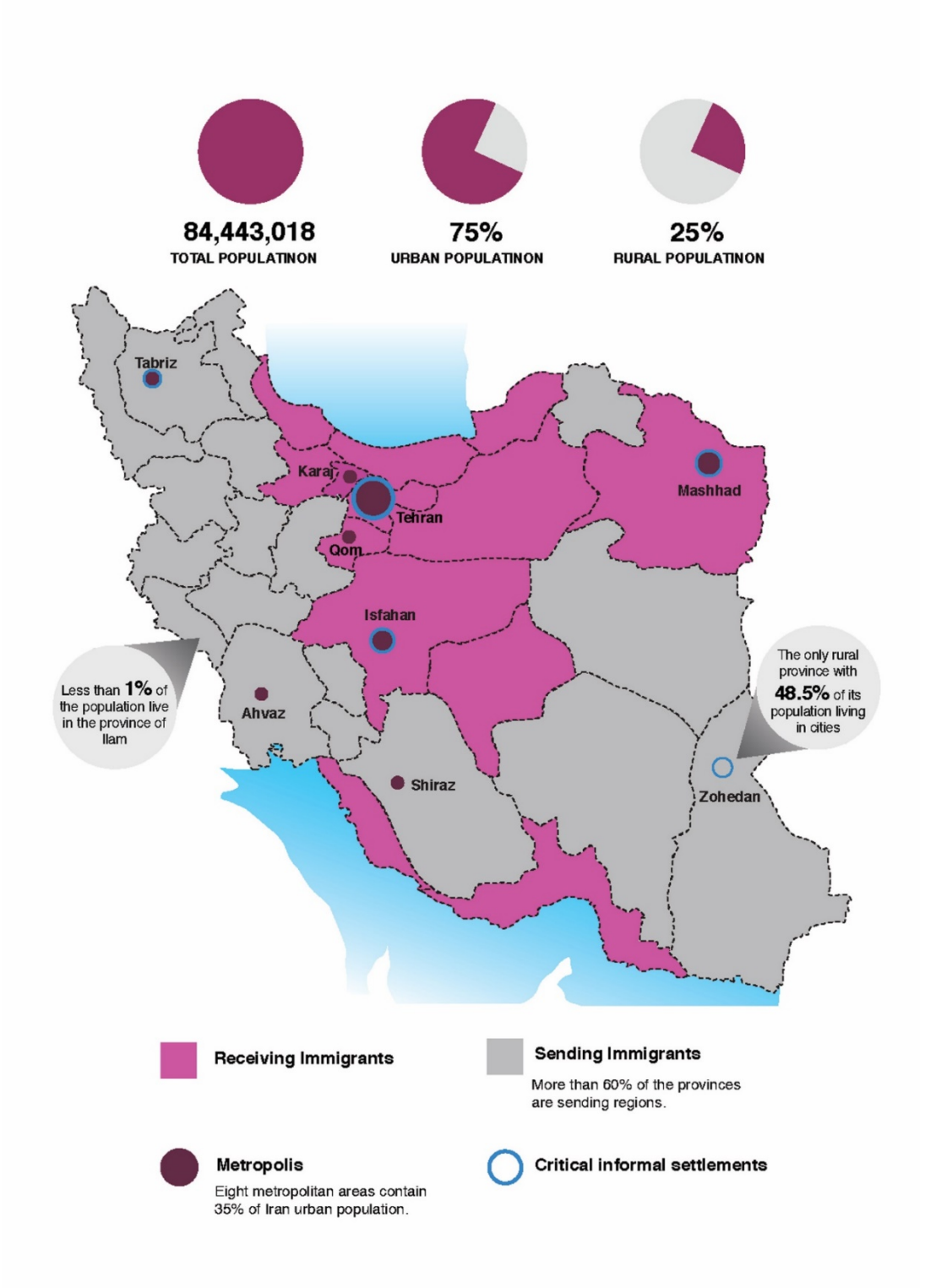

Figure 8 An overview of the population and urban dynamics of I.R. Iran

2.2. Priority Areas in Urban Policy Making in I.R. Iran

The main priority areas in urban policymaking in Iran are identified through analysing the content of the most important national and transnational documents (eight international and twenty-five national documents) relevant to Iran's urban planning conditions and interviews by Iranian urban planning and policy experts. Based on the data analysis, this section provides a brief overview of the needs and challenges of the urban and regional planning system and introduces the urban policymaking priorities in Iran.

2.2.1. Urban policymaking priorities recognized by reviewing the national and transnational documents

According to the given methodology of the research,

The national macro-scale plans, laws and legal frameworks as well as the transnational documents on National Urban Policy are studied and analysed. Accordingly, the documents examined in this research are divided into two categories, as follows:

1. National documents and laws,
2. International documents including publications on the NUP concept and development process, and NUPs developed by other countries (Table 3)

The content analysis is conducted through thematic coding using MAXQDA software. It adopts three hierarchical levels named basic, organizing, and global themes to discriminate in different degrees between rather abstract and rather concrete content.

The research borrows UN-Habitat's (2019) structure to define the primary list of global themes of the content analysis. Although one has to consider that despite similarities, the NUP's substantive content will vary enormously from country to country. Therefore, other global themes are developed within the thematic coding process. (Table 4)

The findings of such an analysis along with Iran's main urban challenges highlight the country's urban policy gaps and indicates the main priorities to formulate Iran NUP.

Table 3 Selected documents for the review and analysis

No.	ID	Title of the Document	Date of approval	Reference Institution
1	NC1	Iran meta-policies in urban planning	2011	EDCI
2	NC2	Iran meta-policies in housing	2011	EDCI
3	NC3	Iran meta-policies in spatial planning	2011	EDCI
4	NC4	Iran meta-policies in environment	2015	EDCI
5	NC5	Iran National Spatial Plan	2021	SCoSP
6	NR1	Regional Spatial plans at a glance	2020	SCoSP
7	NR2	Regional studies and Iran Spatial plan	2019	IPRC
8	NR3	Comprehensive Housing Plan: Consolidation Document	2015	MoRUD
9	NR4	Mokran Coastal Region Development Document	2019	MoRUD
10	NR5	Framework, guidelines and Terms of Reference of preparing comprehensive urban plans: a new approach	2020	MoRUD

No.	ID	Title of the Document	Date of approval	Reference Institution
		and method		
11	NR6	Analysis of the function and position of free trade-industrial and special economic zones in the spatial development planning system	2020	MoRUD
12	NR7	Revision of the procedure of identifying dysfunctional urban areas and neighbourhoods	2020	MoRUD
13	NR8	Tehran Growth Boundary Strategic plan	2016	SCoSP
14	NR9	Cetiran Spatial Plan	1976	PBO
15	NR10	National Strategic Document for Tourism Development	2020	Cabinet of Ministers
16	NR11	National Document on Organizing and Empowering Informal Settlements	2004	Cabinet of Ministers
17	NR12	National Strategic Document for Regeneration, Rehabilitation, Renovation, and Empowerment of Deteriorated and Dysfunctional Urban Areas	2014	Cabinet of Ministers
18	NR13	National Strategic Document for Crisis Management	2020	SCoCM
19	NR15	Tehran Strategic-Structural Development Plan	2008	MoRUD
20	NR16	Iran National Physical Plan	1996	MoRUD
21	NR17	Urban Street Design Guidelines	2020	MoRUD
22	NR18	National Guideline on Public Transport-Based Development	2018	MoRUD
23	NR19	Evaluation of the Realization of National Physical Plan	2016	MoRUD
24	NR20	Tehran Metropolitan Area and Neighbouring Towns Plan	2004	MoRUD
25	NR21	Draft of Policy Document of Organizing and Decentralization of Tehran	2020	MoRUD
26	IR1	New Urban Agenda	2017	UN-Habitat
27	IC1	How to Formulate NUP: A Practical Guide	2019	UN-Habitat
28	IR2	National Urban Policy: A Guiding Framework	2015	UN-Habitat
29	IR3	Addressing Climate Change in National Urban Policy	2016	UN-Habitat
30	IR4	The Evolution of National Urban Policies- A Global overview	2014	UN-Habitat
31	IR5	Sub-National Urban Policy: A Guide	2020	UN-Habitat
32	IR6	Global State of National Urban Policy	2018	UN-Habitat & OECD
33	IR7	Habitat III policy paper :National Urban Policies	2016	Habitat III

Table 4 Global themes and their corresponding organizing themes

Global Theme	Frequency of relevant codes in documenst
Good Governance	**423**
Enabling effective legal and regulatory frameworks	167
Enabling effective institutional frameworks	256
Financial Sustainability	**138**
Identifying sustainable sources of financing at the national level of governance	70
Identifying sustainable sources of financing at the local level of governance	6
Increasing and coordinating the private-sector investment in urban development sector	62
Social Sustainability	**242**
Promoting Iranian-Islamic identity and responding to the socio-cultural considerations of Iranian society in Iran's urban development	33
Guiding and controlling urban demographic dynamics based on a forward-thinking approach in urban development	17
Promoting social cohesion and creating networks of local communities in Iranian cities	44
Improving the people welfare and promoting equality and social justice amongst citizens	79
Providing adequate housing for all	69
Spatial Sustainability	**519**
Developing and maintaining the basic infrastructure and local services	88
Strengthening and facilitating urban regeneration projects (dysfunctional urban areas and informal settlements)	65
Developing a network of good-quality public spaces in cities	10
Responsive development of urban and peri-urban areas	48
Enabling an effective functioning framework in cities	61
Developing a sustainable transportation system	66
Planning for a balanced system of cities throughout the country	181
Economic Sustainability	**171**
Promoting international economic cooperation	27
Developing and diversifying economic value creation methods	97
Promoting land and housing market in cities	21
Development of knowledge-based economic activities	26
Environmental Sustainability and Resilience	**228**
Promoting and facilitating international cooperation to address environmental problems	8
Promoting integrated water resources management mechanisms in cities	65
Improving urban resilience and promoting sustainable urban development strategies	86
Promoting environmentally friendly development policies	69
Smart City	**23**
Promoting the use of new technologies in urban plans and projects	6
Promoting smart city strategies	17

The results of the analysis of the content of urban and territorial development plans, codes, and regulations introduce the main urban policymaking priority areas associated with:

- **Lack of future-oriented and forward-thinking approach**; despite the fact that most of

the documents have been prepared in the last ten years, some recent issues affecting Iran's urban development have not been properly addressed in the documents. An effective policy must be reflective about the past as well as being forward-looking. Climate change and its future consequences to Iran's urban areas, including exacerbation of migration flows and increasing population density in metropolitan areas, increasing the likelihood of extreme weather events and potential risk to urban areas, land subsidence, water scarcity, etc. are among the examples that emphasize the importance of future-oriented approach in urban planning and policymaking processes. Aging population is yet another issue that some Iranian cities are facing or will face in the near future. Despite the emphasis on policies to maintain the share of youth in the total population of the country, planning and designing inclusive cities that are responsive to all population age groups, including the elderly, has rarely been raised in the documents. Given that forward-thinking has been introduced as one of the main principles in the formulation of NUP (UN Habitat 2016), long-term views and projections, which can be based on the lessons learned from past policies, statistical trends, and political and cultural norms, are necessary to develop policies that meet the long-term needs of urbanization in the country.

- **Sectoral planning and lack of integration between its economic, social, environmental and spatial dimensions**; inter-sectoral and integrated view is necessary to provide a full comprehension of interlinkages and interactions among various dimensions of a complex entity like cities. UN-Habitat (2015) emphasizes the complex and cross-cutting nature of urban issues and the need for coordination between various influential forces to formulate effective policies. Informal settlements and urban poverty, urban health, housing, environmental preservation, and water resource management are among such complex topics that are associated with two or more dimensions, and require a holistic approach to be effectively and efficiently addressed in NUP.
- **Lack of coordination at different levels of policy-making, planning and implementation**; Lack of coordination between different levels of national and local policy-making and urban planning is one of the main obstacles to produce effective and implementable policies. Inconsistency between local needs and national planning frameworks have led to gaps in the proposed policies and resulted in unbalanced urban development throughout the country. UN-Habitat introduces joined-up planning as one of the key principles in the formulation of NUP, which look beyond traditional institutional boundaries in order to address the challenges and opportunities of urbanization. An efficient and effective NUP is ensured through multi-level (vertical) and cross-sectoral (horizontal) coordination and cooperation of various influential forces. Increased population absorption in metropolitan areas, widespread migration from rural to urban areas, city sprawl beyond urban growth boundaries, severe inequalities in the planning of the border regions are among the issues that require horizontal and vertical coordination to produce effective and efficient urban policies.
- **Deficiencies in presenting a full image of Iran's urban reality in documents and plans**; some themes do not frequently appear within the urban planning and policy documents but are meaningful to the current urban conditions of Iran, and despite their low frequency should be taken into consideration. For example, land management is one of the most important and influential issues on Iran's urban

development that has not been addressed properly in the documents. The realization of urban plans as well as monitoring and evaluation systems in the construction industry are other important themes that received less attention throughout the document. Regardless of their frequency of codes, they should be considered in the formulation of NUP.

The results of the studies introduce complex concepts and critical issues, in regards to the specific urban circumstances in Iran that have not been fully addressed in the documents. Although some issues have been mentioned repeatedly in the documents, effective policies and plans to tackle them has yet to be developed. As discussed earlier, four reasons, including deficiencies in forward-thinking, sectoral planning and lack of integrated approach, lack of coordination between different levels of planning and lack of attention to some urban realities could be the main reasons behind such a wide gap between Iran urban reality and effective urban policies. Accordingly, the main urban policymaking priorities that identified through analysing the national and transnational documents relevant to Iran's urban planning conditions include:

- Balanced system of cities,
- Adequate housing for all citizens,
- Reducing poverty and organizing informal settlements,
- Efficient land management,
- Climate change adaptation,
- Sustainable urban water management, and
- Improving the health of citizens.

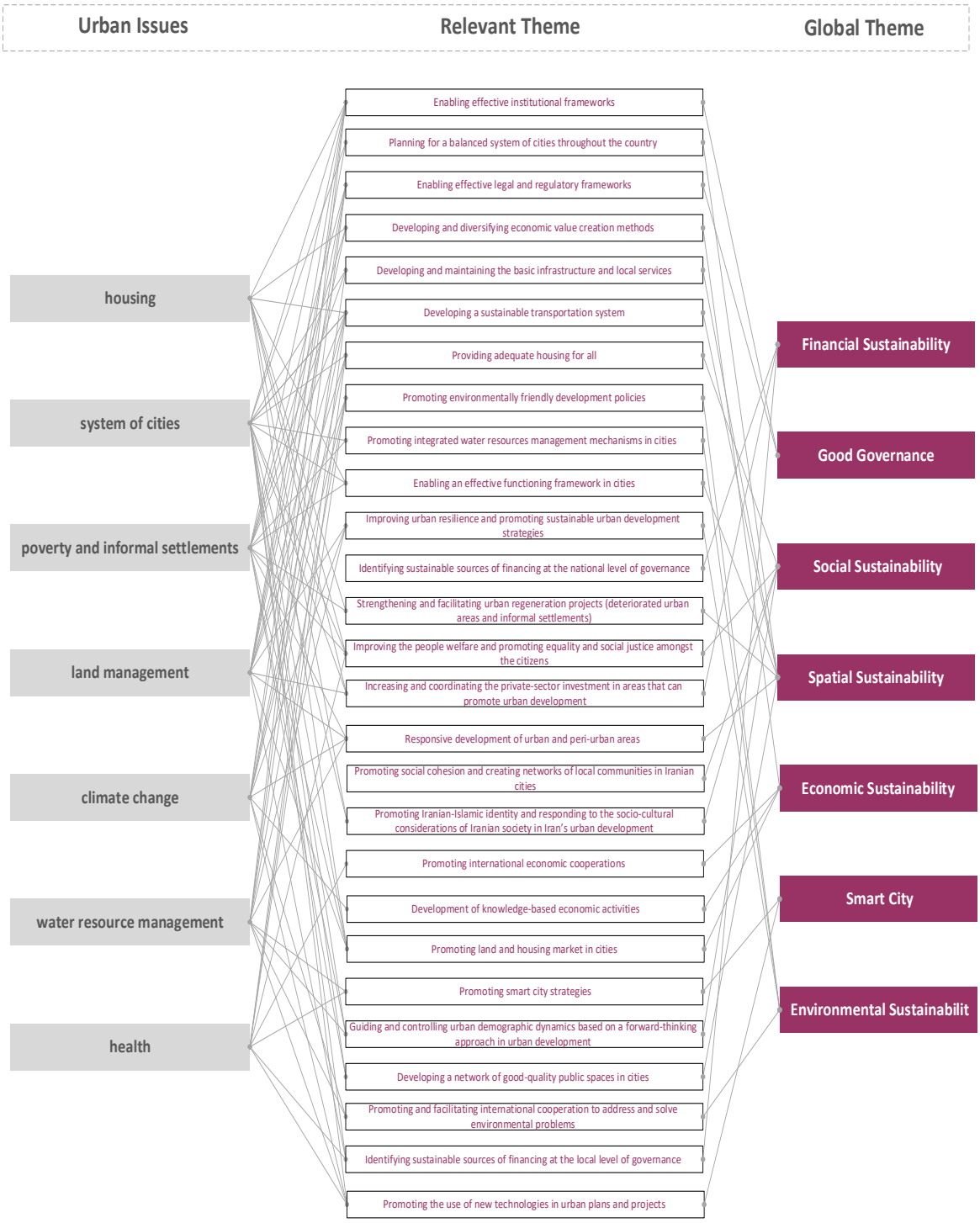

Figure 9 Connections between policymaking priorities in formulating NUP

2.2.2. Urban policymaking priorities recognized during interviews

This section introduces the urban policymaking priorities that are recognized during the expert interviews. Such priorities are derived from the needs and challenges associated with the current urban planning system in Iran. All the identified themes can be categorized in three main groups, including urban policy needs, causes and context that create such needs, and recommendations for formulating national urban policies (Figure 9).

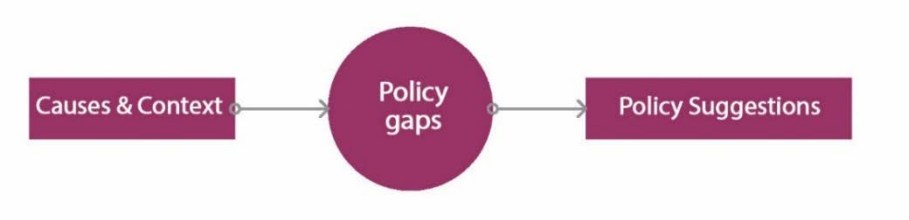

Figure 10 Classification of the content of the interviews

- **Policy gaps**

The gaps identified throughout the interviews are categorized in three different groups, including the gaps addressing the shortcomings and weaknesses (the gap between the current and the desired situation); the gaps determining a desire or preference; the gaps arising from forward-thinking approach and in response to the future demands. (Table 5)

Table 5 Policy gaps identified during interviews

Policy gaps
Gaps addressing the weaknesses and shortcomings of Iranian urban conditions
• Lack of networked or proportional hierarchical system of urban settlements • Lack of resilience thinking in urban planning and unsustainability of urban development • Lack of a comprehensive approach to municipalities' revenue sources • Inadequacies of tenure laws and regulations that put individual benefits before public interests • Large number of urban plans and programs and lack of logical connection among them • Inefficiency of urban planning system in preparing, approval and implementation of urban programs and plans • Corruption and information rent in urban management systems • Inefficiency of water management system concerning the urban development and urban planning • Lack of proper attention to climate change at the urban, regional and national levels of planning • Challenges of financing urban development plans and programs • Selection of non-specialised people for urban management positions • Lack of recognition of metropolitan scale in urban planning and governance system • Expanding Informal settlements • High concentration of population and activities in Tehran and other metropolises • Continuing the business as usual scenario in new town planning without paying attention to their role in the system of cities
Gaps determining demands or preferences of various stakeholders and target beneficiaries of urban development plans and programs
• Considering public values and demands and encouraging public participation in urban planning • Promoting the supervisory role for citizens and civil society • Providing the potentials and encouraging the spirit of demanding in the community • Strengthening the role of universities in urban planning practices and their relationship with urban management system • Citizen-centred approach in evaluating urban plans and projects • Paying attention to the quality of life in urban and rural development plans

Gaps associated with future uncertainties and essential to achieve sustainable urban development

- Applying smart city strategies in developing urban networks and activity chains
- Producing wealth from waste
- Applying new technologies in urban programs and plans
- Thinking globally and acting locally
- Defining the smart city institutional arrangements
- Promoting value creation based on expertise and technology in cities
- Smart agriculture

- **Causes and the context**

In addition to the gaps (weaknesses and problems), the roots and underlying causes of such needs are also introduced. Some of the most discussed causes are as follows:

- **Iranian cities are burdened by laws and regulations that do not match the prevailing urban reality** (e.g. land tenure, municipal law, urban management, preparation and approval of urban development plans). Despite the long history of urban legislation in Iran (e.g. the municipal law adopted in 1334), many laws are old and have not seen updates to match the contemporary urban realities. Moreover, many emerging urban concepts and issues of the last few decades have not been addressed by the law. Existing gaps and the lack of efficiency of the urban legal framework have led to serious urban problems, including corruption and information rents, inefficiency of urban management, etc.
- **Lack of transparent and sustainable financing mechanisms to secure municipal management and urban development**: Municipalities in Iran are large, costly institutions; in the absence of sustainable financial resources, municipalities have employed other alternatives such as charges on surplus density and changing urban land use as sources of municipal finance. The legal acts on municipal sustainable revenues and the tax on urban added value are among the recent legal initiatives that aim at securing sustainable municipal finance.
- **Urban poverty** is one of the most important causes of growing problems in areas of spatial and social sustainability. Extensive economic problems of the country and urban poverty have contributed to the expansion of informal settlements and dysfunctional urban areas inside and around the cities.
- **Lack of order in the urban institutional framework is another important cause that needs improvement to enable effective institutional framework through policymaking:** Uncertainty about the authority and duties of the institutions involved in urban planning and policymaking (at all stages from preparation to communication), overlaps, parallel work and conflict of interests of authoritative institutions are among the challenges that have to be taken into consideration in urban policymaking. The multiplicity of high councils for approving various urban programs and plans and lack of coordination with the implementing bodies are other relevant examples.
- **Lack of agility and adaptability of urban planning practices and lack coherent communication with the scientific and academic community**; Despite the translation of international literature and development of new theories and perspectives on urban planning in national universities, a big part of the professional body continue to use the traditional content and procedures in urban planning and policy-making. The

case of new town planning is one of the examples of continuing the old models in new town development plans. The urban regeneration programmes are other examples. The Meta-polices and the terms of reference for project services have seen several reviews and updates; however, the actions taken are not in line with the theoretical updates.

Summarizing the underlying causes and context of policy-making needs, one can conclude that most causes correspond to the financial sustainability, economic sustainability and good governance, and relates to enabling legal frameworks, institutional frameworks and financing.

Studies show that the specific needs related to the social sustainability and environmental sustainability are often rooted in financial sustainability, economic sustainability and good governance. Lack of social justice and adequate housing for all, disproportionate population distribution within the territory, increasing migrations, and the environmental impact of development programs are examples of such social and environmental problems that are rooted in financial sustainability, economic sustainability and good governance.

Given the multi-dimensional and complex nature of spatial sustainability themes, one can consider the shortcomings in this category as consequences of shortcomings of the other global themes. One can find the roots of urban problems identified under spatial sustainability theme, including Informal settlements, lack of realization of networked system of cities, lack of cross-sectoral approach in urban management and planning, failure of new town development plans, and so forth in good governance, financial sustainability, economic sustainability, social sustainability and environmental sustainability.

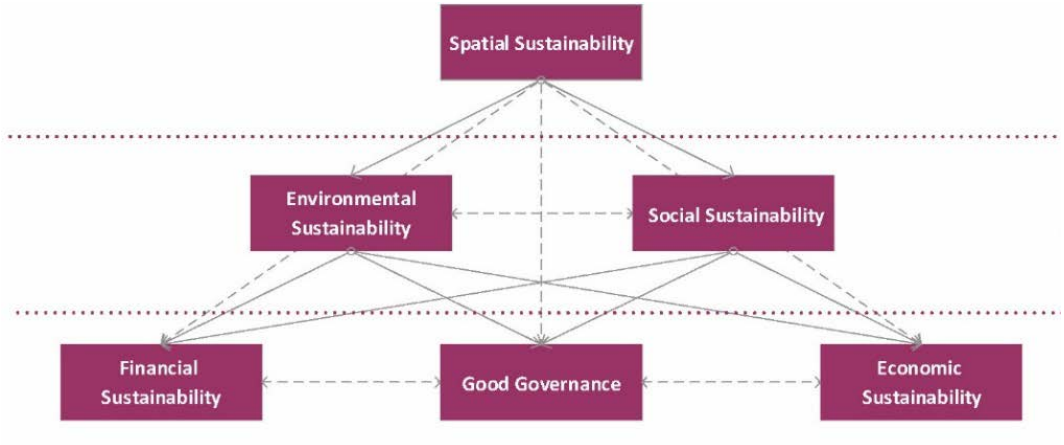

Figure 11 Classification of causes of weaknesses and policy needs in relation to the global themes

- **Policy suggestions**

The analysis of the content of interviews not only presented gaps and shortcoming and their causes, but also provides some suggestions for formulation of NUP. According to the interviews, these suggestions span around two main axes, including the procedure of policymaking and the content of policies. The most important topics raised in this category are presented in Table 6.

Table 6 Policy suggestions identified during interviews

Policy suggestions
Suggestions associated with policymaking procedure in Iranian urban context
• Considering the contextual and place-specific components of urban policymaking • Paying attention to functionality and avoiding formalism in urban policymaking • Policy evaluation through during-implementation and citizen-oriented approach • Emphasizing the need for decentralization in urban policymaking • Managing the conflict of interests among various urban policy actors • providing a precise definition and explanation of NUP for urban professionals and managers • Defining the framework and limits of NUP
Suggestions associated with the content of national urban policies
• Promoting integrated urban governance • Monitoring the urban and regional planning system (from preparation to the implementation) • Promoting institutional cohesion in formulating and implementing urban policies • Creating balanced urban networks • Managing the urban-carrying capacities and controlling the internal migrations • Recognition of metropolitan scale in urban planning and management system • Promoting Integrated environmental management • Reconsidering land management, especially in peri-urban areas • Defining the hierarchy of urban settlements • Development of new towns based on a new order • Providing sustainable revenue resources for municipalities • Promoting smart city strategies

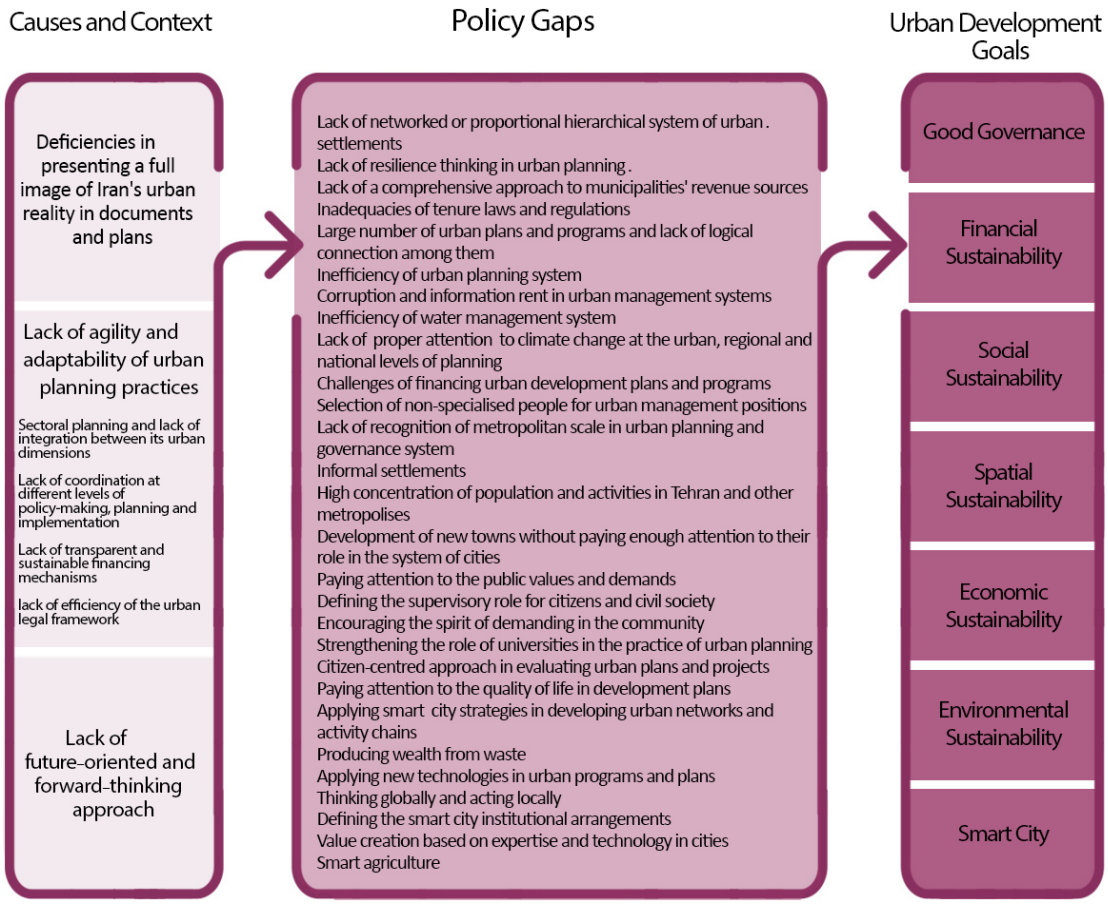

Figure 12 Policy gaps and their corresponding causes and context in connection with the urban development goals

2.2.3. Main thematic areas in developing I.R. Iran NUP and their prioritization

The results of the urban diagnosis, analysis of the urban plans, laws and regulations, and the interviews with experts introduces thirteen themes as the main policymaking themes in formulating Iran NUP. The themes are as follows:

- System of cities in the country and planning for a balanced network of cities
- Promoting integrated approach in urban management
- Reforming the hierarchical system of urban programs and plans
- Updating the laws and regulation of land management and land tenure
- Identifying the sustainable revenue sources for municipalities
- Defining the metropolitan scale in the urban governance system of Iran
- Defining the role and function of new towns in the system of Iranian cities
- Providing adequate housing for all citizens
- Reducing urban poverty and regional inequalities and organizing the informal settlements
- Preparing climate change adaptation plans
- Promoting sustainable water resource management based on the long-term planning approach and in accordance with the population and activity centres
- Improving the health of all citizens
- Promoting public participation in urban development programmes and plans.

In order to prioritize these thirteen factors, the quantitative content analysis method based on the abundance of frequent themes in the qualitative analysis phase is used. The result of prioritizing is reflected in Table 7.

Table 7 Weight and ranking of factors (in order of priority)

Rank	Factors	Abundance of basic themes	Abundance of basic codes
1	Creating institutional cohesion and integrated urban management	24	100
2	Reforming the hierarchical system of urban programs and plans	21	83
3	Citizen participation in urban policy making	11	60
4	Adaptation to climate change	16	51
5	Suitable housing for everyone	20	43
6	Sustainable balanced national urban system	17	42
7	Urban land management	5	31
8	Financial Sustainability of Local Governments (municipalities)	8	29
9	Organizing and empowering informal settlements	10	24
10	Lack of suburban, metropolitan and regional governance system	6	24
11	Sustainable management of water resources based on long-term planning	6	19
12	Defining the role and function for the new towns of the country	3	8
13	Promoting the health of citizens to achieve the healthy cities	2	5

Among the priority areas that were identified through data analysis, some areas and, consequently, their respective policies are strongly related to the spatial and human settlements planning system of the country. These include areas of reforming the hierarchical system of urban programmes and plans, suitable housing for everyone, a sustainable, balanced national urban system, urban land management, lack of suburban, metropolitan, and regional governance systems, and defining the role and function of the new towns of the country. However, NUPP goes beyond merely focusing on the spatial aspects of urbanization and embraces governance, social, economic, financial, and environmental aspects as well (see section 1.4.1). In this regard, the thirteen priority areas to formulate I.R. Iran presents a mix that responds to various urban challenges of the country. One has to consider that in the policy formulation process, all the priority areas are looked at from an urban planning lens to facilitate their implementation by relevant stakeholders and bodies and ensure their effectiveness in the urban development of the country.

3. National Urban Policy Goals, Objectives and Policies

3.1. Goals and *Objectives*

This chapter presents the NUP goals, objectives, and policies in developed priority areas in Iran. According to "How to formulate the National Urban Policy", the NUP issues can be classified into six building blocks (UN-Habitat, 2019). In this context, each recognized priority area in I.R. Iran are interlinked with these building blocks. The following figure shows the relationship between NUP issues and priority areas in I.R. Iran.

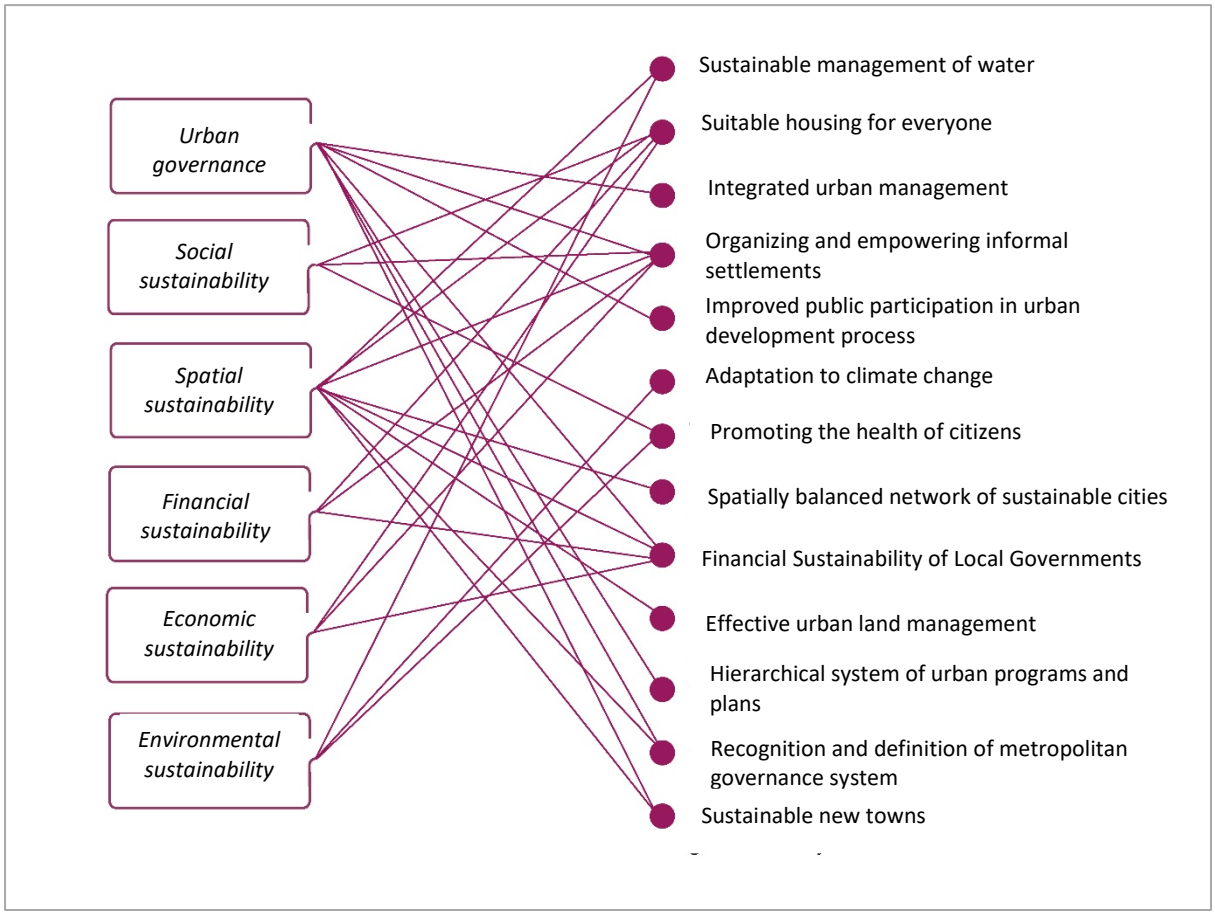

Figure 13 NUP building blocks and their connection to policymaking priorities in I.R. Iran

The NUP goals could be presented based on the priorities Iran driven from "analysis of national and transnational documents, regulations and laws" and "Content of Interviews with Urban Planning and Policy Experts". Table 8 shows NUP goals and their connection to the developed objectives. It is worthy of mentioning that the smart city consideration has been added into the policy tables in order to make a bridge between the results of the smart city concept and developed policies.

Table 8 Goals and Objectives of I.R. Iran NUP

Goals		Objectives
G1	Integrated Urban Management	O11: Enabling effective legal and regulatory frameworks in urban management O12: Enabling effective institutional frameworks in various levels of urban management (community to regional levels)
G2	Modified Urban and Reginal Planning System	O21: Development of an updated reference framework for urban and regional planning process of the country O22: Improved position of urban planners in occupational, legal and regulatory aspects in the urban development system
G3	Improved public participation in urban development process	O31: Facilitating and diversifying the means of public participation O32: Enhancing the spirit of demanding within the community and mutual trust between the citizens and the local government O33: Open access to the cities' development plans and programme
G4	Adaptation to climate change	O41: Building resilient communities O42: Increased public awareness about climate change and its impact on urban life O43: Improved international cooperation to address the environmental problems
G5	Affordable and adequate Housing for all	O51: Achieving balanced housing market O52: Providing affordable housing for all O53: Promoting sustainable housing design and construction
G6	A spatially balanced network of sustainable cities across the country	O61: Multi-level balanced network of urban settlements O62: Development of a network of high-quality public spaces in cities O63: Decentralized and de-intensification of Tehran (and other metropolises)
G7	Effective land governance system	O71: Enabling legal frameworks on sustainable urban land management O72: Enabling legal frameworks on land-based financial resources Security of Tenure O73: Providing equitable access to suitable land for housing and urban development
G8	Financial sustainability of urban economy, municipalities and local governments	O81: Developing competitive, prosperous and innovative urban economy O82: Enabling effective legal and regulatory frameworks for municipalities to sustain their financial revenue sources O83: Technical readiness of municipalities to sustain their financial revenue sources
G9	Reduced urban inequalities and empowered informal settlements	O91: Reduced spatial inequality and urban poverty in different parts of the country O92: Preventing the further growth of informal settlements O93: Improved life conditions in informal settlements and dysfunctional urban areas
G10	Recognition and definition of metropolitan governance system	O101. Enabling effective legal frameworks with regard to metropolitan governance O102. Enabling efficient institutional frameworks with regard to metropolitan governance
G11	Sustainability of water resources	O111: Establishment of Integrated Urban Water Resources Management system O112: Integrating Water-Smart City strategies in urban development programmes and plans O113: Increased public awareness about sustainable water consumption
G12	Sustainable new towns	O121: Defined role of new towns in the Iranian cities' network O122: Improvement of liveability, identity and sense of community in new towns
G13	Improve the health of citizens	O131: Building healthy cities and communities O132: Building capacity through research and evaluation of health inequalities in human settlements

3.2. I.R. Iran National Urban Policies

Policy #1: Transition to a coherent and integrated urban governance system

Public Problem in Iran

Like many developing countries, an effective response to the problems and issues of cities with an active rather than passive approach is one of the main concerns of urban management in Iran. The essence of urban management is the adoption of policies and programmes, measures and a wide variety of measures to ensure the efficiency, justice and desirability of how citizens have access to housing, employment, services and urban infrastructure in a way that protects the environment.

Despite the existence of different faces of the city, have a single identity and therefore to achieve the goals of urban management strategies, policies and integrated programmes are needed that take into account this single face and are coordinated by an integrated management system. That is formed in the form of a stable and balanced relationship between government and municipalities. The concept of integrated urban management in Iran is not very old and besides the need to clarify its executive and operational aspects, it needs transparency and a more precise explanation.

Lack of coordination among various responsible governing bodies in cities is one of the main challenges of Iranian cities, in particular large cities. Although municipalities are the most relevant governing bodies in cities, the complexity of urban environments require other organizations and institutions to play roles in the overall urban governance system. Lack of coordination may result in waste of human and financial resources due to the overlap in their duties, conflicting or sometimes even contradictory decisions. The inclusion of civil society representatives and the private sector in this management structure is of utmost importance.
Also, on a scale beyond the city, apart from not anticipating the required legal and political status, the city -regions and metropolitan areas in Iran face two major procedural challenges:

- Political Fragmentation: Existence of a large number of independent organizational domains (urban management / local government domains) in a metropolitan area or urban complex that prevents integrated political decisions throughout the region: Lack of compliance of the functional domain with the organizational domain
- Functional Fragmentation: The existence of different and uncoordinated organizations (provincial and city branches of ministries and central organizations and local governments) in decision-making and providing public services in each of the governmental territories

The most important challenges of urban management in Iran can be summarized as follows:

1. Low level of political and administrative participation and scalability in all levels of management,
2. Partiality and verticality of the administrative-executive system of the country and its incompatibility with horizontal management systems with multi-sectoral and geographical performance,
3. Uncertainty of the position and identity of the urban management system in the macro-management system of the country,
4. Overcoming the restrictive and preventive functions of the system over the functions of providing services and facilities,

5. Lack of thematic survey and gap of legal defects in terms of the thematic and spatial coverage of laws and regulations
6. Overlap of the duties of the city councils with municipality and other local organizations,
7. Ambiguity of the position of the municipality in the whole urban management system, especially the decision-making subsystem,
8. Diversity and multiplicity of informal elements and high influence of urban management decision-making system from them,
9. Overlap of political and managerial urban boundaries

In such circumstances, based on the review of documents and in-depth interviews conducted in the present study, providing integrated urban management is one of the main priorities of Iran's national urban policy. The fact is that the efforts of the last three decades in Iran regarding legal and institutional reforms towards integrated management have not been successful. That is why this priority is not hidden from any of the experts and specialists.

Table 9 Details of NUP #1

Problem#3	Necessity to achieve institutional cohesion and integrated urban management
Priority	1
Evidences	U1, U2, U3, U5, U7, M1, P1, P2
Related Documents	IC1, IR4, IR5, IR6, NC5, NR1, NR3, NR5, NR7, NR8, NR13, NR15, NR21
Policy Goal	Integrated Urban Management
Policy Objectives	O11: Enabling effective legal and regulatory frameworks in urban management O12: Enabling effective institutional frameworks in various levels of urban management (community to regional levels)
NUP#1	SUB-POLICIES
Transition to a coherent and integrated urban governance system	SP101: Legal reform and deregulation to achieve coherence in urban management legal frameworks SP102: Promoting the decentralization measures by the central government SP303: Enabling neighbourhood councils to respond effectively to community concerns Sp104: Improving city council performance in accordance with the city council law SP105: Improving the effectiveness of the inter-sectoral committees SP106: Designing various models of urban management in accordance with the capacities of municipalities and the size of cities SP107: Separating political leadership from specialized management of municipalities, and avoiding non-specialist and discriminatory selection in recruitment SP108: Separation of public duties and responsibilities into national and local departments and assigning local duties to local institutions SP109: Fighting against the corruption and information rent in urban management system SP110: Promoting the mechanisms of transparency and accountability of local and regional governments SP111: Defining effective systems to monitor and evaluate the implementation of approved plans and programs
Smart City Consideration	The need to create an inter-sectoral coordination unit for Smart City development The necessity for adoption of a transparent and open data-oriented governance

Policy #2: Developing an integrated framework for the urban and regional planning system in Iran

Public Problem in Iran

With both challenges and opportunities, urbanisation is the main concern in the planning process of Iranian cities. In response to this rapid territorial and demographic transformation, the government has implemented various urban and housing policies and created several institutions to manage the urban transition and ensure sustainable urban development.

Urban planning alongside urban management in Iran is carried out in a mostly top-down but scattered manner. On the one hand the Iranian urban planning system is facing with the "planning syndrome" phenomena, referring to the performing plans and policies to achieve certain goals and objectives without trying to evaluate their progress (Andalib 2017). Overlap and parallel work and inconsistencies among various urban programmes and plans are outcomes of such phenomenon. Furthermore, there are usually several agencies involved in the preparation, approval, and implementation of the plans while some others are responsible for urban management. There are thus many instances of overlapping duties as well as those left untreated (Alaedini 2021). Despite several examples of such incoordination and failure in full implementation of urban plans, no measure appears to have been taken to avoid such major problems in the urban planning structure of Iran.

The hierarchy of planning in Iran can be categorized into four levels, namely national, regional or provincial, sub-regional or county and local levels. The urban plans are placed at the local planning level. The first level of the Iranian planning hierarchy consists of national plans which are prepared and approved by different government departments and organizations. Each of these plans has a different focus and contains various elements of development. Although the urban planning system in Iran is not guided by any specific policy, there are some plans and programs at different scales that determine general urban policies.

Given that the process of preparing urban plans and programmes is time consuming, requires professional human resources and financial support, it is necessary to modify the system of urban plans and programmes in the country to be more responsive and efficient.

Table 10 Details of NUP #2

Problem#2	Large number of urban plans and programs without logical connection among them
Priority	2
Evidences	U1, U3, P1, M1
Related Documents	NC1, NR11, NR7, NR12, NR19
Policy Goal	Modified Urban and Regional Planning System
Policy Objectives	O21: Development of an updated reference framework for urban and regional planning system in the country O22: Improved position of urban planners in occupational, legal, and regulatory aspects in the urban development system
NUP#2	SUB-POLICIES
Developing an integrated framework for the urban planning system in Iran	SUP201: Ensuring the multi-level (vertical) and cross-sectoral (horizontal) coordination and cooperation of various influential forces in urban planning and regional process. SUP202: Updating the terms of reference for project services to include the emerging urban concepts and issues. SUP203: Clarifying the authority and duties of the institutions involved in urban planning and policymaking (at all stages from preparation to communication) SUP204: Enabling effective and efficient institutional frameworks by Identifying gaps, overlaps, parallel work and conflict of interests of authoritative institutions in the current urban and regional planning system SUP205: Enhancing the agility and adaptability of urban and regional planning practitioners in the application of emerging theories and principles developed by the scientific and academic community SUP206: Strengthening collaboration and Investing in human talent and skills to ensure sustainable urban development SUP207: Creating new mechanisms and strengthening the existing mechanisms that include public participation components to facilitate more systematic cooperation and coordination between officials. SUP208: Preparation and implementation of a deconcentration plan for Tehran city-region within the framework of national measures for sustainable urban and regional development of the country
Smart City Consideration	The need for incorporating smart city development approach in Iran's planning system and procedures, such as developing and using digital twin for cities

Policy #3: Enhancing public participation at different levels of governance (from local to national)

Public Problem in Iran

The positive results of citizens joining the planning process are undeniable. In recent years, the issue of citizen participation in planning has been given much attention in most countries and efforts have been made to enable public participation in various levels of planning and decision-making all over the world including our country. But when one tries to conceive of a concept that is gradually and in harmony with the social, economic, political, and cultural structures, the success is not significant.

Beyond this ontological challenge, a series of technical and practical challenges could be listed for the question of participation in Iran. Looking at this challenge from the side of the decision-makers, the lack of socio-cultural infrastructure, the dominance of centralized processes, the absence of needed complementary authorities, and the time-consuming nature of participatory approaches, all are reasons which make them reluctant to move towards participation. Thus, this reluctance is not exclusively because of the lack of belief but the challenge of consequences (Diene et.al., 2017).

Moreover, many historical obstacles prevent public participation in Iran, Pakzad (2017) limit himself to explaining the historical obstacles preventing the realization of the following aspects:

- Participation in decision-making on city affairs,
- Participation in maintenance and preservation of cities,
- Participation in maintenance and qualitative improvement of public and urban spaces.

In relation to urban governance based on good governance, it is expected that the dimensions of citizen participation in the executive aspects of urban management policy and the urban development process will be considered. These dimensions are:

- Participation in decision-making and decision taking,
- Participation in the implementation of development projects,
- Participating in the evaluation of projects.
- Participating in the fair distribution of resources resulting from the implementation of plans and projects.

In recent decades, there have been efforts to engage the civil society representatives in decision-making processes. But mostly the position of citizen participation in Iranian cities is limiting to areas of information and consultation. While various actions have been taken in this regard such as forming city and neighbourhood councils, special attention to non-governmental organizations, but there is a certain need to build capacity and train such newcomers so they can have active and effective participation.

Table 11 Details of NUP #3

Problem#3	Low Citizen Participation in Local Planning Processes
Priority	3
Evidences	U6, U7, U8, M1, P1, P2
Related Documents	IR2, IR5, NC3, NC5, NR1, NR3, NR21
Policy Goal	Improved public participation in urban development process
Policy Objectives	O31: Facilitating and diversifying the means of public participation O32: Enhancing the spirit of demanding within the community and mutual trust between the citizens and the local government O33: Open access to the cities' development plans and programmes
NUP#3	SUB-POLICIES
Enhancing public participation at different levels of governance (from local to national)	SP301: Establishing Community Advisory Groups (CAGs) as catalysts between the public and decision makers SP302: Adoption and implementation of local action plans for participatory planning SP303: Inclusion of neighbourhood councils in the budget planning process (participatory budgeting) SP304: Update a public participation ordinance for local governments, including written guidelines for various participation options and with taking into consideration of various age, sex, ethnic groups. SP305: Supplementing traditional forms of participation with modern tools, to encourage innovation without isolating or excluding citizens engaged with traditional modes of participation. SP306: Consider adopting "Citizen's Planning Bill of Rights" to empower community members to participate early in the planning process and protect their right to shape the future of their communities SP307: Raising citizens' awareness and educating them on their rights and responsibilities in relation to the local government and the decision-making process SP308: Implementation of effective communication strategies to share information, experience and practices among local communities SP309: Establishment of an urban data sharing platform to provide open access to the urban data and city development plans and programmes.
Smart City Consideration	The necessity for effective social and institutional participation through smart and digital strategies The need for adequate recognition of the societal priorities through smart and transparent methods

Policy #4: Employing effective measures to foster climate change mitigation and adaptation

Public Problem in Iran

Among Middle Eastern countries, Iran will experience a temperature increase of 2.6 °C in mean temperatures and 35% decline in precipitation in the next decades. Moreover, with 616,741 million tons of CO2 is contributing to the greenhouse gas emissions nearly to first and exacerbating the climate change impacts in the region. The high-level contribution of Iran to GHG depends on the country's significant production of oil, gas, and rapid urbanization (Daneshvar et.al., 2019).

The climate change fact of Iran is more severe than the Middle East region. Most of the research indicate a dryer regime for the future in addition to lesser precipitation events, which is more evident in the warm season indicating the changes inconsistent with global warming/climate change. Based on recent scientific reports, the frequency of extreme precipitation will be decreased in Iran and then an increased risk of droughts in the future periods will threaten water and food security especially for people who live in the highly populated cities of Iran. The high-level contribution of Iran to GHG emissions depends on a significant production of fossil fuels and fast urbanization (Mohammadi et.al., 2019). To counter this phenomenon and its numerous consequences, there is a serious need for a national plan to increase resilience and compatibility with upcoming changes. Some evidence about low preparation of cities and metropolises regarding climate change consequences, are:

- Lack of adequate waste management infrastructure and high amount waste production,
- Exposure to natural disasters such as earthquakes, floods, landslides, etc.,
- Out of date systems and consumption of fossil fuels in industries and domestic sectors,
- Fragility of ecosystems and vulnerability of forests in particular,
- Changing land uses, overgrazing, and lack of monitoring and preventing mechanism,
- Dependence of local economies and the livelihoods of a high percentage of the population to natural resources.

The constitution of I.R. Iran and its fiftieth principle provide for the protection of the environment and prohibit activities that pollute the environment. This principle is more relevant to carbon reduction than any other principle and is the subject of this report. Article 50 of the Constitution states: "In the Islamic Republic, the protection of the environment, in which the present and future generations must have a growing social life, is considered a public duty. Turns around. Therefore, economic and other activities that are associated with environmental pollution or irreparable damage are prohibited".[1]

As the consequences of climate change, evidence of the effects of this phenomenon gradually appears on the cities and environment of Iran. This issue necessitates national action and solutions in the country.

[1] *Rc.majlis.ir/en/content/ iran_constitution*

Table 12 Details of NUP#4

Problem#4	Adverse impact of climate change on urban areas
Priority	4
Evidences	U5, U4
Related Documents	IC1, IR3, IR7, NC4, NC5, NR13
Policy Goal	Adaptation to climate change
Policy Objectives	O41: Building resilient communities O42: Public awareness about the climate change and its impact on urban life O43: International cooperation to address the environmental problems
NUP#4	**SUB-POLICIES**
Employing effective measures to foster climate change mitigation adaptation	SP401: Integrating climate change adaptation measures into city development plans SP402: Encouraging and supporting the development of local level plans and strategies to reduce greenhouse gas emission SP403: Making Environment Impact Assessment (EIA) compulsory prior to the approval and implementation of urban development plans SP404: Developing guidelines on multi-hazard assessment of public infrastructure and amenities of cities SP405: Ensuring that urban development laws and regulations, and building codes and standards are consistent with climate change adaptation strategies SP406: Implementing sustainable urban waste management plans through a multi-stakeholder partnership (government, non-government, and private actors) SP407: Promoting compact urban development and urban densification/re-utilization and preventing urban sprawl Sp408: Developing climate-responsive urban design guidelines according to the various geo-climatic conditions of Iranian cities (e.g. development of green infrastructure, expanding the porous surfaces, implementing nature-based solutions in public spaces, etc.) SP409: Identifying the local capacities to strengthen the decentralized energy production network and projecting attractive incentives to encourage use of renewable sources of energy in building design SP410: Improving sustainable mobility options by planning for pedestrian and bike routes, in particular in small and middle-sized cities SP411: Strengthening environmental diplomacy and facilitating knowledge transfer from countries that are facing similar conditions as Iran in regards with the impacts of climate change SP412: Knowledge improvement and capacity building among the citizens, in particular the children, for their ecological footprint and its impact on climate change SP413: Decentralizing national level funds and facilitating local governments to utilize technical capacities and resources for climate change adaptation and resilience building in their communities
Smart City Consideration	The possibility of reducing greenhouse gas emissions through smart and eco-friendly solutions The possibility of better responding to climate changes, and fostering liveability and sustainable lifestyle through smart initiatives and innovations

Policy #5: Revision of housing planning system for a balanced housing market that leads to affordable and adequate housing for all

Public Problem in Iran

Iran like other developing countries is grappling with several problems in their efforts to achieve goals in housing area including:

- Restricted sources for housing and service sector,
- Defective performance of markets,
- Inefficient and often outdated means and methods,
- Limited access of the low-income groups to land and housing,
- Insufficiency of land in appropriate positions and appropriate price,
- Centralized decision-making in housing sector,
- Rigid and costly legal frameworks, inefficient centralized data systems,

During the last few decades, providing housing for citizens in Iran have been faced with multiple issues; providing access to affordable housing for low-income group, access to affordable housing is the most prevalent one. Based on studies and published government documents, the main causes leading housing crisis especially in Iranian metropolises are:

- High rate rural-urban migrations,
- Population growth (especially in the 1980`s with the highest growth rate of 3.91%),
- Concentration of industries, activities, job opportunities and consequently population in Tehran and other metropolises,
- Households 'attitude to properties as a wealth asset,
- Shifting capital and labour from manufacturing and agriculture to construction and real states and rising prices (Shieh, 2016),
- Financial fragility of households due to inflation to own or rent appropriate housing,
- Lack of stability in housing market due to political, social and economic status,
- Inconsistencies between housing policies and urban plans prepared so far.

A number of policies and plans have been prepared by government for housing sector in recent years. These interventions are supportive land policy (prepared and implemented from Islamic revolution to the end of five-year development plan, 1979-1994); supportive housing policy (second and third development plan, 1995-2004) and revision and modification of previous plans and policies: supportive land and housing through long term land lone (Mehr housing) for low-income groups (2005 and on). Based on the findings of the Comprehensive Housing Plan (MHUD, p. 29), in 2006, 22.7 percent of urban households could only afford 14-35 m^2 of housing. Also, on average, 41 percent of the demand for housing between 1987 and 2002 was attributed to seeking an investment opportunity (Alaedini, 2015).

The housing policies and plans aimed at low-income and vulnerable groups have suffered from lacking comprehensiveness and inclusive targeting in social policy, high rate of inflation in Iranian economy, inequity in access to housing subsidies and its benefits; reluctance of the government to dedicate adequate resources and energy to institutional development, capacity building, connecting housing with poverty-reduction and social welfare programs, or creating the grounds for innovative solutions at the local and regional levels (Alaedini, 2021).

In such circumstances, it is natural that the imbalance in the housing market and the inequalities resulting from the lack of access to sustainable housing, the vulnerable and low-income groups will suffer more than others. The expansion of slums and informal settlements around cities and metropolises is the result of this process. However, Article 31 of the Constitution of the Islamic Republic of Iran emphasizes the realization of the right to housing. Therefore, it is natural that Iran's national urban policy prioritizes the issue of affordable housing for all.

Table 13 Details of NUP #5

Problem#5	Access to adequate housing for all
Priority	5
Evidences	U1, U2, M1
Related Documents	IC1, IR7, NC2, NC5, NR3, NR7, NR11, NR12
Policy Goal	Affordable and adequate housing for all
Policy Objectives	O51: Achieving balanced housing market O52: Providing affordable housing for all citizens O53: Promoting sustainable housing design and construction
NUP#5	SUB-POLICIES
Revision of housing planning system for a balanced housing market that leads to affordable and adequate housing for all	SP501: Discourage low-density housing construction at the periphery by adopting a development tax or impact fees that internalize the real cost of sprawl for developers SP502: Reforming the spatial planning system for the better utilization of the land and housing market and to meet the needs of middle and low-income groups SP503: Developing new methods of housing finance such as financing on the supply side (land and building fund and building pre-sale) and financing on the demand side (Primary mortgage market and secondary mortgage market) SP504: Designing fiscal incentives to foster affordable quality housing SP505: Enabling private investment in informal settlements through the potential of community finance SP506: Facilitating and promoting the private-sector investments in urban regeneration projects and preservation of historical and valuable urban fabric SP507: Strengthening national systems to identify taxable properties and assess property values. SP508: Integrating housing programmes in urban and regional development plans. SP509: Providing regulations and guidelines with regard to Iranian-Islamic architectural design SP510: Developing and promoting cities' initiatives through exchange of experiences, transfer of know-how and the implementation of joint projects. SP511: Increasing the useful life and efficiency in building industry through developing standards and regulations with regard to high-performance sustainable buildings
Smart City Consideration	The need for building smart homes to reach a higher quality of life The importance of creating an online database and intelligent systems regarding the economic, financial and legal dimensions of housing Paying attention to reducing the inequality and digital gap in accessing smart technologies and infrastructure in the urban neighbourhoods

Policy #6: Spatial planning for achieving a balanced network of sustainable cities

Public Problem in Iran

As previously mentioned, the imbalance in the urban system of Iran and also the rapid urbanization of the country on the one hand along with the management challenges have raised the importance of the policy-making and coherence in spatial policies of urban development in the country for several reasons:

- Proper use of facilities and capabilities of cities and metropolitan areas,
- Create a spatial balance in the country,
- Integrate the cultural characteristics of cities and regions in the national-regional process;

So, it is important to develop a proper network for the cities' development to apply the natural, social and economic capabilities of cities and provide a spatially balanced network among cities and human settlements.

Table 14 Details of NUP #6

Problem#6	Lack of networked or proportional hierarchical system of urban settlements
Priority	6
Evidences	U1, U3, U6, P1, P2
Related Documents	IC1, IR2, IR4, IR5, IR6, IR7, NC1, NC2, NC5, NR1, NR9, NR19, NR21
Policy Goal	A spatially balanced network of sustainable cities throughout the country
Policy Objectives	O61: Multi-level balanced network of urban settlements O62: Development of a network of high-quality public spaces in cities O63: Decentralized and de-intensification of Tehran and other metropolises
NUP#6	SUB-POLICIES
Spatial planning for achieving a balanced network of sustainable cities	SP601: Improving the cohesion of the spatial structure of the country through a polycentric network of cities SP602: Strengthening the role and functional capacities of middle-sized cities to prevent migration to large and overpopulated centres SP603: restricting the population and physical growth of mother-cities in metropolitan areas SP604: Strengthening and improving the performance of large cities as the partners of metropolises SP605: Defining the urban – carrying capacities according to the environmental conditions SP606: Enhancing the position of the Supreme Council of Urban Planning and Architecture in urban policymaking in regard to the spatial development of the country SP607: Promoting Inclusive approach in public space planning and design SP608: Improving the identity of urbans cape according to the specific conditions of each city SP609: Emphasizing the application of infill development and prevention of urban sprawl SP610: Developing land use regulations for the areas outside the urban growth boundary SP611: Promoting coordination between the development of populations and activity

	centres with public transportation system SP612: Promoting mixed land use and transfer of development rights (TDR) in urban planning and design SP613: Considering passive defence in planning population and activity centres SP614: Taking into consideration natural and man-made disasters in accommodating population and services SP615: Improving the linkages and interactions between rural-urban areas (Urban-rural linkage) SP616: Planning for linkage to the international transportation network
Smart City Consideration	The need for creating balance in the country's urban system by developing remote smart services Possibility of improving environmental quality and urban sustainability through smart developments

Policy #7: Developing an effective urban land management system

Public Problem in Iran

There is extensive research in the field of reconsidering the land policies in Iran. These studies emphasize the need to pursue land policy reform in Iran.

Regarding the issue of land tenure and property ownership, one has to consider that the right to the property includes a bundle of rights, which describes the set of legal rights associated with ownership of real property. The “bundle” is made up of five different rights: the right of possession, the right of control, the right of exclusion, the right of enjoyment and the right of disposition. On the one hand, the limits of urban development within the urban growth boundary have increased the demand for surplus-density in Iranian cities; on the other hand, the rapid urbanization of the last few decades have significantly increased the value of land and created property wealth. The question here is who has the right to such wealth and privilege. This privilege does not belong solely to the owner, but it has to be shared with the public. Public authorities should make an effort to capture significant portions of these benefits and invest it in infrastructure and services. Therefore, this policy priority focuses on updating the land tenure law and enabling legal frameworks on land-based financial resources can help local governments to achieve financial sustainability, while securing public interest and urban development.

In Iran regarding to the theoretical and experimental issues of the land management system, there are some concerns regarding the following questions:

- What are the components, elements and stakeholders of the optimal model of integrated urban land policy to achieve social, economic and environmental goals?
- How can an integrated land governance system overcome the obstacles and challenges facing the evolution of the urban land policy system in Iran?
- Which legal and institutional reforms are necessary to reform government owned land policy in Iran?

In that point, the NUP recognized the land management issue as one of the main priorities in the country.

Table 15 Details of NUP #7

Problem#7	Continuation of *Business As Usual* in new town development within the last 40 years
Priority	7
Evidences	U3, P1, P2
Related Documents	IC1, IR5, IR6, IR7, NR3, NC2
Policy Goal	Effective urban land management system
Policy Objectives	O71: Enabling legal frameworks on sustainable urban land management O72: Enabling legal frameworks on land-based financial resources Security of Tenure O73: Providing equitable access to suitable land for housing and urban development
NUP#7	SUB-POLICIES
Developing an effective urban land management system	SP701: Improving the effectiveness of land management system through enabling and updating legal and regulatory frameworks SP702: provide access to digital cadastre and land registry through the internet in Iran (Increasing transparency) SP703: Revising and updating the property rights SP704: Developing the mortgage finance SP705: Capacity building and financial provision for effective land administration SP706: Increasing civic engagement and public participation in land governance through improved access to information
Smart City Consideration	The necessity of public access to cadastre via digital and smart services

Policy #8: Improving the urban economy and ensuring sustainable revenue sources for municipalities

Public Problem in Iran

In I.R. Iran until 1983, an important part of the municipal budget was always provided and paid by the central government from public sources throughout the country and this assistance sometimes included up to 100% of the municipal budget (in the case of newly established and small cities).

However, due to the consequences of the Iran-Iraq war in 1983, in the form of an annual budget, government assistance to municipalities was cut off and the government was obliged to prepare a self-sufficiency bill for municipalities within a three-year period and submit it to parliament, which has not yet been approved and implemented. After the end of the imposed war (late 60s and 70s), along with the government's declining aid, the capacity to establish new sources of revenue was created in the law of the Islamic Consultative Assembly, especially the law on the collection of some government revenues, and to some extent to replace government resources. Many of the current local resources are considered the legal basis.

Such conditions lead municipalities to unstable revenues such as construction tolls, sales of surplus building density in excess of the approved plan and beyond the tolerable capacity of the city, construction offenses, tolls of major changes in the approved uses of upstream city plans and other tolls. In such a situation, that more than seventy-five percent of the financial

resources required by the country's municipalities comes from unsustainable sources related to the construction sector. Meanwhile, sustainable resources such as renovation taxes, business taxes, car taxes, factory tolls, oil taxes, real estate taxes and other city tolls and taxes make up less than 25 percent of the financial resources needed by municipalities. Such conditions disturb the natural balance of the city and the interests of future generations, are contrary to the principles of sustainable urban development, and from the perspective of elites and stakeholders of urban development, is one of the main areas of instability in Iranian cities. Naturally, it can be seen that it is necessary to anticipate the macro goal in this field and related policies in Iran's national urban policy.

Apart from the major obstacles to economic development at the national and local levels, the sustainable economic development of Iranian cities faces obstacles that are briefly mentioned below:

- Limiting the urban economy to urban taxation and reducing urban taxation to construction revenues,
- Inadequacy of physical, human, and social capacities of cities in accordance with the goals of economic growth,
- Lack of strategic economic development plans at the local level (urban and metropolitan areas),
- Lack of a specific legal position to play the role of municipalities in the development of the city's economy,
- Lack of specific legal duties and powers for municipalities in the field of urban economic development,
- The limited share of municipalities in taxes receivable at the local level.

Therefore, Iran's national urban policy considers the urban economy and sustainable revenue sources as one of the main policies.

Table 16 Details of NUP #8

Problem#8	Lack of a comprehensive approach to municipalities' revenue sources
Priority	8
Evidences	P1, P2, U2, U3, M1
Related Documents	IC1, IR2, IR4, IR7, NR3
Policy Goal	Financial Sustainability of urban economy, municipalities and local Governments
Policy Objectives	O81: Developing competitive, prosperous and innovative urban economy O82: Enabling effective legal and regulatory frameworks for municipalities to sustain their financial revenue sources O83: Technical readiness of municipalities to sustain their financial revenue sources
NUP#8	SUB-POLICIES
Improving the urban economy and ensuring sustainable revenue sources for municipalities	SP801: Updating the rules and regulations regarding the promotion of the role of municipalities in the planning and management of the local economy SP802: Integration of local economy planning into the urban development planning SP803: Establishment of national and regional observatories for urban economy monitoring focused on the dimensions of competitiveness, business ease and urban

	prosperity SP804: Approving the law on sustainable revenue sources for municipalities according to the specific circumstances of cities. SP805: Adaptation and modification of the revenue and expenditure coding system of municipalities in accordance with international standards SP806: Improving access to external finance including; Legal bottlenecks to borrowing at the city level, achieving creditworthiness, reducing investment risk, municipal bonds versus loans, public-private partnerships, pooled financing and financial intermediaries SP807: Enabling legal framework to improve ways in which public sector can capture land value gains and other revenues SP808: Support intermediary financial institutions such as municipal development banks and fund SP809: Support national governments to incite local governments to fully leverage their existing tax authority by associating transfers and local revenue, and increase transparency through national Government data and reporting requirements SP810: Designing local financial instruments for urban regeneration projects SP811: Establishing mechanisms for compensating for government exemptions in the form of annual budgets and other laws of the country SP812: Developing legal mechanisms for deducting areas of executive bodies by the management organization and deposit it in the account of the municipalities SP813: Developing comprehensive financial planning and policy (revenue and expenditure) in municipalities by short-term, medium-term and long-term SP814: Creating technical and legal readiness in municipalities and upgrading their credit rating in order to connect with transnational financial markets and benefit from foreign investment in the urban development sector SP815: Designing and establishing a system for calculating and paying electronically and online all municipal tolls and legal funds
Smart City Consideration	Need for increased transparency in economic decision making through smart development strategies The possibility of activating the capacities of the smart knowledge-based urban economy The necessity of facilitating businesses through smart innovations and services Supporting the development of smart platforms for cities' financial affairs

Policy #9: Preventing the expansion of informal settlements and upgrading the quality of life in vulnerable urban areas

Public Problem in Iran

The appearance and expansion of informal settlement before the 1979 Islamic Revolution was the result of excluding vulnerable and low-income groups from setting goals and planning process and their specific needs are therefore not adequately addressed. A large group of these people were migrants from rural areas (because of economic changes and rapid urbanization after rising oil revenues in the post-1953 period; were unskilled, could only find low-paying or informal-sector jobs, and did not afford standard shelter within the core metropolitan areas.

In the 1990`s after Iran Iraq war, a set of initiatives toward privatization and deregulation were taken in the housing sector, together with measures to prevent informal construction and to control rural-urban migration (Alaedini, 2015). Yet, with the population growth, the gap between housing supply and demand government policies and actions failed and cannot stop ghettoization around metropolises.

In the field of informal settlements, In Iran, we have two types of informal settlements: Inner-city and outer city. Both sited in deteriorated lands but as economic situation inner-city informal settlements have better situation than the outer-city one. In general, suburbanite is referred to a person who is settled in the cities but due to different reasons he or she has not been able to be harmonized with the social and economic system of the city and therefore they cannot use the urban services. It should be mentioned that not all the suburbanites are those immigrants from villages to cities, some of them are permanent dwellers of the cities, yet due to the economic poverty, they live in the houses which are not standard (Abedin Darkush, 1993).

Relatively good estimates are available on the size and population of the two official types of slums (informal settlements and deteriorated fabrics). Urban Development and Revitalization Organization has identified about 76,442 ha as deteriorated fabrics in August 2014. The total population of these areas was 11 million across 495 cities. It has also identified 52,443 ha as informal settlements with a population of around 6 million persons across 77 Iranian cities (UN-Habitat, 2018b).

As suggested by a number of scholars in the early 2000s, a new approach was necessary to address informal settlements and housing for the low-income groups. Despite the policy shifts, by the end of 2011, the Urban Development and Revitalization Organization had identified 710 informal settlements across 46,000 hectares of sixty cities with a population of more than five million persons and had planned to carry out upgrading feasibility studies for 250 of them (Alaedini, 2015).

Table 17 Details of NUP#9

Problem#9	Expanding informal settlements and increasing urban poverty
Priority	9
Evidences	U2, M2, P2
Related Documents	IR3, IR4, NC, NR3, NR11, NR12
Policy Goal	Reduced urban inequalities and empowered informal settlements
Policy Objectives	O91: Reduced spatial inequality and urban poverty in different parts of the country O92: Preventing the further growth of informal settlements O93: Improved life conditions in informal settlements and dysfunctional urban areas
NUP#9	SUB-POLICIES
Preventing the expansion of informal settlements and upgrading the quality of life in vulnerable urban areas	SP901: Coordination and coherence among the local and national governance to prevent the expansion of informal settlements SP902: Identifying and categorising informal settlements in various cities and proposing upgrading strategies accordingly SP903: Reducing the land acquisition cost and housing price to discourage the growth of informal land and housing market SP904: Reducing discrimination in access to subsidized land and housing SP905: Criminalization of violations of urban planning and unplanned constructions SP906: Revision of the spatial planning system for the better utilization of the land and housing market and to meet the needs of middle and low-income groups. SP907: Undertaking necessary legal reform for providing ownerships rights to dwellers of informal settlements SP908: Improving the living conditions of low-income groups through the provision of basic services and in situ development of informal settlements and dysfunctional urban areas SP909: Empowering the low-income groups through community development and encouraging their participation in decision-making SP910: Providing entrepreneurship development and service centres, women employment opportunities, and workspace for entrepreneurs, microcredit systems for inhabitants of informal settlements and dysfunctional urban areas
Smart City Consideration	The necessity of reducing the digital gap between dysfunctional and privileged urban neighbourhoods The need to empower the local economy through smart innovations in dysfunctional and informal urban settlements The need for improving liveability and quality of life through smart solutions

Policy #10: Defining the metropolitan areas concept in Iran's urban planning and governance system

Public Problem in Iran

As many countries in the world, metropolitan areas in Iran face crucial challenges of Metropolitan Region arrangements for governance (political and functional fragmentation) and also attempts that should be carried out for coping with those challenges and realizing some integration and regionalism in spatial planning and management.

Mega city-regions or Metropolitan regions- that was introduced for the first time in I.R.Iran Cabinet article in 1995- are becoming a dominant form of human settlements both in developed and developing countries. Despite of all contentious discussion on economic and demographic significance of metropolitan regions and so rationality of establishing a distinct structure for their effective management and governance, there are a few institutions and governmental structures for effective metropolitan planning and governance (Asadie, 2016). Due to various divisions and fragmentation in the institutional-managerial structures of urban and metropolitan areas, the issue of inefficiency and effectiveness of management measures has become a major problem.

Asadie (2016) shows in the condition of political fragmentation, spillover growth always leaks from central and big cities (with exclusionary planning and lack of affordable housing) to unincorporated areas without growth control and cheap land available for development, the areas have great accessibility to major service centres. After a while and due to concentration of population in unincorporated area, these centres get incorporated and established municipality and growth control power. In the new established condition, spillover growth finds these new areas not desirable for development for their relative high cost and constraint on development comparing to unincorporated outer fringe. Control of this process of sprawl which works in a cyclic manner and carrying outgrowth management will not be possible in the condition of fragmentation in which there is not any body for coordinated regional spatial planning. Accordingly, the mission of any kind of regional body must be regional growth management.

Moreover, major cities are competing globally and primarily as locations for innovative technologies and services, for international financial institutions, as well as places to live for highly qualified specialist and management personnel. Cities are thus becoming a new kind of 'global player'. At the same time, they are increasingly subject to global influences which confront them with new, complex challenges and may even limit their ability to take action. At the same time, city limits and urban boundaries are losing their significance. It is not the city itself, but the metropolitan region and its location advantages which form the basis for investments for business decision makers.

Table 18. Details of NUP #10

Problem#10	No recognition of metropolitan scale in urban planning and management system
Priority	10
Evidences	U1, U2, U3, P1, P2
Related Documents	NR5
Policy Goal	Recognition and definition of metropolitan governance system
Policy Objectives	O101. Enabling effective legal frameworks with regard to metropolitan governance O102. Enabling efficient institutional frameworks with regard to metropolitan governance
NUP#10	SUB-POLICIES
Defining the metropolitan areas concept in Iran's urban planning and governance system	SP1001. Providing legal, regulatory and/ or guideline support with regard to metropolitan governance, in particular for Tehran metropolitan region (TMR) SP1002. Defining mandates and institutional arrangements of metropolitan governance SP1003: Developing sustainable financial management strategies for metropolitan governance SP1004: Evolution of the existing legal basis for supervising and controlling the development of rural settlements by villages located within metropolitan regions without the intervention of urban management SP1005: Improving the coordination and cooperation among the local actors of metropolitan regions SP1006: Matching managerial and political divisions and resolving territorial disputes in metropolitan regions SP1007: Rearranging the functions of central government and local government in urban and suburban areas SP1008: Revival of the Tehran City Development Supervision Law and expansion of the scope of action of the Supervisory Council to the entire metropolitan area of Tehran SP1009: Preventing the existing policy on the establishment of new municipalities in metropolitan regions and simultaneously pursuing the approach of reducing the number of existing municipalities (reducing the managerial fragmentation
Smart City Consideration	The need for changing the planning and management system to facilitate the realization of smart developments at the metropolitan level

Policy #11: Transition towards Water Sensitive Urban Development through an Integrated Water Resource Management (IWRM) approach

Public Problem in Iran

There are different concerns in the field of water resources linkage and urban development. After more than 50 years of extensive infrastructure building programs, the current water pipe network is successful in meeting the primary goal of safe delivery and distribution of water and collection and management of waste- and storm water; however, it is neither sustainable to meet the water demands of the current and next generations, nor resilient enough to accommodate the future uncertainties of climatic change and the growing risk of extreme meteorological events.

Furthermore, droughts and limited rainfall in recent years, on the one hand, and the growing need for urban and industrial development for water resources, on the other, highlight the need to address the challenges of water management. Climate change is increasing the frequency, severity, and duration of droughts, which contribute to food insecurity, poverty, and inequality. Urgent action and a transformation in governance are necessary to manage modern drought risk more effectively. As water shortages and drought become increasingly common, cities will need to invest in infrastructure and find ways to recycle their supply.

In such a situation, there is almost no doubt that one of main concerns of the country is water. Indeed, 2021 was expected among the driest in the last 50 years. Of the country's 85 million people, some 28 million people live in water-stressed areas, mostly in the central and southern regions. Water scarcity is hitting all segments of society, from urban households to rural farming communities.

Iran is not alone in its situation. Of the 17 most water-stressed states in the world, 12 are in the Middle East and North Africa, which includes all the littoral states of the Persian Gulf. Over the last decade, Iranian authorities have invested much political and financial capital in dealing with the growing problem of water scarcity. This includes initiatives to increase the use of desalination and the transfer of water from the Persian Gulf to water-poor provinces in central Iran.

The desalinated water will supply heavy industries and Iran's extensive agricultural sector (the latter sector accounting for 90 percent of all water uses in Iran). Its use will also keep precious underwater resources in the ground, which could save water for local rural communities and prevent greater movement from rural to urban areas that are ill-equipped to receive the inflow of migrants. In some parts of the country, lack of water has directly resulted in clashes between communities. Iran's water issue, in other words, is a grave policy challenge on multiple levels.

In order to deal with these complex problems, water management issues should generally consider multiple decisional criteria and large numbers of possible alternatives, usually characterized by high uncertainty, complex interactions and conflicting interests of multiple stakeholders, but also of a multiplicity of compartments, such as river, land or coastal ecosystems or different economic sectors.

Table 19. Details of NUP#11

Problem#11	Unsustainability of urban water management
Priority	11
Evidences	P1, P2, U5, U6, U7
Related Documents	NC4, NC5, NR1, NR2, NR4, NR5, NR15, NR16, NR20
Policy Goal	Sustainability of water resources
Policy Objectives	O111: Establishment of Integrated Water Resources Management system O112: Integrating Water-Smart City strategies in urban development programmes and plans O113: Public awareness about sustainable water consumption
NUP#11	SUB-POLICIES
Transition towards Water Sensitive Urban Development through an Integrated Water Resource Management (IWRM) approach	SP1101: Developing green infrastructure and nature-based solutions in the cities SP1102: Developing multi-functional and connected green and blue spaces (green areas, urban parks, urban forests, water channels, streams, etc.) inside and around the cities SP1103: Directing urban and industrial projects, which require high amount of water, to the coastal strips, and avoiding water transfer projects over long distances and among various internal water basins SP1104: Promoting water-sensitive and water smart techniques in planning and design of public spaces SP1105: make use of Nature-Based Solutions to manage storm water and surface runoff and to improve the liveability of urban areas SP1106: Integrating Blue-Green infrastructure in urban water management systems of Iranian cities SP1107: Reducing direct water consumption through raising citizens' awareness about their consumption habits SP1108: Developing design regulations and guidelines on promoting the construction of water-efficient buildings, including harvesting and reusing rainwater and reusing greywater use for non-potable purposes
Smart City Consideration	The need for establishing intelligent and integrated water monitoring and management systems The need to apply smart technologies to supply and manage urban water resources and infrastructures

Policy #12: Rethinking the role of new towns as economic eco-smart cities

Public Problem in Iran

In the 1980s, Iran faced "rapid population growth, population migration to urban areas and the expansion of existing cities, especially large cities, intensifying the need for housing and disorder in the settlement system and the spatial organization of human settlements in the country. Therefore, along with the strategies of "using the internal capacities of cities" and "connected development of cities", "separate urban development in the form of creating new towns " as one of the strategies of urban development in Iran, was put on the agenda.

The study by Alaedini and Yeganeh (2021), such initiatives offered less expensive means to homeownership on a large scale, with the more successful new-town cases acting as dormitory communities next to large cities. Yet, the new towns and their housing projects exhibit various infrastructure and service shortcomings as well as a failure to link to regional or national plans concerned with territorial balance, industrial development, and employment. More importantly, as the main source of finance in the new towns is opaque land sales, it has given impetus to property speculation and corruption. Despite such major issues, the current policy is to continue both initiatives.

Basirat, 2017 and New Towns Development Company, 2017 show that the main obstacles and challenges of the Iranian new town policy in the first-generation experience that delayed these towns to fulfill their goals or even deviate from the achievement of planned environmental quality are as follows:

1. Changing conditions and the decrease in population growth rate of the country and urban areas compared to the 80s and 90s,
2. Dependence on the funds from land sales to the development of the city,
3. Failure to cooperate with service providers and provide timely services from responsible organizations and bodies in the creation of superstructures and infrastructures,
4. Failure to implement infrastructure and industrial policies and service plans of other sectors,
5. Lack of using modern financing methods and foreign investment experiences,
6. Legal and administrative conflicts and some legal vacuum in the development of new towns,
7. Restrictions on the new towns construction finance during the recession era,
8. The formation of informal settlements near new towns,
9. The instability of urban planning policies and the continuous changes in housing and urbanization approaches,
10. The physical expansion of existing cities and population growth beyond the limits and thresholds set in previous plans,
11. The social and cultural damage caused by the identity challenges of residents in the first stages of settlement
12. The weak monitoring and controlling on the development of existing cities within the framework of the previous approved goals and plans.

Despite all the efforts made, it seems that the new towns of Iran are now at a historic juncture due to the limited population growth of the country in recent years. Based on global experiences and transnational commitments of the Iranian development system, it seems necessary for sustainability (economic, social, and environmental) to be at the forefront of

policy-making in Iran's new towns.

***Table 20** Details of NUP #12*

Problem#12	Continuation of *Business as usual* in new town development within the last 40 years
Priority	12
Evidences	U1, U6, P2
Related Documents	NC2, NR9
Policy Goal	Sustainable new towns
Policy Objectives	O121: Defined role of new towns in the Iranian cities' network O122: Improvement of liveability, identity and sense of community in new towns
NUP#12	SUB-POLICIES
Rethinking the role of new towns as economic eco-smart cities	SP1201: Giving the priority to organizing and upgrading the existing new towns, rather than developing a new generation of new towns SP1202: changing the "business as usual" approach in planning new towns and emphasizing on their role in the system of Iranian cities SP1203: Employing new and innovative methodologies in locating, planning and design of new towns SP1204: Planning to promote identity and culture in new towns in order to achieve an inclusive city and improve the sense of community among the inhabitants SP1205: Paying attention to liveability and environmental quality of new towns SP1206: Planning for sustainable transportation systems and promoting green mobility (walking and biking) in new towns SP1207: Paying attention to environmental safety and crisis management against natural and man-made disasters SP1208: Developing a system to monitored and evaluate the urban conditions during and after the implementation SP1209: Strengthening the economic diversification of new towns
Smart City Consideration	Using the capacity of smart city strategies in reviewing the role and status of Iran's new cities (e.g. using abandoned urban spaces and infrastructures; responding to existing problems and challenges; relying smart innovations as drivers of development, etc.)

Policy #13: Taking into consideration the health and well-being of citizens in urban development

Public Problem in Iran

Although the Islamic Republic of Iran has made significant progress in its health system over the last four decades, it seems that Iran's urban society still faces challenges such as inequality in access to health service and the need to reduce health disparities between cities and regions of the country.

As an important point, Article 29 of the Constitution of the Islamic Republic of Iran emphasizes that every Iranian has the right to enjoy the highest attainable level of health. World Health Organization (WHO) reports praise on the Iranian health system, saying: “Over the past 20 years, the Islamic Republic of Iran has made remarkable progress in the health sector with much improvement in various health indices (Mehrdad, 2009).

One of the most important issues and challenges facing public health in Iran ids that there are noticeable health inequalities within the country; for instance, the difference between life expectancy between different provinces reaches 24 years. The same is through for almost all indicators excluding the vaccine coverage and access to primary health care which are above 90% nationwide. This issue is result of imbalanced development across the country and centralized approaches. Other challenges include:

- Unsustainability of healthcare system, it must adapt to demographic changes and a growing demand for care, and make the best use of innovative health technologies,
- The ageing population of Iran; the elderly people live longer but the average age to which they enjoy good health remains the same. This places pressure on society and the economy, as well as healthcare systems,
- The incidence of certain diseases, for example Alzheimer’s and dementia, is also increasing as the population gets older,
- Reducing the incidence of preventable diseases; Cancer, heart disease, diabetes, respiratory, mental and other chronic diseases represent great suffering to citizens and come at a huge cost to society and the economy,
- New and emerging health problems; New diseases, or strains of diseases, are being identified all the time such as COVID-19.

Social policies on the national scale consider the acquisition of all categories in health care systems and housing, but the context that is less considered on the level of executive programmes resulting from these policies is the necessity of diversity and choice for different income, social, ethnic, cultural groups and geographical regions. Moreover, although overall improvements have been achieved in all health areas since the 1979 revolution, the rapid advances in medical technology and information technology, individuals’ expectations, and the young demographic of the population will undoubtedly challenge the sustainability of past improving trends.

Finally, it should also not be forgotten that the Covid-19 pandemic showed the importance of urban health to everyone. That is another justification that urban health is among the priorities of Iran's national urban policy.

Table 21 Details of NUP #13

Problem#13	The necessity to improve the health of citizens
Priority	13
Evidences	U5
Related Documents	IR2, IR4, IR5, IR6, IR7, NC5, NR1, NR3, NR4, NR15, NR17
Policy Goal	Improved health of population
Policy Objectives	O131: Building healthy cities, communities and environments O132: Building capacity through research and evaluation of health inequalities in human settlements
NUP#13	SUB-POLICIES
Taking into consideration the health and well-being of citizens in urban development	SP1301: Integrating community health programmes in urban development plans SP1302: Providing public spaces to create opportunities for gathering and socializing to reduce psychological distress and depression SP1303: Promoting healthy lifestyle by improving the pedestrian- and bike-friendly urban environments SP1304: Providing opportunities for recreational walking and physical activities in neighbourhoods, with special attention to children and elderly SP1305: Improving walking, biking, and public transportation access and connections to neighbourhood parks and playgrounds SP1306: Engaging local communities in the planning, creation, and maintenance of public spaces and parks to encourage their regular use of the green space SP1307: Increasing the green space per capita in Iranian cities in line with the international standards SP1308: Integrating the concept of play streets in urban regeneration projects to provide children play areas in vulnerable communities SP1309: Encouraging greater use of trees, landscaping, and engaging natural features in urban regeneration projects SP1310: Improving access to public sport facilities and health-hubs in cities SP1311: Building capacity among the community members, especially those with health disparities and other disadvantages, through programmes that build skills and connections such as trainings and volunteer programs SP1312: Raising public awareness about the community through strategies like clean-up days, special events, interactive games, etc. SP1313: Preventing the use of hazardous materials in building industry SP1314: Preparing the air quality action plan for metropolitan areas
Smart City Consideration	Using smart technologies in promoting green and active transportation Facilitating the use of smart health-related databases and platforms in urban decision-making and policy making The possibility of optimal management of public health and the consequences of infectious diseases through smart strategies

4.Smart City Strategy

4.1. Introduction

The expansion of urbanization and the emergence of fundamental challenges in cities is one of the countries' most important problems. Smart City development can be among the most meaningful solutions that can help solve challenges and lead to sustainable development. The I.R. Iran has entered the field of Smart City development for more than 15 years and is moving step by step. In this regard, Iran's Smart City Strategic Plan has been prepared and adjusted by conducting policy document studies and interviewing experts and managers in the field of Smart City in Iran under the National Urban Policy Programme (NUPP).

4.2. The Project Methodology

To prepare the I.R. Iran's Smart City strategic plan, within the framework of Iran's Urban National Policy methodology, the existing international and national documents and resources related to Smart City development have been reviewed. International Smart City policy documents published by organizations such as UNECE and OECD have provided a global understanding of Smart City developments. On the other hand, reviewing the documents related to Iran has given a good representation of the Smart City policymaking status in the country. In addition, conducting interviews with experts and managers experienced and specialized in the field of Iran's smart development, and holding workshops and focus groups consisting of countries' Smart City stakeholders and authorities have clarified and deepened knowledge of the I.R. Iran's Smart City development current situation. Adapting the Smart City development policy dimensions with the urban policies of the country, the I.R. Iran's Smart City strategic plan has been compiled in the end. The following diagram illustrates the preparation process of the project (Fig. 14)

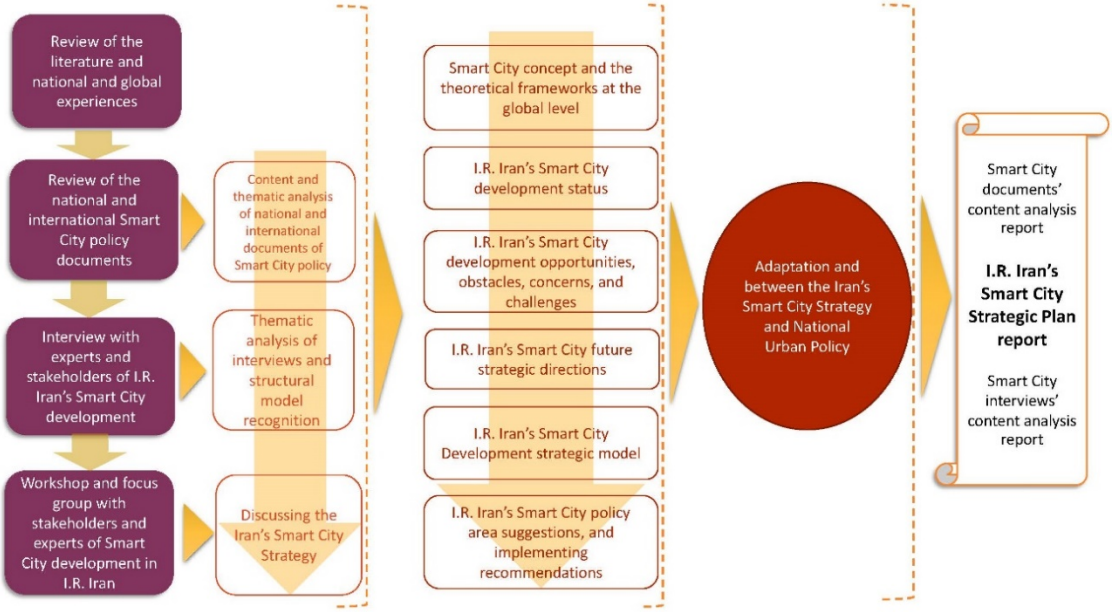

Figure 14 .The compiling process of the I.R. Iran's Smart City strategic plan

4.3. Strategic planning for the Smart City in the I.R. Iran

4.3.1. Vision statement for Smart City development in the I.R. Iran

The strategic planning for Smart City development in the I.R. Iran is expected to solve existing problems in its cities and plan for a better future and new lifestyles. The vision statement in terms of Smart City development is as follows:

"Due to the speed, scope, and rate at which technology is changing, the cities of the I.R. Iran have also not been an exception to this in terms of the changing society, economy, etc., and the country's habitat is likely to continue changing in the foreseeable future. Many countries, including the Middle East, have undergone remarkable transformations in Smart City development. Given the position of the I.R. Iran in the region, it has kept up-to-date with these evolutions, smart developments, and the use of modern technologies in various urban areas. The country's past achievements in the arts, creativity, industry, and much more and its young professional, up to date experts have paved the way for the emergence of IT and growth in smart technology. It plays an integral part in improving living conditions through Smart City development. It can help meet a range of needs that have emerged due to growth of cities, leading to crises in sectors such as housing, environment, air pollution, traffic, water scarcity, etc. The growing expanse of ICT has impacted every part of urban life and attaining an optimal future. Social welfare in cities can be achieved under the flag of such evolutions. Implementing smart technologies in cities has not only created a nationwide network it has also led to a change in communication within local communities and beyond. The progress and changes seen in ICT can also be felt in the content of urban development plans and the description of services. The facilities in various urban developments that Smart City development has provided to accelerate the goals of its projects are now being exploited in the country. Evolution in urban management has not been an exception to this, and the scope of the services it provides is aligned with modern developments. Urban services have

expanded significantly, and municipalities have turned to professional programmes, creating urban study centers, empowering research departments, training personnel, more communication with the people, etc. The new requirements have ushered in a new way of life for all urban institutions and social strata. Cities have a clear vision to solve their problems and improve conditions—the social and economic changes in a city or region impact unlimited themes. New information technologies have achieved the desired goals in urban projects. They have responded to many problems in various dimensions, and Iranian cities have enjoyed the benefits. Modern technologies and know-how have successfully achieved high satisfaction and welfare among city dwellers. The Smart City has positively impacted urban phenomena and provided individuals, families, social groups, education, and recreation with the best welfare practices. Sustained future achievements in these objectives have also been envisaged in urban planning for the country. Smart City development has provided a broad perspective for cities in the I.R. Iran to protect the environment, save energy, reduce air pollution, create urban infrastructures, and recreational, cultural, and sports facilities, protect the valuable historical fabric of cities, green spaces, trade centers, etc."

In order to achieve such a wide perspective in the field of smart city development, the goals and strategic direction mentioned in the next part must be realized first.

4.3.2. The goals and strategic directions of Smart City development in the I.R. Iran

In this part, with reference to the obtained results, the following goals and strategic direction are presented in 13 areas:

1. **The goal of participation**: Smart City development aims to expand the engagement between citizens, intersectoral cooperation in building public trust, coordination between departments, international participation, etc. The orientation of Smart City development projects in participation is to establish a connection between institutions and planners and attract public participation and the interest of other sectors. The generalization of this issue in the country will pave the way for realizing other economic, social, physical, and civil engineering goals.
2. **The goal of smart governance and smart urban management**: This includes all general and expert management areas as an important goal of Smart City development, including the city council and its affiliated organizations, plus all institutions and their subdivisions pursuing a common goal. The country's orientation of Smart City development must move towards using new technologies and expertise as this will facilitate cooperation between departments and organizations for expert management. Notably, achieving this type of smart urban management will require the central government's support for local authorities.
3. **The goal of delivering strategies, policymaking, and relearning**: This aims to achieve optimal development in various qualitative and quantitative areas based on flexibility, relearning, and education. As such, being in touch with the latest technology and expertise, using new skills and the relevant progress, professional relearning, and having the right skills and experiences are of the utmost importance. The programmes in the country must tilt towards using smart technology in the proposed areas.
4. **The goal of improving quality of life and services for citizens**: This aims to improve

the quality of life for citizens in a progressive, civilized, people-centric city based on cultural, local, and human traditions, working for justice and social welfare. The orientation of programs in the country must consider modern changes in cities to achieve social welfare and comfort, placing Smart City development on the agenda to achieve the sublime humanitarian goals in the city. Establishing a dynamic connection between urban management and current regulations in the country is essential.

5. **The goal of financial and economic development**: Financial and economic development is aligned with establishing smart economic management based on expertise and advanced, balanced models. The country's orientation in this area requires attention to Smart City development programmes and paving the way to use advanced economic models for moderation. It also entails the creation of sustainable economic methods, stable sources of income, standard economic programs and ecosystems, and economic connections with various sectors. Notably, the link between national economic programs and urban projects is reciprocal and establishing a progressive expert viewpoint in this area benefits both sides.
6. **The goal of eliminating digital inequality**: Eliminating digital inequality aims to empower cities based on smart digital justice to reduce the social divide and provide fair access to services, especially for vulnerable groups and suburban populations. The country's orientation must tilt towards balanced access to services for all social groups and different social and economic sectors. It must also endeavor to establish an adequate space and place in other digital sectors and adopt a comprehensive, inclusive approach for all habitats across cities and regions nationwide.
7. **The goal of smart and resilient urbanization**: Developments in this area aim to establish sustainability in general, crisis management, and urban safety. Urban management can benefit from smart developments to achieve resilience and meet the needs arising from natural and manmade dangers. Therefore, the country's orientation in this area must establish a defined level of knowledge and skill provided by Smart City development, leading to higher speeds in dealing with unexpected events. Furthermore, it is necessary to coordinate this structure with national and regional structures and habitats to achieve this level.
8. **The goal of optimizing energy consumption and environmental conditions with Smart City development**: This aims to create a healthy city based on a sustainable environment, manage energy resources, and standardize consumption within a smart framework. The country's orientation in this area must protect the environment by focusing on sustainability. Although there are legal regulations for environmental protection at the national level, further legislation and by-laws must generalize this sustainability to all areas in all habitats using smart methods. Furthermore, given that the country's primary source of fuel and energy are non-renewable resources, it can be expected that Smartification will lead to more significant savings in fossil fuel consumption and the development of renewable energies.
9. **The goal of eliminating the challenges of urban life through smart solutions**: This aims to establish dynamic urban management to solve the all-encompassing challenges of modern cities. The orientation of the country in this area must tilt towards providing dynamic statistics, information, roadmaps, and awareness of the latest changes in the environmental, social, and economic sectors, as well as moving forward with updated technology.
10. **The goal of urban planning, geographical factors, and smart developments**: This area

aims to expand and protect the cultural, economic, technical, managerial, and physical environments based on a noble culture and rules of life. The country's orientation in this area must facilitate smart projects through expert technical management. Providing technical and engineering equipment and extensive smart management are some positive measures. In this way, thoughtful and smart urban planning will be possible based on related environmental, social, economic, and physical protections.

11. **The goal of smart public infrastructures**: This area aims to equip cities with an array of physical, social, cultural, economic, and technical infrastructures with set standards. The country's future orientation in this area must tilt toward equipping cities with advanced, innovative public infrastructures with foresight and in line with the potential of each one. It must also exploit the benefits of smart technologies.
12. **The goal of innovative technology and R&D in Smart City development**: This part aims to achieve development projects based on knowledge and science in technology and R&D laboratories. Any measures taken for urban governance and management require research and investigation. Research centers in every institution or organization, whether in management or industry, will play a vital role in improving implementation measures. The country's orientation in this area must tilt towards further expansion and performance of research centers using smart technology.
13. **The goal of data transparency**: This part aims to create managerial, legal, participatory, qualitative, quantitative, and infrastructural transparency and support which can be verified and their transparency of performance in Smart City development assessed. The country's future orientation in this area must tilt towards better equipping data, statistical transparency, and various executive rules and measures. The future use of new technologies must also expand this transparency to achieve all the stated goals.

4.3.2. The strategic Smart City model for the I.R. Iran

From a methodological point of view, the smart city development model has been developed by relying on the interpretive structural qualitative method (ISM). Based on the results obtained by studying the documents and interviews, the causal relationship and prioritizing model factors were carried out. Figure 15 represents a proposed model for Smart City development in the I.R. Iran.

Figure 15 Proposed Smart City development model for the I.R. Iran (ATLAS.ti software output)

The proposed model shows one-way or mutual relationship between the different factors. It also has levels defining more fundamental factors. The precedent factors in the model are the most influenced:

- "Participation" and "Transparent data" factors are at the first level.
- "Urban governance and integrated smart management", "Strategy, policymaking, relearning, and flexibility", and "Technological innovation and R&D" are at the second level.
- "Business models" and "General infrastructures" are at the third level.
- "Urban planning, geography, and innovations" are at the fourth level.
- "Energy, environment, sustainability" and "Digital inequality" are at the fifth level.
- "Sustainable development and resilience" are at the sixth level.
- "Challenges of urban life and solutions" is at the seventh level.
- "Citizens' needs, quality of life, and general services" are at the lowest level of the model.

As shown in Figure 16, in the proposed model, the significant relationships between factors at every level on the factors of the lower level as well as at every level itself are considered. In this eight-level model, the most influencing factors are at the lowest level; the most influenced factors are determined by moving upward. In this model, mutual relationship, the influence between the factors, and the relationship of factors at different levels can lead to better decision-making by managers.

4.4. Smart City development policy suggestions

In this part, policy suggestions in the field of smart city development in I.R. Iran are addressed in different areas.

4.4.1. Policy suggestions for the participation

The following suggestions are made in connection with the concept of participation in the I.R. Iran:

- Building trust among citizens to engage them,
- The importance of taking a continuous and slow approach in breaking the resistance of institutions and organizations to participate in smart development,
- Efforts to communicate and partner with other countries through the exchange of information and experiences,
- Efforts to create a safe environment for the private sector to participate in expanding the Smart City,
- Efforts to create incentives in research and academic circles to expand participation in Smart City projects,
- The importance of a democratic attitude when dealing with the views and criticisms of the public,
- General awareness to attract participation by the national government, organizations, investors, and citizens for Smart City development.

4.4.2. Policy suggestions for data transparency

The following suggestions can be considered in terms of data transparency in Iran:

- Efforts to spread the culture of transparent, data-driven governance in urban institutions and organizations,
- Providing organizational information online,
- Data sharing to attract the public's trust and investors,
- Creating transparent rules to supervise data,
- Protecting data privacy,
- An integrated approach to data,
- Preventing data islands in urban institutions.
-

4.4.3. Policy suggestions in smart governance

The following suggestions are presented to improve smart governance,

- Using monolingualism, and uniform notations, and principles of writing for a similar interagency output,
- Using a data sharing unit in each organization,
- Understanding the conditions of every city and approving an executive model of integrated urban management,
- Paying attention to the pivotal role of the city council is expanding the Smart City.

The following suggestions are made in connection with the concept of smart governance in the I.R. Iran*:*

- Expanding intelligence in all entities and organizations nationwide,
- Documenting and assessing all projects and related procedures for the Smart City,
- Creating open governance and sharing information,
- Attracting the young workforce in urban management,
- Using Smart City experts in entities and organizations,
- Creating a roadmap and local model for every Smart City,
- Adopting new models of governance in line with growing Smart Cities,
- Creating transparency in the performance of entities and organizations,
- Putting in place set rules for the growth of Smart Cities,
- Clarifying the authority of every involved organization and institution,
- Designating a single custodian for every Smart City in synergy with other organizations through the national government,
- Creating a culture of smart governance in entities and organizations.

4.4.4. Policy suggestions for strategy, policymaking, relearning, and flexibility

The following suggestions are made to improve strategy, policymaking, relearning, and flexibility:

- Identifying urban potentials and assessing regional and national needs,
- Coordinating organizations to increase reciprocal productivity in services and synergy in the Smart City,
- Forming a vision to assess the potentials of the Smart City based on strategic planning, monitoring methods, and increased awareness for future strategic plans,
- Creating training systems to increase expertise in Smart City development.

The following suggestions are made in connection with the concept of strategy, policymaking, relearning, and flexibility in the I.R. Iran:

- Compiling flexible policies for Smart City development to make changes to future advancements, challenges, and opportunities,
- Policymaking for the long term to expand the Smart City,
- Amending traditional regulations in line with the new policies of the Smart City,
- Using standard global indicators in assessment and policymaking for the Smart City,
- Using existing models and experiences in other countries to build on and localize methods for national use,
- Learning from failures and mistakes and quickly adapting to new situations,
- Avoiding a linear, inflexible approach and adopting flexible models for Smart City development,
- Discerning the strategic position of every city in policymaking for smart development.

4.4.5. Policy suggestions for technological innovations and R&D

The following suggestions are made to optimize technical innovations and R&D:

- Using new technologies and localizing them based on the needs of every region,
- Using the successful experiences of other countries in Smart City development through innovations.

The following suggestions are made in connection with the concept of technological innovations and R&D in the I.R. Iran:

- Prioritizing innovations and technology,
- Not focusing solely on technology-based solutions,
- Using ICT, innovations, and creativity in different aspects of participation,
- Using ICT, innovations, and creativity in urban governance,
- Using ICT, innovations, and creativity in urban economics and businesses,
- Using ICT, innovations, and creativity in providing services to citizens,
- Using ICT, innovations, and creativity in data transparency,
- Using ICT, innovations, and creativity in facing the challenges of urbanism,
- Using ICT, innovations, and creativity in sustainable urban development,
- Using ICT, innovations, and creativity in crisis management and resilience,
- Using ICT, innovations, and creativity in energy management,
- Using ICT, innovations, and creativity in transport and traffic management,
- Using ICT, innovations, and creativity in waste and sewerage management ,
- Using ICT, innovations, and creativity in protecting green spaces and vegetation,

- Expanding innovation factories,
- Using academic environments and universities to create innovation factories,
- Creating innovation factories and living labs in cities for Smart City development.
-

4.4.6. Policy suggestions for economic models and businesses

The following suggestions are made for the development of business models:

- Creating entrepreneurial and learning institutions,
- Encouraging more investment in innovative technologies,
- Paving safe areas of investment.

In addition, the following suggestions are made in connection with business models in the I.R. Iran:

- Establishing economic and trade ties with other countries for Smart City development,
- Creating a comprehensive economic plan for businesses in the post-Covid period,
- Attracting investment by the private sector, crowdfunding, or public-private participation,
- Presenting innovative solutions to save on urban costs,
- Focusing on sustainable economic solutions for an independent economy,
- Protecting and strengthening small start-ups,
- Paying attention to suburban areas for investment and entrepreneurship in Smart City development,
- Considering specific frameworks and regulations for financial flows in Smart City development,
- Using professional staffing for economic innovations,
- Focusing on the smart economy in Smart City development.
-

4.4.7. Policy suggestions for general infrastructures

The following suggestions are made to improve public infrastructures:

- Paving the way for training citizens and creating cultural and information packages for them to implement Smart City projects,
- Paving the way for communication and systematic reviews, etc., to grow public infrastructures.

In addition, the following suggestions are made in connection with public infrastructures in the I.R. Iran, comparing it with the current experiences, knowledge, and vision of the Smart City in the international community:

- Efforts to use existing infrastructures with innovative solutions for Smart City development,
- Steps to use modern infrastructures for Smart City development,
- Efforts to create modern infrastructures by prioritizing requirements,
- Efforts to develop appropriate public infrastructures for Smart City development,
- Steps to develop appropriate public infrastructures for clean, renewable energies.

4.4.8. Policy suggestions for urban planning, geographical factors, and new developments

The following suggestions are made for better urban planning, geographical factors, and new developments:

- Using GIS mapping and BIM processes for optimal use of urban planning potentials,
- Having a fundamental understanding of changing urban activities due to Smart City development,
- Using the space of flows, or cyberspace, as a solution to compensate for shortfalls in the natural potentials of an area or case of limited land. Many of these weaknesses can be offset by anticipating urban needs in the virtual world - proposed solutions based on Smart City potentials for a rapidly changing future.

In addition, the following suggestions are made in connection with urban planning, geographical factors, and new developments in the I.R. Iran:

- Paying attention to the meaning of space and place in smart urban urbanization,
- Paying attention to the spiritual aspects of humans instead of adopting a mere technology-centric approach,
- Paying attention to historical spaces and old city fabrics, adopting policies to promote the quality of these districts with smart solutions,
- Paying attention to coworking spaces in the city,
- Paying attention to protecting and expanding urban green spaces and vegetation,
- Presenting scalable pilot projects for Smart City development.

4.4.9. Policy suggestions for the energy sector, environment, and sustainability

The following suggestions are made to improve the sustainability of energy and the environment:

- Culture-making to reduce energy consumption and change patterns of household consumption,
- Using technology to produce renewables and reduce fossil fuel consumption,
- Optimizing infrastructures for energy production,
- Optimizing energy conversion mechanisms,
- Systematic processes for energy distribution,
- Establishing a link between the energy supply chain and consumption,
- Ability to store data on energy production and consumption,
- Online monitoring of each person's energy consumption,
- Transparency of information on energy consumption,
- Sharing existing information in energy consumption units,
- Required financial resources to use IoE.

In addition, the following suggestions are made in connection with energy, the environment, and sustainability in the I.R. Iran:

- Applying technology to manage energy resources and optimize consumption, such as smart meters, smart grid, sensors, smart tech plumbing networks, etc.,
- Policymaking for the use of clean and renewable energy in cities ,
- Culture-making on optimizing energy consumption and sustainable lifestyles in urban neighborhoods,
- Using innovative strategies to encourage citizens to take a sustainable lifestyle

approach,
- Maintaining and expanding green spaces and vegetation in cities,
- Controlling air pollution with technology-based solutions,
- Controlling green spaces in cities with technology-based solutions .

4.4.10. Policy suggestions for digital equalities

The following suggestions are made in connection with digital inequalities in the I.R. Iran, comparing it with the current experiences, knowledge, and vision of the Smart City in the international community:

- Balancing online services in all the city districts,
- Prioritizing deprived areas by meeting their essential needs through online platforms,
- Identifying groups that do not have access to online services and prioritizing them in the implementation of projects,
- Strengthening the economic power of disadvantaged areas with smart projects and providing the required smart services in these areas,
- Developing smart urban infrastructures in a balanced way throughout the city,
- Creating innovative solutions to provide access to urban services for disadvantaged areas.

4.4.11. Policy suggestions for resilient, sustainable development

The following suggestions are made for sustainable, resilient development:

- Culture-making in all strata of society,
- Less use of paper in the educational and administrative systems,
- Propagating the use of public transport,
- Using hybrid cars,
- Eliminating unnecessary commuting in cities.

In addition, the following suggestions are made in connection with sustainable, resilient development in the I.R. Iran, comparing it with the current experiences, knowledge, and vision of the Smart City in the international community:

- Using technology-centric approaches to improve crisis management,
- Using technology-centric methods to innovate the use of urban resources,
- Considering sustainability in Smart City development,
- Considering the climate and vegetation of every area and adapting smart strategies to the natural context of every city,
- Securing urban areas against natural disasters, old city fabrics, and risky areas,
- Developing clean energy solutions to meet urban needs,
- Using innovative solutions in managing the environment.

4.4.12. Policy suggestions for the challenges of urban life

The following suggestions are made to improve the challenges of urban life:

- Implementing justice when expanding urban services,

- Policymaking to meet the demands of different sections of society,
- Caring for the problems of deprived parts of society and trust-making in general.

In addition, the following suggestions are made in connection with the challenges of urban life in the I.R. Iran, comparing it with the current experiences, knowledge, and vision of the Smart City in the international community:

- Preparedness to counter the challenges of urban life,
- Presenting a smart plan to deal with the aftermath of population growth in cities,
- Stressing on inclusivity in smart projects and policymaking,
- Preserving the national heritage in Smart City development nationwide,
- Reducing geographical handicaps with smart, innovative solutions,
- Prioritizing vulnerable groups in Smart City development projects,
- Prioritizing economically vulnerable groups in suburban areas.
-

4.4.13. Policy suggestions for the quality of life, meeting needs of citizens, and general services

The following suggestions are made to improve the quality of life and general services:

- Culture-making in cities by the government according to people's needs,
- Creating and supporting local groups for community participation in decision-making for urban management and quality of life,
- Creating mastermind groups in small areas to participate in activities.

In addition, the following suggestions are made in connection with the quality of life, people's needs, and general services in the I.R. Iran, comparing it with the current experiences, knowledge, and vision of the Smart City in the international community:

- Having a more profound understanding of people's needs when policymaking for the Smart City,
- Considering vulnerable groups, such as the disabled, older adults, pregnant women, children, etc., and prioritizing them in Smart City development,
- Creating awareness on Smart City development and how it can improve the quality of life
- Balancing supply and demand,
- Extending online services across the city, including vulnerable suburban areas,
- Planning for smart services in the post-pandemic period and adapting this to people's needs,
- Considering the culture, traditions, and beliefs of people in every area,
- Upgrading digital healthcare, especially during the COVID-19 pandemic,
- Not relying solely on online services and promoting innovative ideas for services to citizens,
- Balancing services and accountability to meet all the people's needs in the city.

5. Action plans

The NUP action plan is a checklist for the steps or tasks that need to be taken to achieve the goals. In general, components of an action plan include:

- A well-defined description of the goal to be achieved,
- Measures to evaluate progress,
- People who will be in charge of carrying out each task,
- Tasks/ steps that need to be carried out to reach the goal,
- Deadlines and milestones for completion of tasks.

As it was explained in the NUP methodology section, the Conceptual Framework of the Document consists of the following parts:

- Main urban problems of Iran,
- Policy Goals and Objectives,
- Policy implementation and its instruments,
- A model of achieving outputs and impacts,
- Policy Timing,
- Actors,
- Smart City Considerations,

So, based on the developed framework for Iran's National Urban Policy, the goals, objectives, and policies were formulated and explained in the third section. The developed strategies need some action plans to be implemented on the ground. That is why the National Urban Policy action plans are prepared and proposed. It will also be a way to ensure the realization of the policies. According to these explanations, each action plan includes the following information:

1. Priority or Ranks of the policy or related problem,
2. Policy timing: policy period type and the time required,
3. Policy instruments,
4. Policy actors, including corresponding actor and influent actor (s),
5. Policy evaluation criteria, which consist of policy outputs and policy impacts,
6. Geographic coverage, which can be from local to the national level,
7. Policy level that will be defined in governance (managerial or both governance and managerial Levels).

However, it is obvious that the implementation policies and actin plans require the government's interest and willingness, providing a broad interaction between different partners, capacity building, designing a financial mechanism including broad local to national investments, and the use of available international financial assistance. Tables 22 and 23 have provided suggestions for National Urban Policy and Smart City action plans. It should be mentioned that the proposed action plans in the area of smart city are defined based on the 13 policies in National Urban Policy in I.R. Iran, and in this sense, it has been incorporated into the National Urban Policies.

Table 22.Proposed action plans for NUPP

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
1. Transition to a coherent and integrated urban governance system	– Top-down and capacity building mixed approach – Training of public managers – Enactment of new rules – Informal procedures	– Ministry of Interior	– Municipalities – Supreme Administrative Council	– Number of tasks assigned by the central government to municipalities – Number of citizens' complaints from municipalities and city councils	– Level of citizens' satisfaction with the performance of municipalities – Level of transformation of actors' decisions into operational action	Mid-term	3-5years	National	Governance and Managerial Level
2. Developing an integrated framework for the urban planning system in Iran	– Top-down and capacity building mixed approach – Deregulation of actors – Training of public managers – Enactment of new rules – Informal procedures	– Ministry of Roads and Urban Development	– Ministry of Interior – Municipalities – Islamic Consultative Assembly – Private sector – Professional body	– Level of employment opportunities for urban planners in the public and private sectors – Metropolises with independent urban policy and planning authority	– Level of citizen's satisfaction – The level of compliance of urban development plans with relevant to global related agendas and conventions – Feasibility of urban plans	Long-term	5—10 years	Local to National	Governance and Managerial Level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
3. Enhancing public participation at different levels of governance (from local to national)	– Bottom-up and persuasive mixed approach – Infrastructure development (ICT, …) – Legal reform and deregulation – Information and education – inducements	– Ministry of Roads and Urban Development	– Ministry of Interior – Municipalities – City Councils	– Quantity of NGOs associated with the field of urban development	– Level of citizen participation in urban decisions – Number of citizens' complaints to judicial authorities	Long-term	5—10 years	Local to National	Governance and Managerial Level
4. Employing effective measures to foster climate change mitigation and adaptation	– Top-down and persuasive mixed approach – Legal reform and deregulation – Infrastructure development – Information and education – Taxes and surcharges – Contract with NGOs	– Ministry of Energy	– Department of Environment – Municipalities – Ministry of Roads and Urban Development – Supreme Water Council – Supreme Environmental Council	– Establishment of municipal waste recycling organizations – Rate of carbon emissions – Rate of reduction of private car usage and encouragement of alternative forms of sustainable transportation system	– Level of pollution – Energy efficiency of the economy – CO2 emissions by cities	Long-term	5—10 years	Local to National	Governance and Managerial Level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
5. Revision of housing planning system for a balanced housing market that leads to affordable and adequate housing for all	– Top-down approach – Legal reform and deregulation – Subsidies or tax incentives – Loans and financial facilities – Contract with private sector and NGOs	– Ministry of Roads and Urban Development	– Ministry of Interior – Ministry of Culture, Heritage, Handicraft, and Tourism – Supreme Council of Planning and Architecture – Municipalities	– Growth rate in housing and renting prices – Affordability ratios – Level of subsidy – Rooms per person – Numbers of homeless people, Number of built housing units	– Level of life expectancy – Housing Satisfaction	Long-term	5—10years	National	Governance level
6. Spatial planning for achieving a balanced network of sustainable cities	– Top-down and capacity building mixed approach – Deregulation of actors – Training of public managers – Enactment of new rules – Informal procedures	– Ministry of Roads and Urban Development	– Ministry of Interior – Planning and Budget Organization – Municipalities	– The number of cities with up-to-date urban plans – Urban Rank-Size index	– Environmental Performance Index (EPI) – Level of life expectancy – Quality of Life index	Long-term	5—10 years	National	Governance level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
7. Developing an effective urban land management system	– Top-down approach – Deregulation of actors – Direct services – Provision – Legal reform and deregulation – Taxes and surcharges	– Ministry of Roads and Urban Development	– National Land and Housing Organization – Land Affairs Organization of Iran – Municipalities	– The area of exclusive lands at the disposal of government institutions in public spaces – Annual land usage rate	– Level of land consumption in cities – Level of urban sprawl – The number of reported corruption and misconduct in land administration processes – Increasing the proportionality of housing rates and real settlement rates in cities	Long-term	5—10 years	National	Governance and Managerial Level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
8. Improving the urban economy and ensuring sustainable revenue sources for municipalities	– Top-down and capacity building mixed approach – Legal reform and deregulation – Enactment of new rules – Training of public managers – Contract with private sector – Loans and financial facilities	– Ministry of Interior	– Ministry of Roads and Urban Development – Planning and Budget Organization – Ministry of Economic Affairs and Finance – Municipalities	– Per capita budget and revenue of metropolitan municipalities – Own-source revenue of municipalities – Urban gross production – Foreign investment in cities	– Urban competitiveness Ranking – Prosperity Index – Urban productivity indicator – Urban poverty level	Long-term	5—10 years	Local to National	Governance and Managerial Level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
9. Preventing the expansion of informal settlements and upgrading the quality of life in vulnerable urban areas	– Top-down and capacity building mixed approach – Infrastructure development – Provision – Direct services – Legal reform and deregulation – Information and education – Loans and financial facilities – Insurances – Contract with private sector and NGOs	– Ministry of Roads and Urban Development	– Ministry of Interior – Planning and Budget Organization – Municipalities	– Number of inhabitants in informal settlements and vulnerable urban areas – The share of government subsidies for Low-income groups – The share of public budget for informal settlement	– Level of residential satisfaction in vulnerable urban areas	Long-term	5—10 years	Local to National	Governance and Managerial Level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
10. Defining the metropolitan areas concept in Iran's urban planning and governance system	– Top-down and persuasive mixed approach – Deregulation of actors – Training of public managers – Legal reform and deregulation – Enactment of new rules	– Ministry of Interior	– Ministry of Roads and Urban Development – Municipalities – Islamic Consultative Assembly	– Frequency of voluntary cooperation agreements between municipalities in metropolitan areas – Number of NGOs in urban issues	– Productivity and economic growth of metropolitan regions – Number of public private partnership (PPP) contracts	Long-term	5—10 years	National	Governance and Managerial Level
11. Transition towards Water Sensitive Urban Development through an Integrated Water Resource Management (IWRM) approach	– Top-down and capacity building mixed approach – Information and education – Legal reform and deregulation – Loans and financial facilities – Taxes and surcharges	– Ministry of Energy	– Department of Environment – Ministry of Roads and Urban Development – Supreme Council of Water	– Degree of integrated water resources management implementation (0–100) in the cities of Iran	– Quantity of Water-stressed cities – Level of water pollution in metropolitan cities	Long-term	5—10 years	National	Governance level

NUP in I.R. Iran	Policy approach/ instruments	Policy actors		Policy evaluation criteria		Policy timing		Geographic coverage	Policy level
		Corresponding Actor (relevant approving body)	Influent Actor(s)	Policy outputs	Policy impacts	policy period type	Time required		
12. Rethinking the role of new towns as economic eco-smart cities	– Top-down and capacity building mixed approach – Infrastructure development (ICT, …) – Legal reform and deregulation) – Loans and financial facilities	– Ministry of Roads and Urban Development	– Ministry of Interior – Municipalities – Iran New Towns Development Company	– Number of constructed houses in new towns – The share of new town's population in the country	– Urban gross production – Level of residential satisfaction in new towns – Quality of life in new towns	Long-term	5—10 years	National	Governance and Managerial Level
13. Taking into consideration the health and well-being of citizens in urban development	– Top-down and persuasive mixed approach – Insurances – Infrastructure development – Provision – Legal reform and deregulation – Information and education – Direct services	– Ministry of Roads and Urban Development	– Ministry of Interior – Municipalities	– The average number of days with healthy air in the country's metropolises	– Level of residential satisfaction with Health Service – Level of annual deaths due to urban issues, especially air pollution	Mid-term	3-5years	Local to National	Governance and Managerial Level

Table 23 Proposed Smart Cities' action plans integrated into the NUP policy priority areas

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
1-Establish a high-ranked Smart City committee or deputy, at the vice-presidential level, to coordinate smart urban and regional development at the national level	**Short-term**	**1-3 Years**	– Legal framework (Legal deregulation)	– Presidential organization	– Vice-presidency for science and technology	– Number of smart city representative sections in the national and local governments.	– Level of managers' satisfaction with the success of inter-sectoral collaborations.	National	Governance and Managerial Level
2-Define procedures to monitor and channel smartly oriented entrepreneurship flows toward covering and responding to the priorities and needs of different urban areas	**Short-term**	**1-3 Years**	– Legal framework – Capacity development – Strategic planning	– Ministry of Roads and Urban Development	– Plan and budget organization – Ministry of Interior – Municipalities	– Number of smart city projects proposed through public-private partnership	– Number of smart city projects implemented and managed through public-private partnership	Local to National	Governance and Managerial Level

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
3-Facilitate the active participation of the stakeholders in the stages of proposing, defining, assessing the feasibility, implementing, and evaluating the urban policies, action plans, and projects through smart services	**Short-term**	**1-3 Years**	– Legal framework (Legal reform and deregulation) – Capacity development – Institutional and Social training – Organizational strategic planning	– Ministry of Roads and Urban Development	– Ministry of Interior – Municipalities – Private sector – NGOs	– Number of participatory policies and projects performed, monitored, and inspected – Number of public actors and stakeholders involved in the participation process – Number of official participatory sessions held	– The level of citizen's satisfaction	Local to National	Governance and Managerial Level
4-Use smart monitoring and optimizing energy infrastructures and renewable energy equipment in the buildings, urban public spaces, and transportation systems	**Mid-term**	**3-5years**	– Tax and Subsidies incentives – Public facilities – Governmental investment – Private investment	– Ministry of Roads and Urban Development	– Ministry of Energy – Ministry of Interior – Municipalities	– The number of homes or vehicles equipped – The amount of energy saved per home or vehicle – Rate of reduction in carbon emissions	– Overall Rate of energy consumption – CO_2 emissions by cities – Depletion of fossil fuels	Local to National	Governance Level

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
5-Increase Iran's housing system quality by installing smart grids to monitor the flows in the housing system	**Mid-term**	**3-5 Years**	– Legal frameworks – Tax incentives – Governmental investment	– Ministry of Energy	– Ministry of Roads and Urban Development – Municipalities – Supreme Council of Water – Private sector	– Number of housing buildings or units equipped – Intensity of flows in the networks – Frequency of the problem incidence in the network	– Rate of water and energy consumption – Rate of waste recycling	National	Governance level
6-Equally, develop digital and smart infrastructures and services in small cities and remote areas through public-private partnership business models	**Mid-term**	**3-5years**	– Legal framework – Governmental investment – Private investment – Tax and Subsidies incentives	– Ministry of Roads and Urban Development	– Ministry of Information and Communications Technology – Ministry of Interior – Municipalities	– Rate of internet access – Rate of internet speed – Number of remote jobs defined – Rate of employment increased	– Rate of immigration – Overall rate of unemployment – Level of income	Local to National	Governance level
7-Develop an intelligent geographic information system (GIS) to comprehensively integrate registration of urban land information in various dimensions throughout the country	**Short-term**	**1-3 Years**	– Legal framework (Legal reform and deregulation	– Ministry of Roads and Urban Development	– National Land and Housing Organization – Land Affairs Organization of Iran – Municipalities	– Consumer satisfaction from land administration processes	– The number of reported corruption and misconduct in land administration processes – Increasing the proportionality of housing rates and real housing rates in cities	National	Governance and Managerial Level

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
8-Developing public-private partnership to finance urban projects, especially at the neighborhood level, relies on smart solutions within the closed-loop economy strategy	**Mid-term**	**3-5years**	– Legal framework – Tax and Subsidies incentives – Governmental investment – Private investment	– Ministry of Roads and Urban Development	– Ministry of Interior – Ministry of Information and Communications Technology – Municipalities – Department of Finance – Private sector	– Per capita budgets and revenue gain from private sector – Own-source revenue of municipalities	– The amount of investment in green and smart infrastructure	Local to National	National and local governance
9-Equip deprived urban areas and informal settlements where economically vulnerable people live with smart infrastructures (e.g., high-speed internet networks, shared work, innovation, and creativity centers, renewable energy utilities)	**Mid-term**	**3-5years**	– Legal frameworks – Tax and Subsidies incentives – Public facilities – Governmental investment	– Ministry of Roads and Urban Development	– Ministry of Interior – Ministry of Energy – Ministry of Information and Communications – Municipalities and local councils – Private sector	– Number of homes equipped – Rate of internet access – Rate of internet speed	– Quantity and rate of energy saved – Number of digital businesses developed – Rate of employment increased at the local level – Monthly/annual household income and expenses	Local to National	Governance and Managerial Level

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
10-Establish integrated and comprehensive laws and procedures to monitor and use real sense and big data in decision-making at the national and local levels	**Short-term**	**1-3 Years**	– Legal framework – Capacity development – Strategic planning	– Ministry of Roads and Urban Development	– Ministry of Interior – Plan and budget organization – Municipalities	– Number of smart city projects proposed through public-private partnership	– Number of smart city projects implemented and managed through public-private partnership	Local to National	Governance and Managerial Level
11-Provide smart urban water infrastructure and facilities to simulate and monitor the network	**Mid-term**	**3-5 Years**	– Legal frameworks – Governmental investment – Tax incentives	– Ministry of Energy	– Ministry of Roads and Urban Development – Supreme Council of Water – Private sector	– Rate, intensity, and frequency of the problem incidence in the network	– Level of urban water consumption	National	Governance level
12-Use incentives and facilities to encourage the development of private and public eco-friendly innovation labs and creative and knowledge-based centers in new towns	**Short-term**	**1-3 Years**	– Legal framework – Tax and Subsidies incentives – Governmental investment – Private investment	– Ministry of Roads and Urban Development	– Ministry of Interior – Ministry of Information and Communications Technology – Municipalities – Private sector	– Number of innovation centers established in new towns	– Number of job opportunity increased – Per capita income increased	Local to National	Local Governance

Recommended Smart City action plans for I.R. Iran	Policy timing		Policy instruments	Policy actors		Policy evaluation criteria		Geographic coverage	Policy level
	policy period	Time required		Corresponding Actor	Influent Actor(s)	Policy outputs	Policy impacts		
13-Create integrated resilient public health and medical services through smart decision support systems	**Short-term**	**1-3 Years**	– Legal framework – Capacity development – Taxes and duties – Planning frameworks	– Ministry of Health and Medical Education (MOHME)	– Ministry of Interior – Ministry of Roads and Urban Development – Municipalities	– The number of health care centers monitored	– The level of citizen's satisfaction	Local to National	Governance and Managerial Level

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