

Budapest university of technology and economics
SCIENTIFIC STUDENT CONFERENCE (TDK)
SCALE TRANSFORMATIONS

**Vulnerability in the social dimension of spatial development in a
time of crisis**

Case Study: Rural Damascus- Syrian Arab Republic.

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Research Summary

The social dimension is one of the dimensions of sustainable development. It focuses on the human being, the essence of development and its ultimate goal, and the pursuit of quality of life is the goal of achieving comprehensive economic and social development.

The research begins with the concept of quality of life within urban communities, and provides a theoretical review of the indicators of quality of life, in addition to the cities prosperity indicator and the of human development indicator.

The research deals with the social and human dimensions of quality of life and its relation to the prosperity of cities and their role in achieving sustainable development and comprehensive spatial development, from the level of the individual to the level of cities and regions.

According to the fact that spatial dimension is a reflection of all other aspects geographically had to address the index of the prosperity of cities as it directly reflects the level of development on the urban environment built spatially and seeks to promote the prosperity of cities, thus improving the quality of life and move to the concept of quality.

The study will deal with the concept of vulnerability in all its types with the reference to its components (exposure, sensitivity and ability to adapt), and the emphasis on the concept of social vulnerability (social risks, consequences on the individual and places levels, as well as identifying the measurement indicators which according to it will determine the level of vulnerability of the study area, and the reality of spatial development according to it.

The study will examine the social situation in **Syrian arab republic (then detailed study for the rural Damascus as a case study)** and analyzing the vulnerability aspects in it in two periods (pre and during Syrian crisis and war), its problems, reality, **the state of vulnerability which occurs due to exposure to social risks** and the lack of adaptive, and its spatial reflection on the area, with emphasizing aspects of social vulnerability (**health sector as an example**), low services that have happened and urgent solutions, then the research will develop a **proposal and a strategy for the future development in order to achieve comprehensive development on all the scales.**

keywords:

Indicators, spatial and regional development, the human development indicator (**HDI**), the quality of life index (**QOL**), the index of the prosperity of cities (**CPI**), Social vulnerability, Rural Damascus.

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a) Problem of the research:

- The social dimension is one of the main dimensions that affect the development and prosperity of cities, which may be reduced as a result of social risks or situations of war and conflict.
- The weaknesses in development of regions and cities are related to the multiple areas of vulnerability and risks that result from the absence of social, economic and institutional justice.
- The omission of balanced spatial development by focusing on specific places in development and neglect the others, so the features of each region must be identified and appropriate mechanisms should be put for achieving development.
- The state of war and conflict in Syria has led to the decline of all social and economic indicators, which in turn affects the comprehensive development and led to the destruction of decades of previous development, the search seeks to find strategies to be followed in the social aspect to promote development and increase the risk prevention.

b) Research importance & Objectives:

- Define the **concept of development, sustainable development, then spatial development**, its dimensions and goals, then to find a definition of comprehensive spatial development.
- To address the concept of vulnerability, its sources and types that affect the regions and cities, especially social vulnerability.
- Emphasize the role and importance of the social aspect in achieving development from the level of the country and cities to the individuals scale.
- **Reviewing the level of development, vulnerability and social risks in Syria in the pre and crisis periods**, analyzing the development reality, weaknesses and challenges, in addition to adopted solutions during the crisis, in order to suggest a comprehensive spatial development strategy based on its characteristics and its potential for achieving appropriate spatial development.

c) Research Structure:

The research consists of a practical part related to terms, definitions and indicators, and a practical part related to the study situation of the Syrian Arab public. Figure (1) shows the structure of the research.

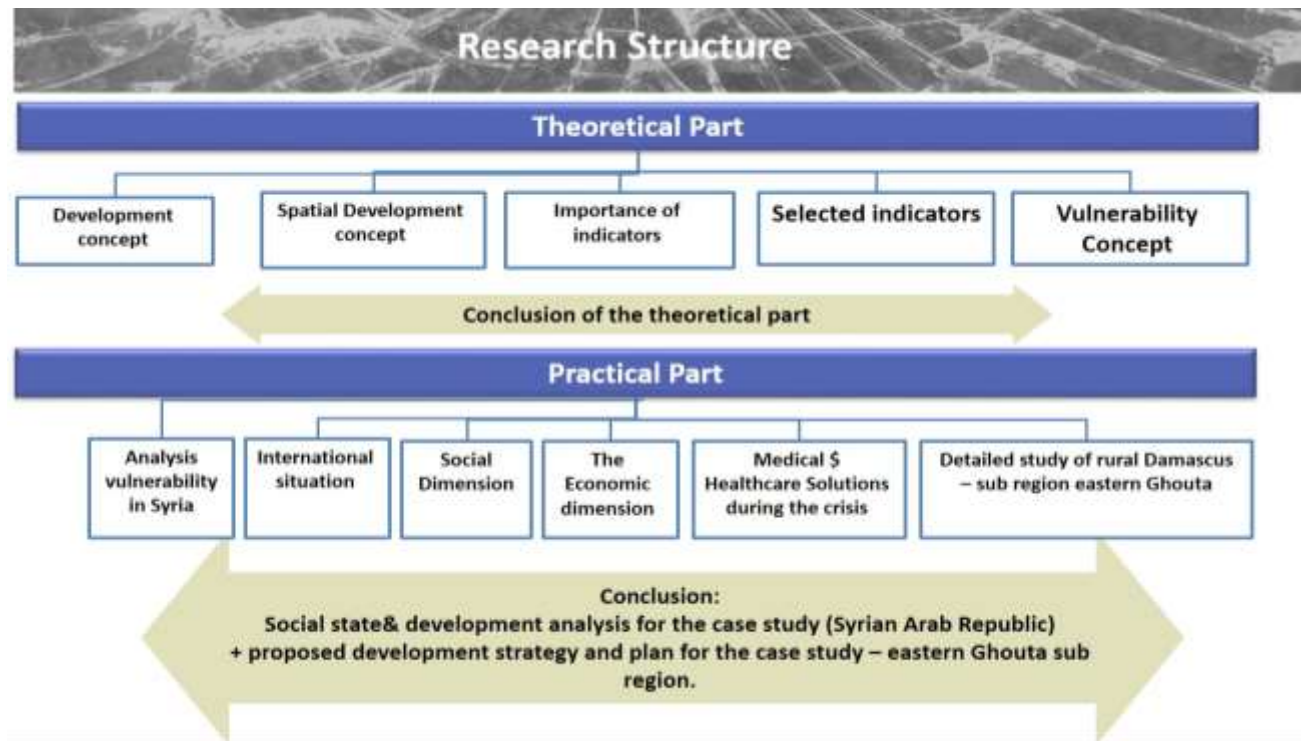


Figure 1 Research Structure, By researcher

1- The concept of regional spatial development and its dimensions:

This part aims to develop a comprehensive definition of spatial development and its dimensions,

In order to achieve this, the study will review the concepts of development, sustainable development, and regional spatial development and linking them to reach the comprehensive concept of development.

1-1 Development Concept:

One of the most important global concepts in the 20th century, started with Economic growth until it gain its Comprehensive development meaning.¹

Term definition

The intentional change process of certain situations from stage to better stage.²

Or: A set of radical changes in a given society, to provide the community the capacity for continuous self-development to ensure the increasing improvement in the quality of life of all its members.³

¹ الحبيطري نبيلة- بلهادف رحمة، الاستثمار في المنشآت المستدامة توجه استراتيجي نحو دعم التنمية المكانية، الملتقى الوطني الأول آفاق التنمية الإقليمية والمكانية في الجزائر، جامعة مستغانم، 2014.

² الدين عيبر محمد جمال، نحو منهجية عمل لتنمية الأقاليم الساحلية المصرية من خلال التعدد الاقتصادي لمدينتها الساحلية، جامعة القاهرة، 2012.

Development suffers from several problems at the economic, social and environmental levels. ⁴

And the **Development objectives** are Balance their environmental, social and economic components and overcome their problems (comprehensive development).

Figure (2) shows the evolution of the concept of development.



Figure 2 Evolution of the concept of development, By researcher

1-2 Regional Development Concept:

Regional concept means the geographical balance, the justice of spatial distribution, It is to divide the state into a strong and successful regions, the spatial division is related to the purposes of economic and social development.

On the Region level: Comprehensive development covering economic, social, cultural and urban aspects within a specific region.

On the State level: A radical change at all levels, accelerating economic growth, alleviating regional disparities, combating poverty and developing social structures and administrative institutions, giving the development process a human dimension.

it starts with **Integrated regional development then the balanced one to achieve Balanced & Sustainable regional development** In our search.

1-3 Spatial Development Concept:

It means: "These changes in the situation of a region in a deliberate way to improve the living conditions of its population, and reduce human spatial disparities, through the optimal use of its resources, and improve the efficiency of human potential in all its details. ⁵

Developed countries such as Western Europe, the United States of America and Japan have pioneered the adoption of many spatial development policies based on balancing the social and economic aspects according to the potential of any region. ⁶

³عارف نصر، مفهوم التنمية، كلية العلوم السياسية، جامعة القاهرة، مجلة كلية العلوم السياسية، 2010.

⁴ <http://www.mdci.gov.tn/fileadmin/Ressource/nabeul.pdf>

⁵عبد العال أحمد محمد، المدن الجديدة والتنمية الإقليمية في مصر، المجلة العلمية لكلية الآداب - جامعة المنيا، 1992ص: 4.

⁶وزارة التخطيط (حكومة إقليم كردستان)، محور التنمية المكانية والاستدامة البيئية، ديسمبر 2012، ص 2-5..

Spatial comparative advantage And the possibilities of development: The determination of the role of any region depends on the available possibilities and comparative advantages in that place, its specificities, on which development policies are proposed.

1-4 The Concept of Spatial Regional Development (Comprehensive Development):

By reviewing all concepts related to development and its spatial dimension, research has been able to reach a **definition of comprehensive spatial development** which means:

making structural changes that seek to solve regional problems and remove obstacles that prevent spatial development, And to achieve the developmental balance between the regions spatially based on their natural and human components and at various levels (social, economic, urban and environmental), and to demonstrate their potential and use it to achieve a balance in line with the national economy.

In order to identify the comprehensive development dimensions, indicators are used as an important element in decision support, policy formulation and monitoring of the development process.

so It is necessary to address the most important global monitoring indicators of development used for this purpose.

2- Spatial development indicators:

Many international organizations have proposed several tools and indicators to measure the level of development in various regions of the world, including:

2-1 World Development Indicators 2018:

World Development Indicators (WDI) is the World Bank's premier compilation of cross-country comparable data on development.

The World Development Indicators is a compilation of relevant, high-quality, and internationally comparable statistics about global development and the fight against poverty. The database contains 1,600 time series indicators for 217 economies and more than 40 country groups, with data for many indicators going back more than 50 years.

These indicators are organized in many themes, figure (3):



Figure 3 World Development Indicators

Source: <http://datatopics.worldbank.org/world-development-indicators/>

From the table on global development indicators, we note that the number of indicators for each program varies according to the objectives of this program and the level of its implementation.

But the dimensions are the same, and interdependent between them, while the human development indicators focused on human and livelihood, the indicators of sustainable development focused on the environmental dimension .. and so on . figure (4) shows the overlap between key dimensions and indicators in all global measurement programs.

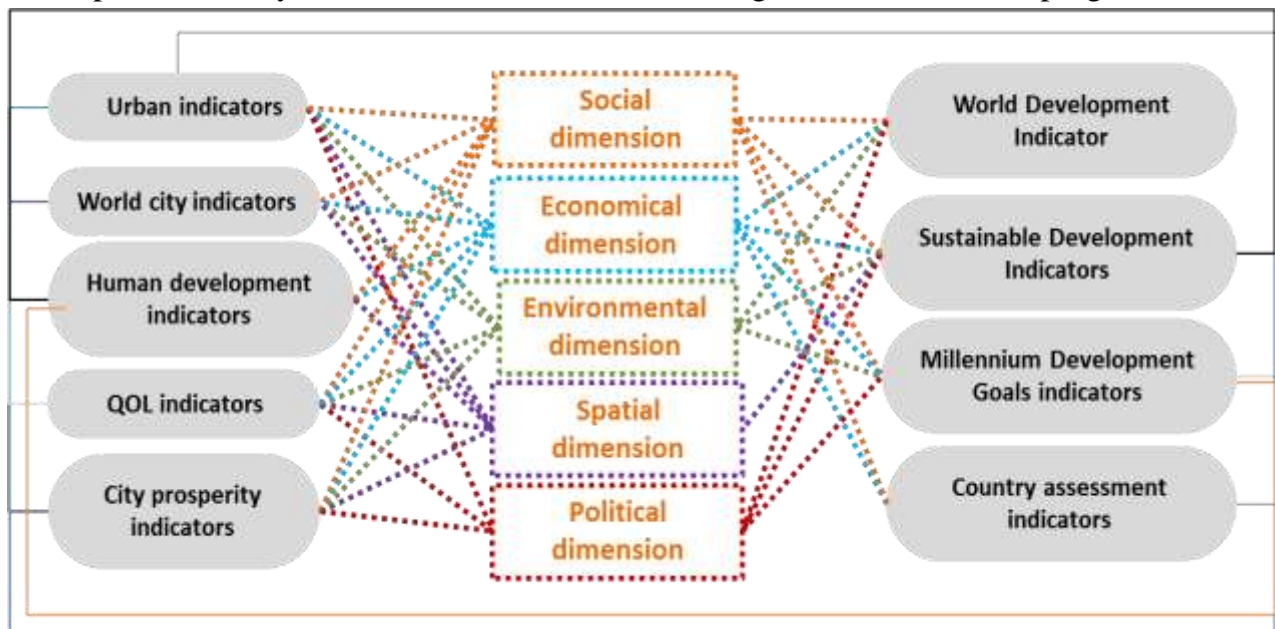


Figure 4 the overlap between key dimensions and indicators in all global measurement programs

By researcher

2-2 Selected indicators:

Since the objectives of the research analysis of the development reality of the regions, it was necessary to choose the indicators to be consistent with the main dimensions of development, especially social spatial.

On the social side: the concept of human development is the most powerful indicator for measuring human life, as well as the quality of life index as it relates to all aspects of social, economic and environmental life.

And the fact that the spatial dimension is a reflection of all other aspects geographically had to address the prosperity of cities index as it directly reflects the level of development on the urban environment built and seeks to promote the prosperity of cities and thus improve the quality of life.

2-2-1 Human Development Indicator:

It is expanding the options, the life richness not in the economy richness. The first Human Development Report has been released in 1990, with this simple idea.

This concept extends for all areas of human life beyond education, health, life and security, as well as the enjoyment of fundamental freedoms, political, social, economic and cultural, and the expansion of people's choices.

The sustainable human development adopted the principle of making development serve people rather than putting people in service of development. Is a development that not only generates growth but also distributes its revenues fairly. It renews the environment instead of destroying it, makes people strong, and expands their choices and opportunities, and empower them to participate in decisions that affect their lives. ⁷

The concept of human development is measured by the human development index, which estimates human well-being with dimensions that exceed the concept of income, and the value of the index is higher than 1.0. ⁸

Figure (5) shows the human development index with dimensions, and figure (6) shows the classification of countries by value of HDI indicators, and figure (7) shows Value of the HDI in the Syrian Arab Republic.

⁷ www.iraqoftomorrow.org.

⁸ Human Developments reports.

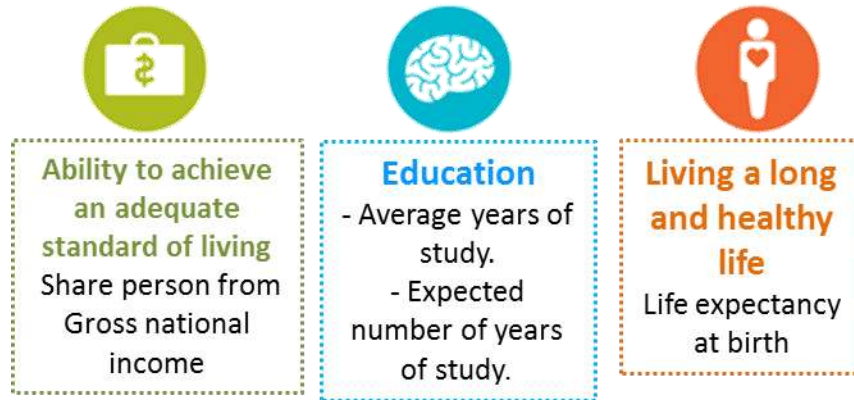


Figure 5 **The human development index with dimensions**, by researcher



Figure 6 **Classification of countries by value of HDI indicators**, by researcher

Value of the HDI in the Syrian Arab Republic

2013	(116)	
2014	(118)	Medium
2015	(134)	
2016	(149)	
2017	(155)	Low

Figure 7 **Value of the HDI in the Syrian Arab Republic**, by researcher based on HDI reports

2-2-2 Quality of Life Indicator (QOL):

The growing interest comes from studying the quality of life in urban areas In response to problems related to unemployment, social, environmental, health and public services As a tool to support and improve public life from various aspects. ⁹

⁹ Review of Urban Life Quality in Separation of Localities in Iran, Case Study: Noorabad City, 2011, P (1611).

This concept is of interest to all countries in various disciplines and has become an important tool for evaluating several areas, including: urban planning and administration.

There is still a great deal of ambiguity about the concept of QOL, its elements and indicators at present.

Cutter (1985) defines the quality of life as: the happiness of individuals or satisfaction with life and the environment, including needs and desires, ambition, the right to choose lifestyle and other intangible factors that generally govern well-being.¹⁰

And according to the references, **the indicators of QOL** can be divided into **Objective and subjective indicators**, and its include Social, Economic, Political, Physical and Environmental indicators¹¹, figure (8).

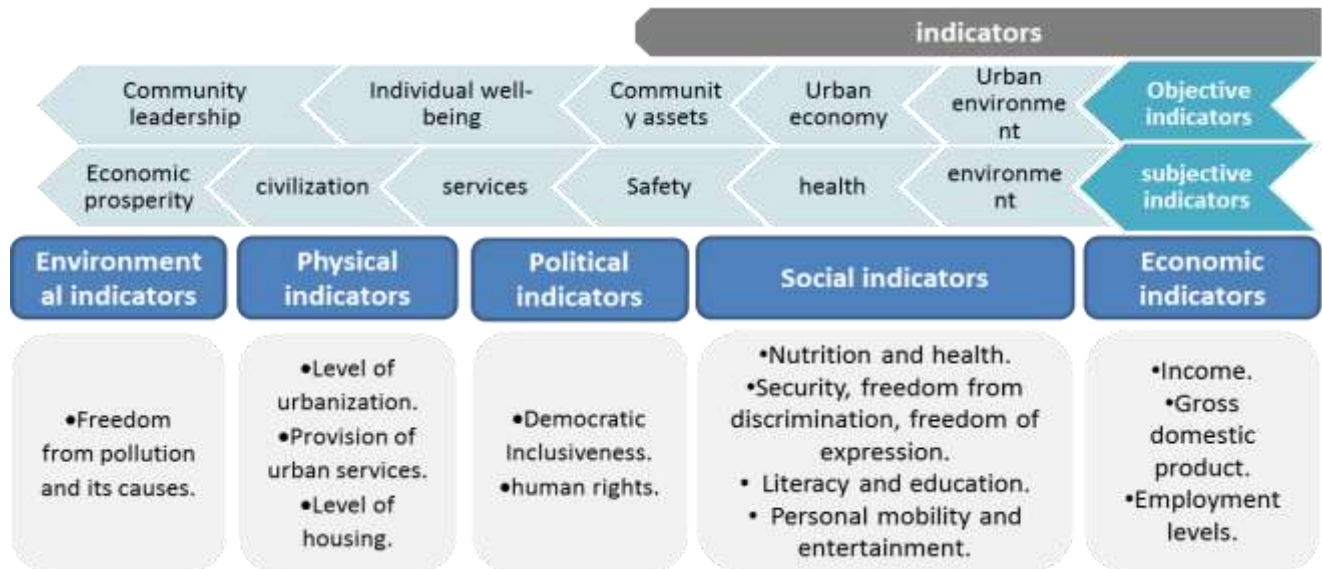


Figure 8 **Quality of life indicators**, by researcher:

2-2-3 Index of city prosperity:

Cities have emerged as the focus for change and the venue where policies are realized. They have been able to forge new linkages among actors and offer innovative solutions, with the potential to be part of national agendas, and to influence regional and global development. However, poor planning, the absence of effective governance and legal frameworks, and the lack of a sound monitoring mechanism, diminishes the possibility to promote long-term sustainable urban development.

¹⁰ Cutter, Susan, **Rating Places: A Geographer's View on Quality of Life**, Association of American Geog., 1985.

¹¹ Feneri A-M, Vagiona D. and Karanikolas N, **MEASURING QUALITY OF LIFE (QOL) IN URBAN ENVIRONMENT: AN INTEGRATED APPROACH**, 2013, p (250-251).

Data and metrics enable cities to make correct decisions on the best policies to adopt, This is fundamental towards achieving higher levels of urban prosperity and sustainable urban development for all.

UN-Habitat’s City Prosperity Initiative (CPI) is a global initiative that enables city authorities, as well as local and national stakeholders, to identify opportunities and potential areas of intervention for their cities to become more prosperous.

The CPI is both a metric and a policy dialogue, which offers cities from developed and developing countries the possibility to create indicators and baseline information, often for the first time. It is also a global monitoring mechanism, adaptable to national and local levels that can provide a general framework that allows cities, countries, and the international community to measure progress and identify possible constraints.¹² Figure (9) shows Urban prosperity Wheel which developed by UN Habitat .

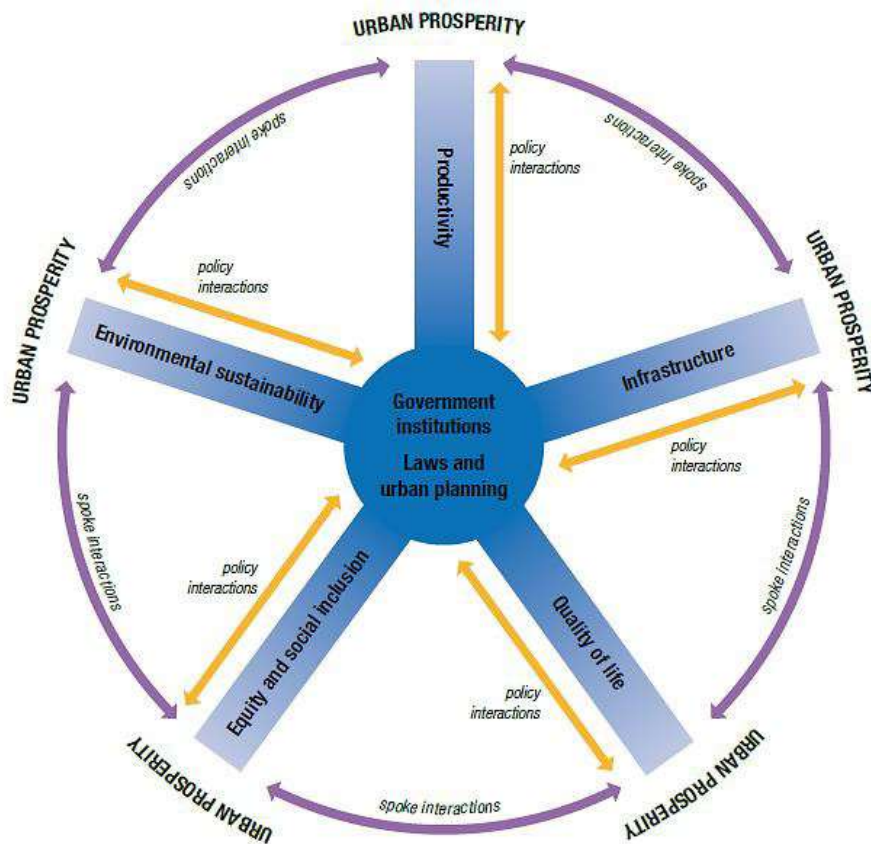


Figure 9 Urban prosperity Wheel

¹² City Prosperity Initiative, UN Habitat website.

<http://unhabitat.org/urban-initiatives/initiatives-programmes/city-prosperity-initiative/>

Source: https://www.researchgate.net/figure/the-wheel-of-urban-prosperity-Source-UN-Habitat-2013-p12_fig1_319634403

Index of city prosperity (CPI)			
indicators	Sub dimensions	dimensions	
City product per capita	. Economic power	Productivity	1
Unemployment rate	Employment		
Shelter improvement	Housing infrastructure	Infrastructure	2
The density of doctors	Social infrastructure		
Internet services	Information technology		
Traffic Accidents	Urban mobility	QOL	3
Life expectancy at birth and level of education	Health and Education		
Murder rate	Safety and security		
Gini coefficient. Poverty rate	Economic stocks	Social Justice	4
Poor families, youth unemployment	Social integration		
Enrollment in secondary schools.	Gender mainstreaming		
-Concentration PM 2.5.	Air quality	Environmental sustainability	5
Wastewater treatment.	Waste management		
Renewable energy ,CO2.	The energy		
Voter turnout	Participation	Governance and legislation	6
Duration of work.	Institutional capacity		

Table 1 **Index of city prosperity (CPI)**

Source: **THE CITY PROSPERITY INITIATIVE, 2015 Global City Report**, UN HABITAT, International City Leaders (ICL), 2015.

3- Vulnerability Concept:

The normal use of the word "Vulnerable": Refers to the vulnerability of the object to break or damage easily.

Vulnerability has two interrelated aspects, it is impossible to separate one from the other: the economic and the social.¹³

¹³فقير علي، مقال: الهشاشة في ظل الرأسمالية "المعولمة"، جريدة زاكورة برس المغربية الإلكترونية، 2014.
Fakir Ali, article: Vulnerability in the shadow of capitalism, Globalization, 2014.

The scientific use of " Vulnerability" has its roots in geography and natural hazard research, but the term is now understood in a variety of research contexts such as: natural disasters and disaster management, environmental sciences, public health, economics, poverty and development, livelihoods and famine, sustainability sciences And land change, climate impacts and adaptation.

According to the Intergovernmental Panel on Climate Change (IPCC, 2007), the three components of Vulnerability, according to the main definition of IPCC are:

- **Exposure:** Indicates the expected changes of climate catalysts at a given location.
- **Sensitivity:** The degree to which the system is directly or indirectly affected by volatility or climate change.
- **The ability to adapt:** refers to the ability or the possibility of successfully addressing climate variability and change.¹⁴

3-1 Types of vulnerability:

3-1-1 Economic Vulnerability:

It arises from external economic risks such as stagnation and deterioration in the rates of trade, economic crises, unemployment and income weakness and others, in addition to the economic costs resulting from disasters and economic crises.¹⁵

3-1-2 Environmental and Climate Vulnerability:

Due to external natural hazards such as increased challenges of climate change (earthquakes, hurricanes, floods, heatwaves, drought and desertification), water demand, loss of agricultural land and threatened ecosystems are leading to weak adaptation and response capacity of regions.¹⁶

3-1-3 Social vulnerability:

The approach to this concept will be based on a risk perspective.

Social vulnerability in the context of climate change: It is the exposure of individuals or groups to living pressures as a result of the effects of extreme climatic conditions and climate change.¹⁷

It can be defined in a **defention**: a population in a vulnerable situation is a population living above the relative poverty threshold, but at risk of falling below that threshold in case of fluctuations in their economic and social status.¹⁸

¹⁴ Climate change vulnerability in South East Queensland: a spatial and sectoral assessment, 2010.

¹⁵ **Capacity Building in Asia using Information Technology Applications (CASITA) UNDERSTANDING VULNERABILITIES II (Social, Cultural and Economic).**

¹⁶ Hans-Martin Füssel, **REVIEW AND QUANTITATIVE ANALYSIS OF INDICES OF CLIMATE CHANGE EXPOSURE, ADAPTIVE CAPACITY, SENSITIVITY, AND IMPACTS**, Background note to the World Development Report 2010, August 2009.

¹⁷ **INDICATORS OF SOCIAL AND ECONOMIC VULNERABILITY TO CLIMATE CHANGE IN VIETNAM.**

The spatial scope of social vulnerability is manifested by:

- ✓ Internationally: A society organized with democracy, wealth, and good governance is less vulnerable.
- ✓ Nationally: Even within a country, there can be a distinction between regions and districts, or regions in terms of the level of vulnerability.

3-1-3-1 Social vulnerability Indicators:

Since social vulnerability is often linked to poverty, the UN has defined poverty: deprivation of some basic life needs such as food, shelter, clothing, education, primary health care and security.

Thus, the poverty line/limit becomes the simple and practical criterion for assessing the degree of unsatisfaction of primary needs (so the social vulnerability), but absolute poverty is measured by income, while basic needs are measured by levels of consumption and availability of basic services.

- **According to the Organization for Economic Cooperation and Development, the indicators of deprivation of basic needs include:**
 - ✓ Personal consumption: food, housing, appropriate clothing as well as several other household goods.
 - ✓ Access to public services: primary education, adult education, clean water, sewage and medicines.
 - ✓ getting a job.

Sociologists have developed indicators to measure deprivation of basic needs in the world (figure 10), including:

- ✓ Undernourishment in the individual (as a basic physical need).
- ✓ Life expectancy at birth (reflects the impact of different types of deprivation).
- ✓ The extent of illiteracy (as an indicator of deprivation in social development).¹⁹

In addition to indicators related to housing, water and sanitation, education, and income.

¹⁸ Public- Private Partnerships for Sustainable Development of Rural Areas: An Investigation into the Role of South African Project Management Firms, LAMBERT academic publishing, p42.

¹⁹الرماني زيد، مفهوم الفقر والحاجات الأساسية، شبكة الألوكة الثقافية، 2013، تاريخ التصفح 2017/4/1.

[/http://www.alukah.net/culture/0/62373](http://www.alukah.net/culture/0/62373)

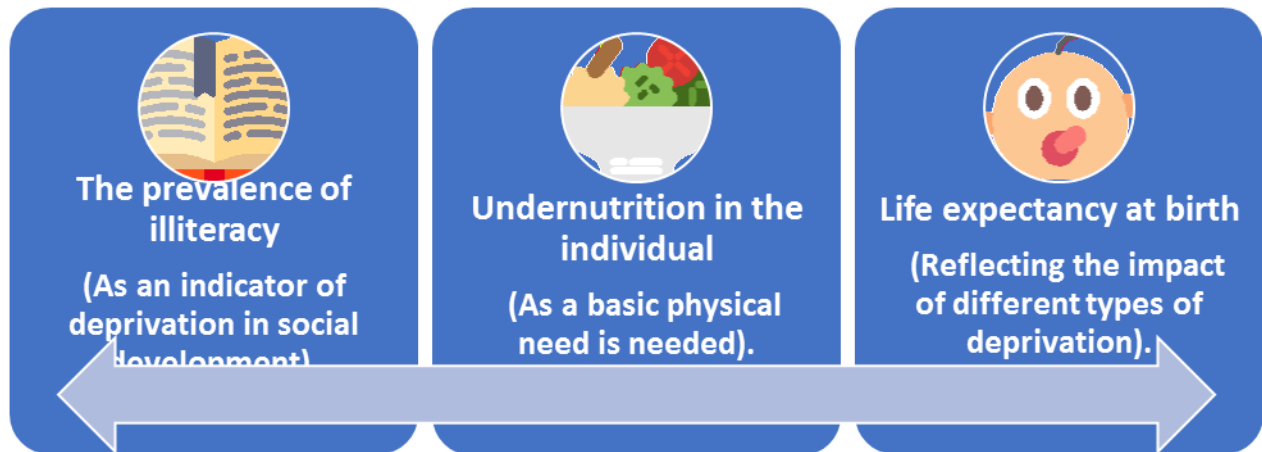


Figure 10 Indicators of deprivation of basic needs

- **Indicators of social vulnerability in the context of climate change:**

It consist of Individual aspects (widespread poverty in the event of extreme climatic events) and Communityaspects (changes in resource distribution among populations, inequality, and institutional changes).

From the above we can say that social vulnerability is a complex concept that arises from a set of fundamental weaknesses: economic, physical, family, cultural, environmental and climatic, and the indicators of social vulnerability are similar, even if their origin varies (whether exposure to natural hazards, deprivation of services, resources and development opportunities).

3-2 Vulnerability levels:

Vulnerability situations touch all levels from country level, regional level to urban level, and will be addressed as follows:

3-2-1 States vulnerability:

There are several global assessment sources that have used the term vulnerability.

- **According to the OECD (Organization for Economic Cooperation and Development):**

It is an annual measure, examining the situation of states characterized by the erosion of the legitimacy of governance and the escalation of conflict and violence.

And As a measure of monitoring for year 2016, the concept of vulnerability was defined as an accumulation of risk factors in five dimensions: economic, social, environmental, political, and security.²⁰

We conclude that the dimensions used to measure the vulnerability of states are: economic, social and environmental, the political and security dimension plays a crucial role. Noting that Fragility is the opposite of sustainability.

according to the Fund For Peace's 2019 Fragile States Index. Yemen has just been named most fragile nation, The least fragile state is Finland.

Syria was from the most fragile countries (Very High Alert category), figure (11).²¹

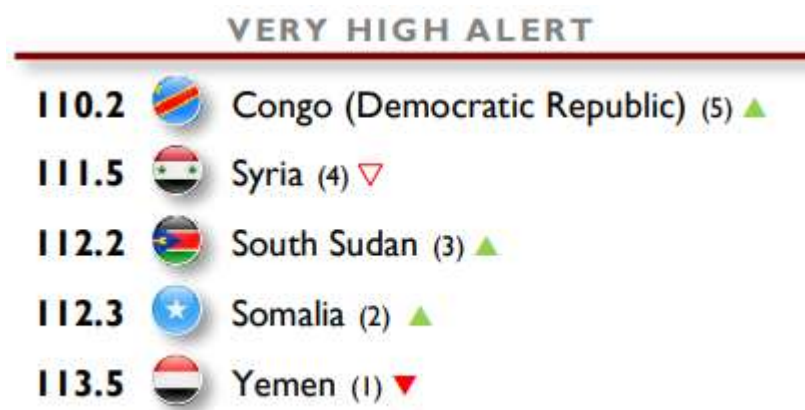


Figure 11 the world's most fragile states in 2019

Source: These are the world's most fragile states in 2019, the European sting newspaper, 15 April, 2019.

Source: <https://europeansting.com/2019/04/15/these-are-the-worlds-most-fragile-states-in-2019/>

²⁰ States of Fragility 2015 report: Meeting Post-2015 Ambitions-HIGHLIGHTS, OECD, 2015.

²¹ These are the world's most fragile states in 2019, the European sting newspaper, 15 April, 2019.

Source: <https://europeansting.com/2019/04/15/these-are-the-worlds-most-fragile-states-in-2019/>

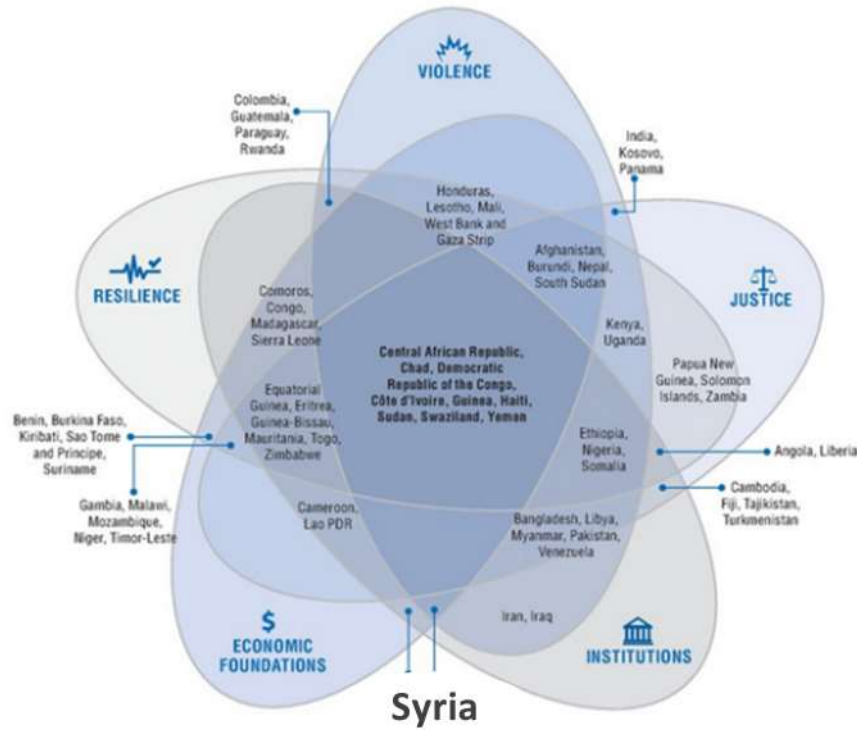


Figure 12 **fragile states index, OECD**
Source: fragilesstate.org

3-2-2 Regional Vulnerability:

It is multi-source as a result of the of the region exposure to all types of risks, it includes the natural and human components of the region, Therefore it was necessary to review the types of risks causing disasters, as well as the spatial vulnerability aspects at the regional level.

Indicators of spatial Vulnerability:

The divergence of development indicators means the unfair distribution of growth returns, which can be represented by the **deprivation index**.

- **Deprivation and living standard indicators:**

The level of human development refers to the percentages of spatial deprivation in the regions so (unsatisfied basic needs index).²²

- **indicators for spatial development deferences:**

There are economic and social indicators to estimate variance:

1. Population size and migration pattern.
2. Social Indicators: Includes educational, health and electrical services and distribution of clean water.

²² خطة التنمية الوطنية للسنوات 2010-2014 جمهورية العراق، وزارة التخطيط، بغداد، كانون الأول، 2009.

3. Economic indicators: GDP, average per capita income, spatial distribution of investments in development plans, economic activity and establishments.
4. Industrial Development Indicators: Industrial reality of enterprises, relative distribution of labor force.²³

Table (2) shows the Spatial developmental differences.

Spatial developmental differences	
Intra- Differences	Inter- differences
<ul style="list-style-type: none"> • Inside the region ,Intra – regional • Inside the urban areas, Intra – urban . • Inside the rural areas, Intra – rural 	<ul style="list-style-type: none"> • State regions , Inter - regional. • Between ,Urban – rural . • Between urban areas ,Inter – urban . • Between Rural areas, Inter – rural

Table 2 Spatial developmental differences

Source: العمار علي كريم، تحليل القابليات الذاتية في القطاع الصناعي لتحقيق التنمية الإقليمية، جامعة بغداد، 2016.

3-2-3 Urban Vulnerability at the city level:

Fragility occurs when city authorities are unable or unwilling to provide basic services to citizens.

Vulnerability is due to the accumulation of risks - such as urbanization, income, social inequality, youth unemployment, murderous and criminal violence, difficulty in accessing basic services, and exposure to climate threats.²⁴

Vulnerability of cities is measured based on a set of globally agreed indicators.

3-3 Disaster risk and vulnerability:

Vulnerability is the risk exposure, so not only individuals at risk, but communities, regions and countries as well.

Some countries suffer from shocks, and some have the strength to overcome shocks, that means they have the ability to carry on human development.

²³ زينل شاكر رزوقي، سياسة الاستثمارات والتنمية الإقليمية، مجلة المخطط والتنمية، المعهد العالي للتخطيط الحضري والإقليمي/ جامعة بغداد، العدد 20، 2009.

²⁴ How fragile are our cities?, WORLD ECONOMIC FORUM.

poor countries are Like humans, they and their populations are weaker than rich, more affected by shocks. They are more vulnerable and do not have a great deal of social competence to address them.

The types of risk include:

- **Natural hazards:** such as climate change may lead to natural disasters of floods and drought.

And Natural disaster results when natural hazards are associated with high vulnerability (viability exposure) and poor resilience ²⁵, figure (13).



Areas overlapping between natural phenomena and populated areas become **disaster zones**

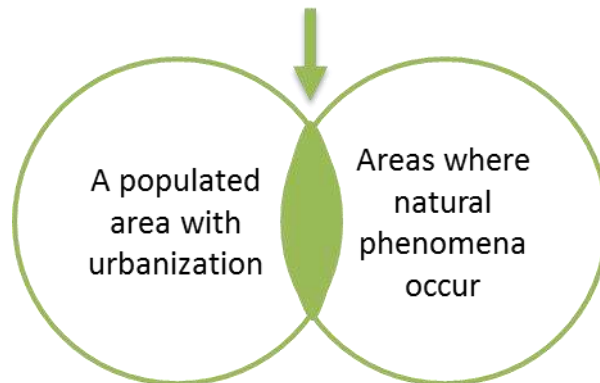


Figure 13 Natural disaster

By researcher based on the reference: Outcome of consultative meetings in the Arab region on the post-2015 framework for disaster risk reduction.

- **Social Risks:** Their sources are diverse and include Population distribution and growth, especially increasing population density and urbanization, as well as social

²⁵ نتائج الاجتماعات التشاورية في المنطقة العربية بشأن إطار عمل الحد من مخاطر الكوارث لما بعد 2015، للعرض على المؤتمر العربي الثاني للحد من مخاطر الكوارث، مدينة شرم الشيخ/ جمهورية مصر العربية، 6-14/ 9/ 2014.

Outcome of consultative meetings in the Arab region on the post-2015 framework for disaster risk reduction, 2014.

diversity, Health shocks may lead to lower household incomes and higher medical expenses and Food insecurity.

- **Economic shocks** may lead to unemployment due to the recession, financial instability, and fluctuations in food commodity prices.
- **External Risks:** Wars and conflicts can seriously damage human development, the natural environment, and physical insecurity.

The figure (14) shows the risks in the world over the years, which ranged from: economic, environmental, geopolitical, social, and technological. ²⁶

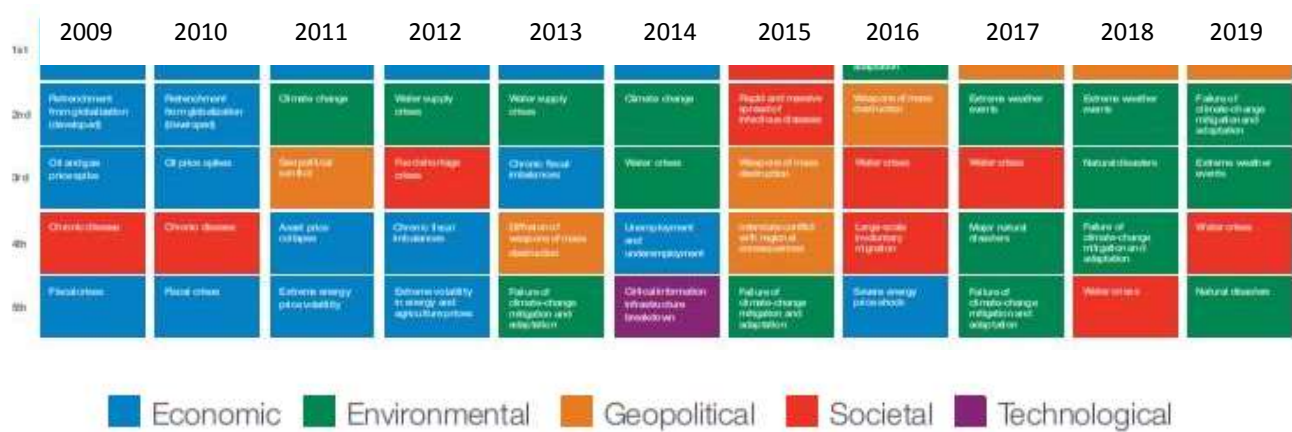


Figure 14 the risks in the world 2009-2019

Source: The Global Risks Report 2019, 14 edition, published by the World Economic Forum.

After reviewing the risks and disasters that affect the region, the concept of the vulnerable region can be identified in addition to aspects of vulnerability at the regional level.

3-4 Theoretical part Conclusion:

Based on the foregoing, we conclude that development is one of the few concepts that combine the theoretical and practical aspects. Means economic growth coupled with qualitative change in economic and social levels.

- There is a reciprocal relationship between regional development - represented by development plans that seek to develop the regions economically and socially - and geography represented by regional planning, which is the spatial dimension of development, and thus we get a comprehensive integrated concept of regional spatial development that seeks to solve regional problems and achieve development balance between regions Spatially based on its natural and human components at various levels.

²⁶ The Global Risks Report 2019, 14 edition, published by the World Economic Forum.

- The dimensions of development and sustainable development themselves can be projected in the study of the dimensions of regional spatial development, which include: social, economic and environmental dimensions, taking into account the reflection of spatial aspects, which gives them and the uniqueness of each region.

After reviewing the concept of regional spatial development previously, and then the development indicators in this chapter we find that:

By comparing and combining the selected monitoring indicators (Table 3): as an indicator of human development (focusing on the social dimension of development), quality indicators of life, as well as an indicator of the prosperity of cities that focuses on the urban side (focusing on the dimensions of development and spatial measurement), we can reflect these indicators on The spatial level, classified according to the basic dimensions of spatial development that we have referred to: the economic, social, environmental and spatial dimensions.

- In conclusion, a table was reached showing the main dimensions and indicators of the development that should be taken into consideration when proposing any regional plans, But **we will ignore the environmental and economical indicators as they are outside the scope of this paper.**

Table: Proposed development dimensions and indicators

spatial	social
<ul style="list-style-type: none"> • Level of urbanization. • Availability of urban services: <ul style="list-style-type: none"> • Housing infrastructure: shelter, water, housing level. • Internet service. • Urban mobility. • Developmental balance between regions and between urban and rural areas. • Level of income and living. • Social Justice. • Efficient use of development potential and comparative spatial advantage (eg: human and natural resources, tourism, location, activities, road network and transport). 	<p>Human development indicators, quality of life and social equity:</p> <ul style="list-style-type: none"> • Income (per capita gross income). • Poverty rate. • Education (average and expected number of years of schooling). • Health (life expectancy at birth, physician density). • nutrition. • Safety and security • Personal mobility and entertainment.

Table 3 **Proposed development dimensions and indicators: spatial & social**, By researcher

- Vulnerability therefore occurs at the regional level **as a result of** a fragile situation in one component of the region (As an environmental, urban, or social system), or the fact that the region is exposed to certain risks that make it more vulnerable to negative impact and less resilience and response.
(In case It met with the internal fragility of external risks and leads to disastrous consequences for the region).
- Thus, **we find the interdependence between regions and their inhabitants so that they can not be separated, the vulnerability of one of them affects the other component.**

So the research then could developed a definition of a vulnerable region which includes the three components of vulnerability: exposure, sensitivity, and adaptability:

The region that is exposed to risks of various forms (environmental, climatic, economic, social, health, security, such as wars and conflicts) **and highly vulnerable to these risks** (due to the poor conditions of society that interact with phenomena and disasters occur more heavily), which leads to the transformation of risks to disasters and loss, **It suffers from poor coping, response and adaptation capabilities**, which requiring considerable efforts and a long recovery time.

4- Case study, Vulnerability & Spatial Development & Social Study in Syrian Arab Republic:

We are going to review the state of Syria and analyse it in perspective of vulneerabilty, then according to the international measurements.

4-1 Monitoring and analysis of vulnerability in the Syrian Arab Republic:

In order to analyze the reality of vulnerability, we must understand the pressures experienced by the Syrians over the past decades, as well as the types of risks and their sources of various types, which can be classified according to the main dimensions. Figure (15, 16) shows the vulnerability before and under crisis in Syria.

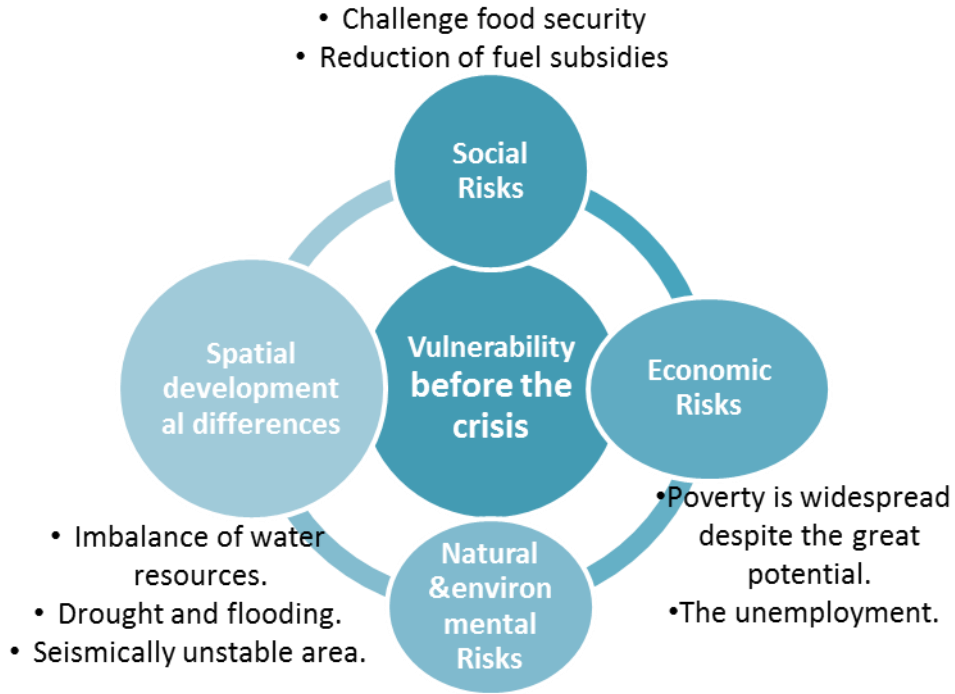


Figure 15 **Vulnerability before crisis in Syrian Arab Republic**

Disaster Management Project, Ministry of Local Administration and Environment, Syrian Arab Republic, 2006.

Al-Dardari Abdullah, The Four Circles of the Vicious Cycle: Country Cases, The Challenges of Development in the Arab Region - An Introduction to Reference Papers 2011, UNDP, p. 2.

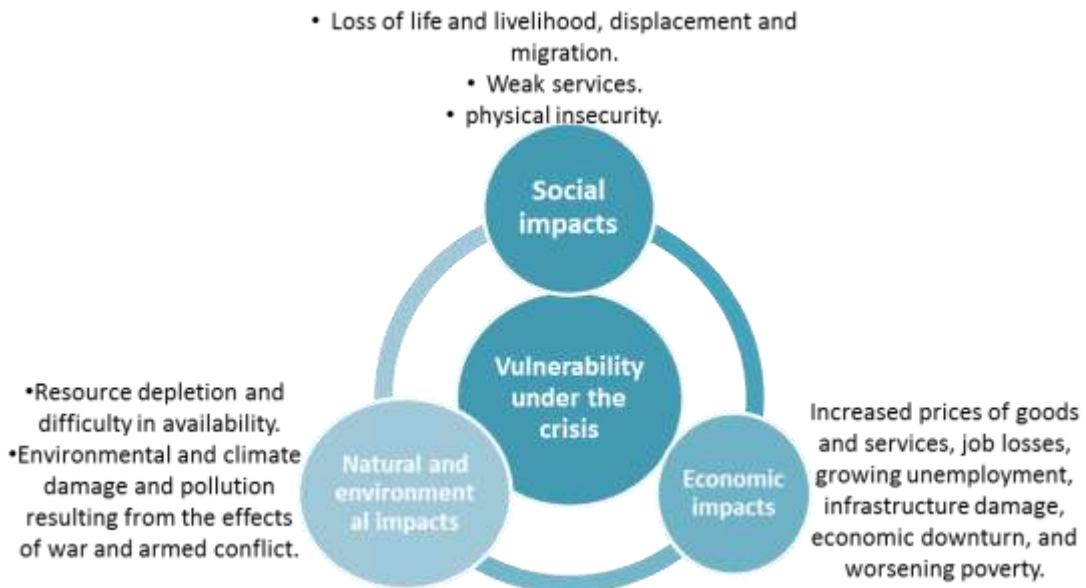


Figure 16 **Vulnerability under the crisis in Syrian Arab Republic**

By the researcher based on:

Building Resilience - Responding to the Syrian Crisis, UNDP, 2015.

So we noticed that Syria has suffered in the past from social, economic, institutional, and environmental aspects of vulnerability. The vulnerabilities have been greatly exacerbated by the conflict and have extended to most of the Republic's territory, infrastructure, economy and population.

4-2 Analysis according to Fragile States Index 2019:

The Fragile States Index, produced by The Fund for Peace, is a critical tool in highlighting not only the normal pressures that all states experience, but also in identifying when those pressures are pushing a state towards the brink of failure.

By highlighting pertinent issues in weak and failing states, The Fragile States Index - and the social science framework and software application upon which it is built - makes political risk assessment and early warning of conflict accessible to policy-makers and the public at large.

Over the long-term, **Libya** continued to **rank as the most-worsened country** of the past decade, closely followed by Syria, Mali, and Yemen, as all four countries find themselves embroiled in ongoing civil conflict. Notably, the ranking of Venezuela as the fifth-most worsened country since 2009 demonstrates how the country's current woes are the result of a severe long-term worsening trend.

Recently, Venezuela ranks as the most-worsened.²⁷ Figure (17) shows the world in 2019.

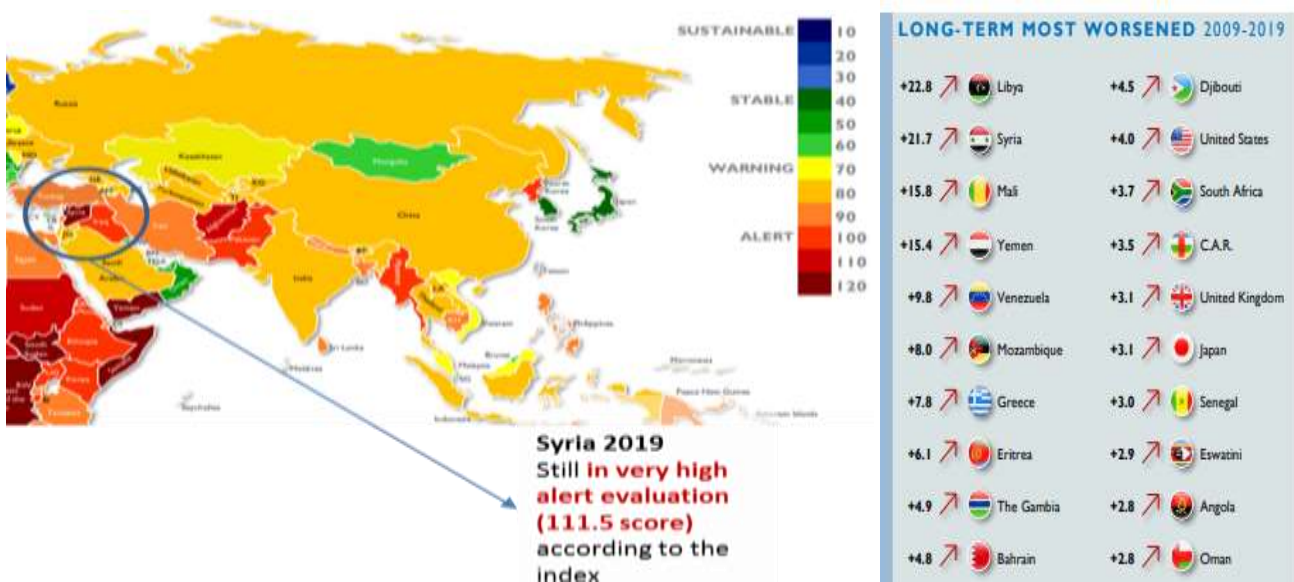


Figure 17 world in 2019, Fragile States Index

²⁷ **Fragile States Index 2019**, FUND FOR PEACE, 10 April 2019 (<https://fundforpeace.org/2019/04/10/fragile-states-index-2019/>). P10

4-3 Analysis the social dimension:

4-3-1 Impact on the Syrian People:

- Five years of brutal conflict in Syria have been sufficient to wreck development gains accumulated over the previous 25 years, worsening the living conditions of the vast majority of the population and sending many Syrian families into poverty.
- Education institutions, healthcare facilities and utilities have all suffered damage.
- Public services have deteriorated in quantity and quality, even in relatively secure areas overloaded due to the growing numbers of internally displaced persons (IDPs).
- Social structures have been shattered as almost half the population has been forced to flee abroad or within the country.²⁸

4-3-1-1 The Population:

- **Of an estimated total population of 22 million, 6.5 million were internally displaced in 2015**, most of them in the governorates of Aleppo and rural Damascus (figure 13).
- According to the Assessment Capacities Project (ACAPS), approximately 1.7 million IDPs were living in camps in 2015, and 360,000 were in areas under siege.
- Figure (18) shows the internally displaced population (IDPs) by governorate, 2015.

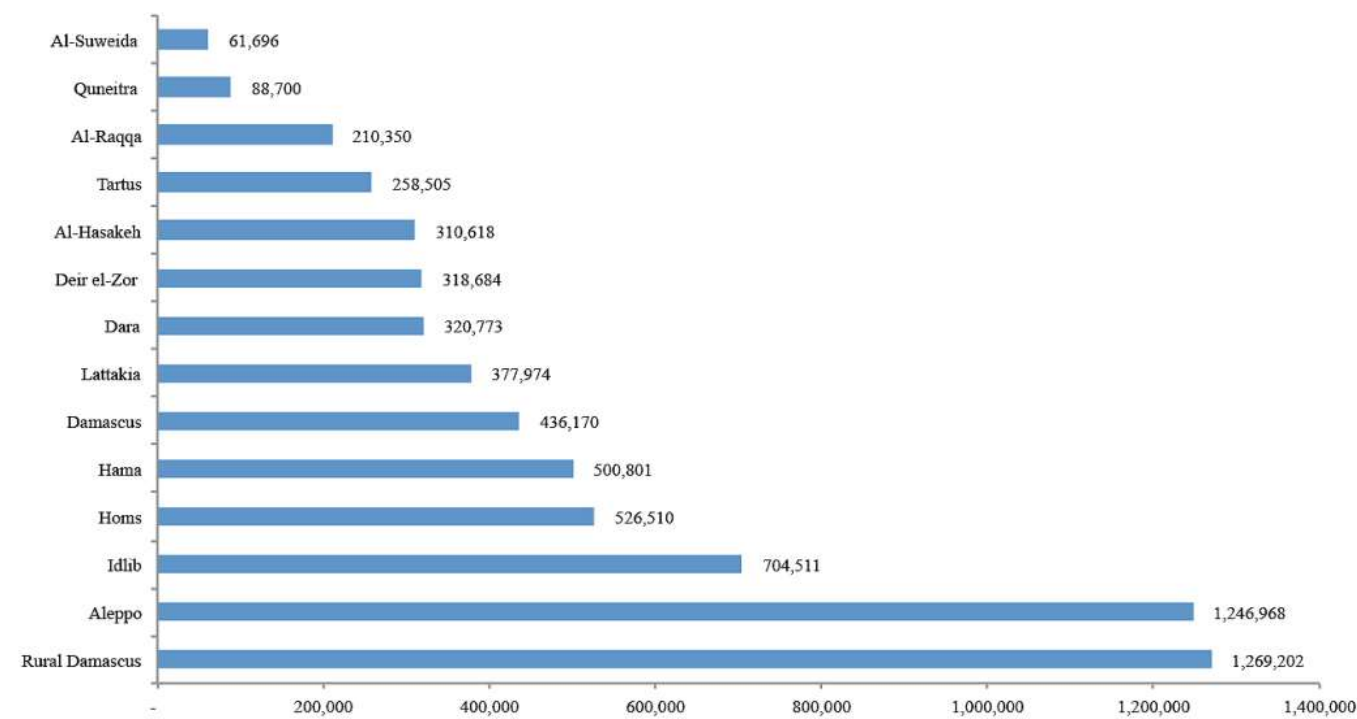
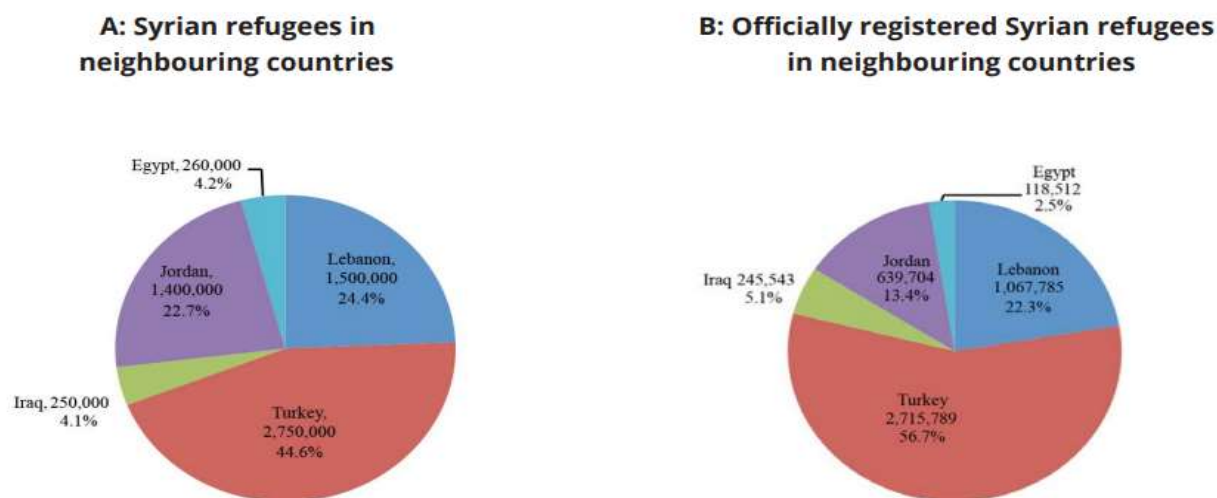


Figure 18 Internally displaced population (IDPs) by governorate, 2015

²⁸ Syria-war-five-years-, University of St Andrews, ESCWA, united nations, 2016.

Source: United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 2015.
Humanitarian response plan: January-December 2016. Syrian Arab Republic.

- The number of Syrians in neighbouring countries (Egypt, Iraq, Jordan, Lebanon and Turkey) was thought to exceed 6 million by the end of November 2015 (figure 19a).
- Almost 5 million refugees were officially registered (figure 19b).



Source: Office of the United Nations High Commissioner for Refugees (UNCHR), 2016a. 3RP Regional Refugee & Resilience Plan 2016-2017: In response to the Syria crisis.

Figure 19 Syrian refugees

4-3-1-2 Sourced Of Income And Employment:

- In 2015, salaries and pensions were the main source of income for 58% of Syrians, down from 68% in 2013.
- The drop can be attributed to the closure of many labour-intensive establishments because of the conflict. The proportion of households depending on income generated by the self-employed increased from 26% to 33.7% during the same period.
- Growing dependence on more uncertain sources of income, remittances and humanitarian aid, combined with the deteriorating purchasing power of local currency, has forced many households to develop different strategies to cover the basic needs.
- One out of three households had to borrow from relatives in 2015,
- and **17% of households were forced to sell one or more of their durable goods** to obtain food and essentials.

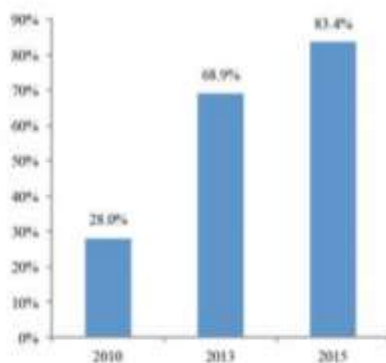
- More seriously, **10% of households had to sell a productive asset** (sewing machine, irrigation equipment, livestock, car or a bike) used to generate income in order to meet their basic needs, according to (source: the Syrian Central Bureau of Statistics).
- **Much of the deterioration in income sources can be ascribed to:**
 - structural changes in the labour market as most young people over the age of 18 years have been driven into military service.
 - the closure of many workplaces has led to massive job losses.
- **The economy lost 2.1 million actual and potential jobs** between 2010 and 2015.
- **Unemployment in 2015 was 55%, up from 54.2% in 2013. Youth unemployment soared from 69% 2013 to 78% in 2015.** (24) source

4-3-1-3 Poverty and People in need of humanitarian aid:

Falling income, widespread unemployment and diminished purchasing power mean rising poverty. Measuring poverty in Syria today is complex.

- **It has been estimated that 83.4 % of Syrians now live below the upper (moderate) poverty line applied by the Government of Syria, up from 28 percent in 2010** (figure 20a).
- **A large share of the employed population may thus be considered as the working poor.** This is largely because the cost of the standard food basket has risen more than threefold in nominal terms since 2010, and modest rises in nominal salaries have absorbed only 15-20% of the price increases.
- The poverty gap has deepened.²⁷
- In 2010, poverty in Syria was considered “shallow”, The poverty gap reached a new record in 2015 of 16.3%, up from 11.9 % in 2013.
- **The gap was worst in rural areas at 17.9%, up from 13.6% in 2013** (figure 20b).

A: Population below the upper poverty line



B: Poverty gap ratio, 2010-2015

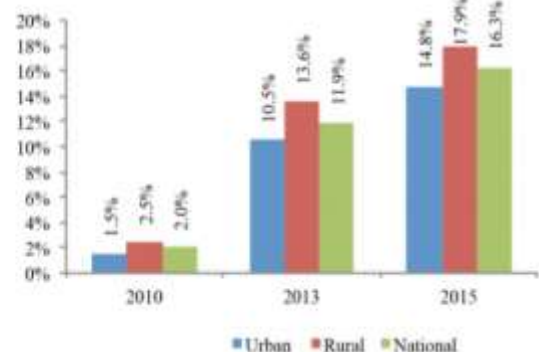


Figure 20 Poverty and People in need ratio in Syria, Source: ESCWA

4-3-1-4 Education Sector:

The devastating impact of conflict on education in Syria, wiping out decades of development, threatens to leave an entire generation of children without education.

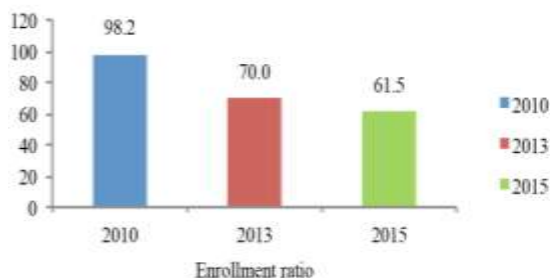
- The portion of the population with access to education fell from 95% prior to the crisis to less than 75% in 2015, a result of the loss of infrastructure and a shortage of teachers.
- More than 27% of schools reported staff shortages in 2015.
- (According to the Syrian Ministry of Education), 5,800 schools (26% of the national total) were out of action in 2015, due to destruction and inaccessibility (5,200) or because they were being used as shelters for IDPs (600).
- Government expenditure on education has fallen from an average 5% of GDP in 2000-2010 to 3% since 2011.

All the above has led to disastrous rates of school attendance.

- many children had been out of school for several years.
- Around 2 million school-age children are not attending school in Syria and another 446,000 are at risk of dropping out.
- At the same time, 53% refugee children are not enrolled in school in neighboring countries.

Figure 17: Education (percentages)

A: Total enrolment in primary education



B: Female to male enrolment ratios

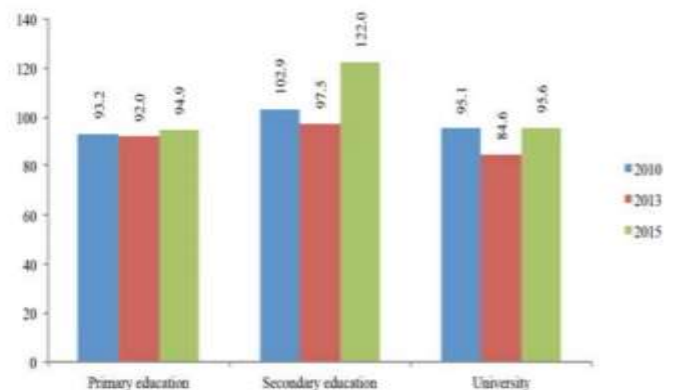


Figure 21 Education (percentage) in Syria

However, **the ratio of female to male enrolment in all stages of education was higher in 2015 than 2010** (figure 21b). Reasons for that young males belonging to this age group usually bear the burden if the family head is absent or unable to work, particularly in times of conflict, when older males are obliged to carry out military

service. A growing number of university-age males, compared with 2013, were either caught up in the fighting or had left the country in 2015.

4-3-1-5 Health Sector:

- The health sector has been especially hard hit, Shortages of medicines, spare parts, electrical power and trained staff have hampered the work of those facilities that have managed to continue working.
- Almost half of the total 493 hospitals in the country in 2010 have been directly impacted in the five years of fighting. In 2015, 170 hospitals (34 %) were out of service and 69 (14%) were only partially functioning.
- One third (165) of the country’s hospitals (88 % of them private) had been destroyed by 2015, and a further 11 % had been partially damaged.
- Repairing many of them was out of the question, since 119 of the destroyed or damaged hospitals were inaccessible and another 59 hard to reach (figure 22).

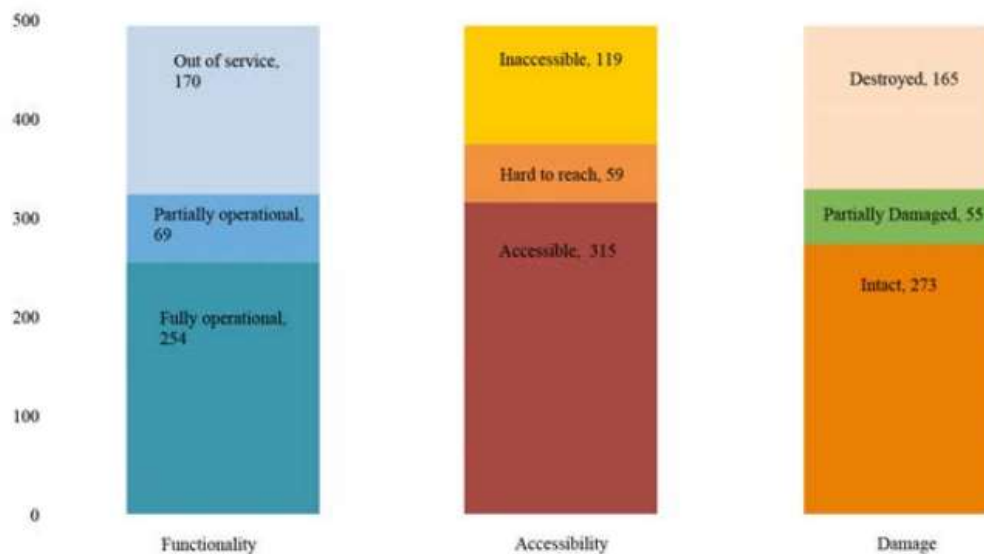


Figure 22 operational public and private hospitals 2015

Source: Data from the Syrian Ministry of Health

The decline of healthcare services is reflected in steadily worsening health indicators since 2011.

- **The net death rate**, for instance, rose from 3.7 per thousand in 2010 to 10.9 per thousand in 2015, and reached 12.4 per thousand or more in governorates hardest hit by fighting (Aleppo, Dara, Deir el-Zor, Idlib and rural Damascus).³⁴
- Maternal mortality rose from 56 per 100,000 live births in 2010 to 63.9 in 2015 (figure 23).

- Under-5 and infant mortality rates also rose over the same period, from 21.4 to 25.9 and 17.9 to 23.7 per thousand respectively.
- The rate of child immunization, which was close to 100% across the country prior to the conflict, fell to an average of 75.2% in 2014. some diseases such as tuberculosis and measles began to spread widely.
- Some diseases that had been eradicated prior to the conflict, such as polio, reappeared. In spite of tremendous efforts by the World Health Organization (WHO), UNICEF, the Syrian Ministry of Health and civil society organizations to confront this dire situation.

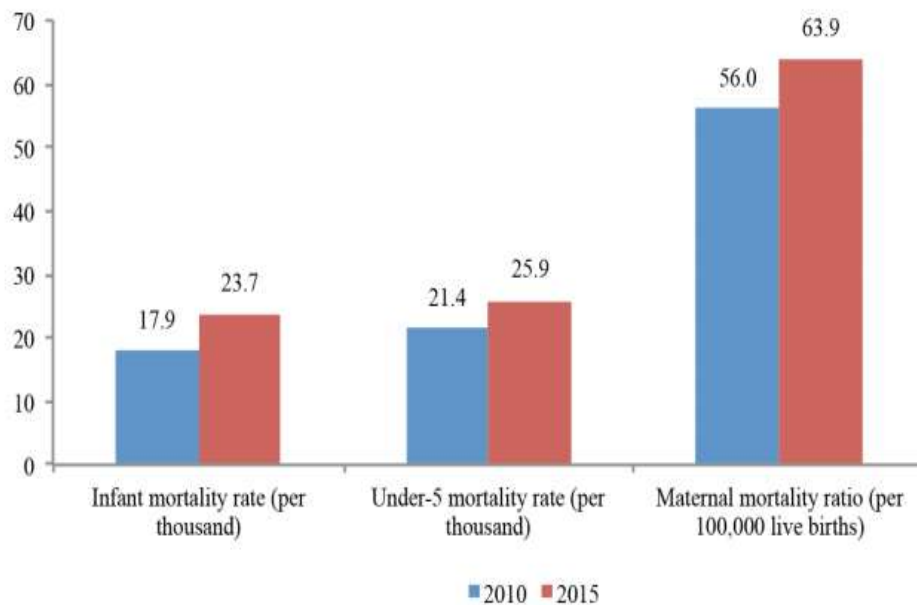


Figure 23 Selected health indicators, 2010-2015

Source: Data from the Syrian Ministry of Health and the population survey by the conducted by central Bureau of Statistics in 2014

4-3-1-5-1 Medical and Healthcare Solution under the crisis:

As a result of the destruction of hospitals and convert some of them into military barracks, in addition to the closure of thousands of private clinics, it has been increased reliance on field hospitals despite poorly equipped. ²⁹

4-3-1-5-1-1 On The international level:

1) Medical assistance from the World Health Organization (WHO).

More than 11 million people in Syria need medical assistance that hospitals and primary clinics are unable to adequately provide, the WHO said in a 2016 statement.

²⁹ قلة إمكانات المشافي الميدانية تزيد المعاناة بريف دمشق، موقع السورية نت، تشرين الأول 2014.

The arrival of aid from WHO and its partners has improved in 10 of the 18 besieged areas, following a "fragile ceasefire."

Medicines, vaccines and medical supplies were delivered through joint humanitarian convoys to Madaya, Zabadani, Mu'adamiyah, Kafr Batna, Ain Tarma, Jisreen, Saqba, Hamouriya (in Damascus suburbs), Foua, Kefraya (in Idlib) and areas in Aleppo, including Azaz, Afrin and areas in the eastern governorate.³⁰

It established Response Plan 2017 for Syrian Arab Republic which mentioned that All areas of the country are impacted by the continuing conflict. The conflict has resulted in thousands of deaths and injuries, increased internal displacement, large-scale migration, mounting humanitarian needs access to many areas.



Figure 24 Syrian children suffering from bad health care

The health sector funding requirements for 2017 was 464.9 million US\$ (health partners including WHO).

Beneficiaries targeted by health partners in 2017 were 12.8 million people, This includes: 36% women, 25% children, 9% elderly.³¹

Humanitarian Response Plan strategic objectives:

- Objective1: To provide life-saving and life-sustaining humanitarian health assistance to affected people.

³⁰ **World Health "**: **More than 11 million Syrians need medical assistance**, Alsourianet website, 16 march, 2016.

³¹ **Syrian Arab Republic Humanitarian Response Plan 2017**, world health organization, 2017.

- Objective2: To strengthen health sector coordination and health information systems to improve the life-saving health response for people in need, with an emphasis on enhancing protection and increasing access to health services.
- Objective3: To support community resilience, institutional and response capacity by empowering communities and national actors.
- **During 2016:** Over 11 million treatments delivered across the country, of which over 1.7 million were delivered through cross-border operations. Over 30 cross-border missions conducted to besieged and hard-to-reach locations.³²

2) **Turkey** began to set up field hospitals on the border with Syria, The first field hospitals were at the Gaziantep Customs Gate opposite the Jarablus crossing on the Syrian side.

Conducted by the National Medical Rescue Teams (UMKE), under the supervision of the Ministry of Health. Hospitals are tents and stretchers, flooring processing, in the border line (shanlıurfa and Mardin).³³



25. Figure Medical assistance location in Turkey

Source: by researcher + google photo

The National Turkish Medical Rescue Teams (UMKE) established field hospitals along borders with Syria.

^{32 32} Syrian Arab Republic Humanitarian Response Plan 2017, world health organization, 2017.

<https://www.enabbaladi.net/archives/279964> ³³

تركيا تبدأ إنشاء مستشفيات ميدانية على الحدود مع سوريا، شباط، 2019.

4-3-1-5-1-2 On The Local level:

In response to the Syrian crisis in the health sector, field hospitals were established

Field hospitals in South Syria:

- **In Daraa:** The aerial bombardment of several towns in Daraa governorate in southern Syria resulted in the discontinuation of four field hospitals: Saida field hospital, a charitable hospital in the eastern town of Ghariyah, al-Na'ima field hospital (east of Daraa city) and Tafas field hospital north of the city.

Field hospitals originated in several areas of Syria witnessing military operations, and they work in difficult conditions and are exposed to shelling and suffer from a lack of equipment and medicines and treatments.³⁴



26. Figure One of the field hospitals which stopped working in Daraa

- **In Quneitra:** Rafid town field hospital in the countryside, the hospital has CT scanners and advanced medical equipment.³⁵

Field hospitals in North Syria :

The medical sector in both Idlib countryside and northern Aleppo countryside also suffers from problems, the most important of which are the discontinuation of some field hospitals and medical centers from operating in whole or in part.

This is due to the interruption of support provided by the organizations and associations concerned, and the risk of shelling, which necessitated the transfer of most of them to fortified basements underground.³⁶

Rakaya field hospital in Idlib, underground rooms have been added to avoid shelling.

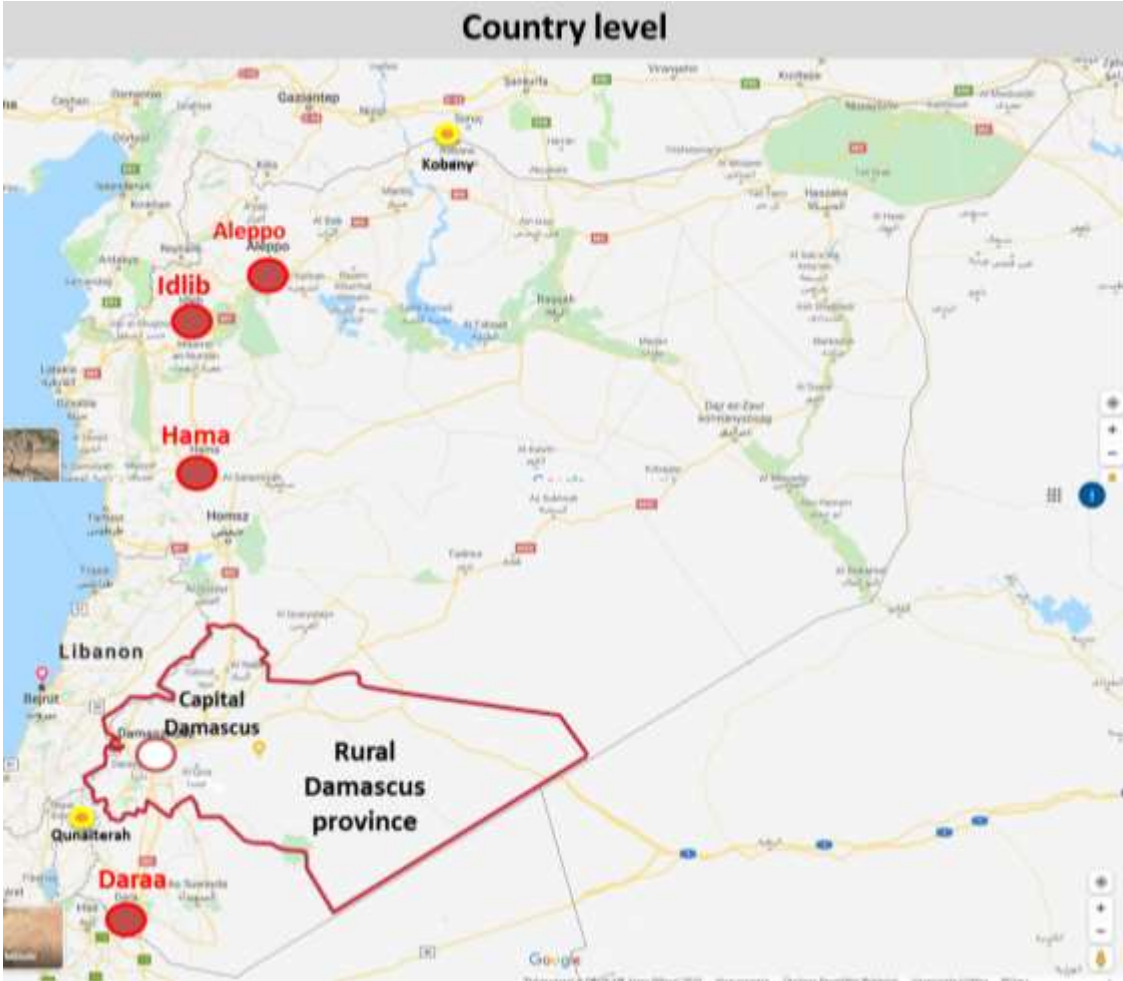
³⁴ توقف أربع مشافي ميدانية عن العمل بدراعا نتيجة قصف النظام، السورية نت، 2 يوليو، 2015.
³⁵ الجيش السوري يعتز على مشفى ميداني من مخلفات الإرهابيين بريف القنيطرة، موقع النعيم نيوز، 23 أغسطس، 2018.
³⁶ المشافي الميدانية شمال سورية تعاني من نقص التمويل والقصف المتواصل، السورية نت، 18 أكتوبر، 2014.

Equipped with two ambulance rooms, one for children operations and a third for intensive care, with a depth ranging from 5 to 6 meters.³⁷



Figure 27 Rakaya field hospital in **Idlib**, underground rooms

The map (1) shows the main areas which the field hospitals concentrated in.



1. Map field hospitals distribution at the country level

³⁷مستشفى تحت الأرض في ادلب تجنبا للقصف، موقع انترنت، مصر العربية، 9 فبراير 2016، وقت التصفح 17 أغسطس، 2019.

4-3-1-5-2 Conclusion about the medical situation:

- Many of the field hospitals resorted to digging caves, and some of them put fortifications of sand bags of sand walls, and confined the work to the basements and the ground to reduce the risk.
- Field hospitals suffer from severe shortage of medicine, poor equipment, and shortage of staff, after many specialists left the area as a result of heavy shelling or lack of livelihoods.
- Field hospitals in Syria lack of medical supplies.
- Most of these field hospitals established in the besieged areas or beyond the control of the state.

4-3-1-6 Access to water and sanitation:

Housing services have deteriorated across the country since the conflict began, even in relatively secure areas, thus contributing to make the lives of many still more miserable.

Water Availability:

- Syria was considered a water-poor country even before the crisis, with the share of drinking water per capita dropping from 91 cubic meters in 2001 to 72 cubic meters in 2011.
- although the proportion of population with access to safe drinking water decreased from 86% 2011 to 84% by 2015.
- More seriously, the share of drinking water per capita has dropped dramatically to only 48 cubic meters.

That is a direct result of widespread damage to water infrastructure.

The sanitation.

- Prior to the conflict, 98.6% of the population (in some cities was 100%) had access to improved sanitation facilities.
- (According to the General Establishment for Drinking Water and Waste Disposal), that figure had fallen to 72% by 2015.
- The proportion of the population benefiting from wastewater treatment stations fell from 52% in 2010 to 9% in 2015, largely as a result of inaccessibility and shrinking financial resources available for investment in wastewater treatment.

4-3-1-7 The reality of children as a result of the Syrian war:

There are about **half a million Syrian children in Lebanon**, Including some 300,000 school-age children.

UNICEF, in cooperation with the Ministry of Education in Lebanon, **has been able to introduce 200,000 to a form of education** (between public schools, informal education programs and vocational education). But there are still 100,000 children out of school.

They are "a source of concern," as they are exposed to child labor, and homelessness and various forms of exploitation.³⁸

In a report released on March 13, 2017, the United Nations Children's Fund (UNICEF) reported:

- that more than 2.3 million children now live in Turkey, Lebanon, Jordan, Egypt and Iraq.
- For children under conflict
- In Syria, children suffered the highest number of violations in the country.
- Prevent humanitarian access.
- In Syria, 400,000 people, including children, remained in besieged areas, such as al-Ghouta and rural Damascus, in deteriorating living conditions.
- Recruit children and join terrorist groups. By 13% over 2016.
- Cases of detention.
- Murder and mutilation.
- Cases of rape as a result of unknown armed groups.
- Attacks on schools, hospitals and staff.
- Use of schools for military purposes.³⁹



Figure 28 Syrian Children under the crisis

³⁸ التقرير السنوي: الأطفال تحت رحمة أعمال لا وصف لها من العنف في ظل النزاعات وارتفاع عدد الانتهاكات الجسيمة في عام 2017، الأمم المتحدة، 24 تموز 2018.

³⁹ Children and armed conflict - Report of the Secretary-General, General Assembly, Seventy-second session , Agenda item 68 (a), 16 May 2018. P25-27.

4-4 The Economic Dimension:

The social situation is usually linked to the economic situation, especially with regard to the level of employment and GDP per capita, we will take a look at the changes in economic conditions as a result of the Syrian crisis.

4-4-1 Negative GDP growth and significant damage to capital stock:

Cumulative losses during between 2011 and 2015 are estimated at \$259.6 billion, \$169.7 billion in GDP¹⁴ and \$89.9 billion in capital stock.¹⁵ GDP losses accelerated in 2012 and 2013 as economic activity plummeted and fighting intensified and spread across the country.

Economic sanctions began to bite in mid-2012, affecting all economic sectors, especially

those dependent on primary production materials, food products and fuel. The collapse in oil and natural gas production between 2010 and 2013 exacerbated GDP losses.

Figure (29) shows: Real GDP losses (billions of US dollars in 2010 prices)

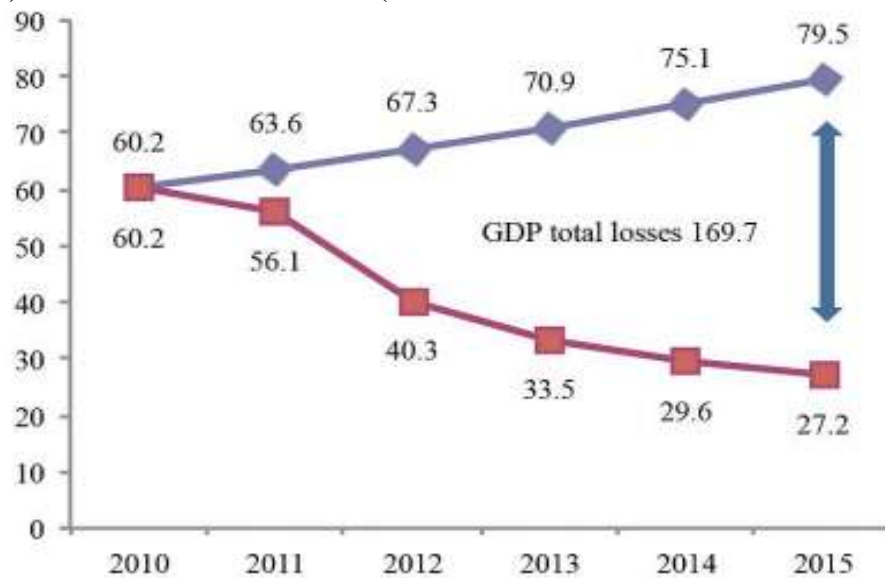


Figure 29 Real GDP losses (billions of US dollars in 2010 prices)

source: data from ESCWA national agenda for the future of Syria (NAFS) and the eleventh five-year – plan (Syrian state planning commission 2011)

Real GDP contracted by 55 percent between 2010 and 2015, when it had been expected to grow by 32 percent. (figure 30).

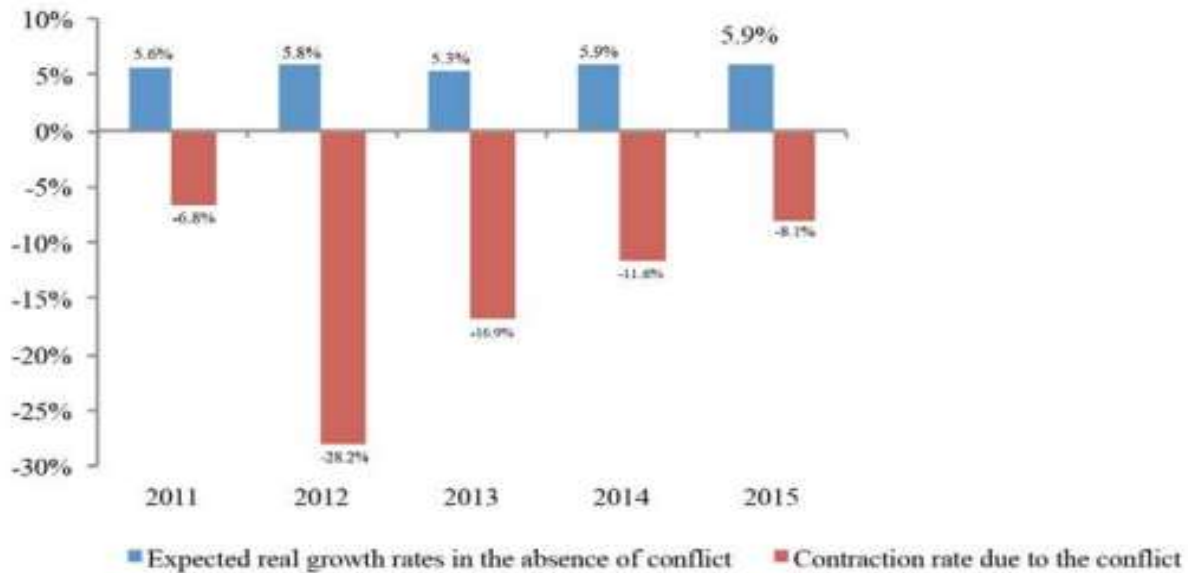


Figure 30 GDP losses and projected growth in absence of conflict

Source Data from NAFS

4-4-2 The informal economy tends to flourish in times of unrest and war:

In Syria, it is thought that the informal economy before the crisis already represented around 40 per cent of GDP. It is likely to have grown considerably in areas outside Government control, especially in the north, northeast and south, and in some areas along the border with Lebanon.⁴⁰

4-4-3 SHRINKING AGRICULTURAL PRODUCTION AND WIDESPREAD FOOD INSECURITY

Before the conflict, Syria did not rely on food imports. However, farming GDP fell by nearly 60 per cent in real terms between 2010 and 2015. Many factors contributed to the decline, including: the lack of access to farmland due to military operations; the lack or expense of energy sources needed for irrigation; the impact of sanctions on production costs; the destruction of farms; and the rising cost of transport. The total area under cultivation dropped from 6 million to 3.6 million hectares and land productivity plummeted.

As a result, the price of food in Syria has risen sharply. figure (31) shows food security during the conflict.

⁴⁰ [Syria-war-five-years-English/pdf](#)

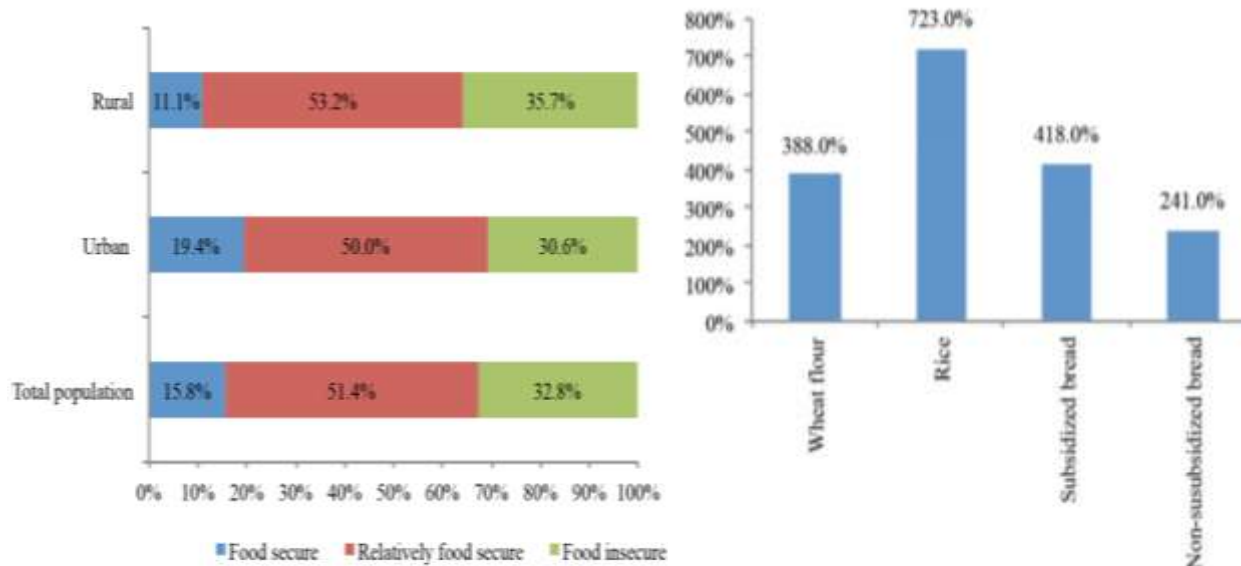


Figure 31 food security during the conflict (2011-2015)

4-4-4 Fiscal impact of the conflict:

- Conflict has led to escalating budget deficits, especially since 2012, when State revenues began to plummet (figure 32A).
- Current expenditure, fell by 52 % in real terms, and capital spending collapsed by 95 % (figure 32B).
- Oil revenues decreased by 95 % in constant prices as oil and gas production collapsed (figure 33B).
- Non-oil revenues also fell by 95 % in constant prices.

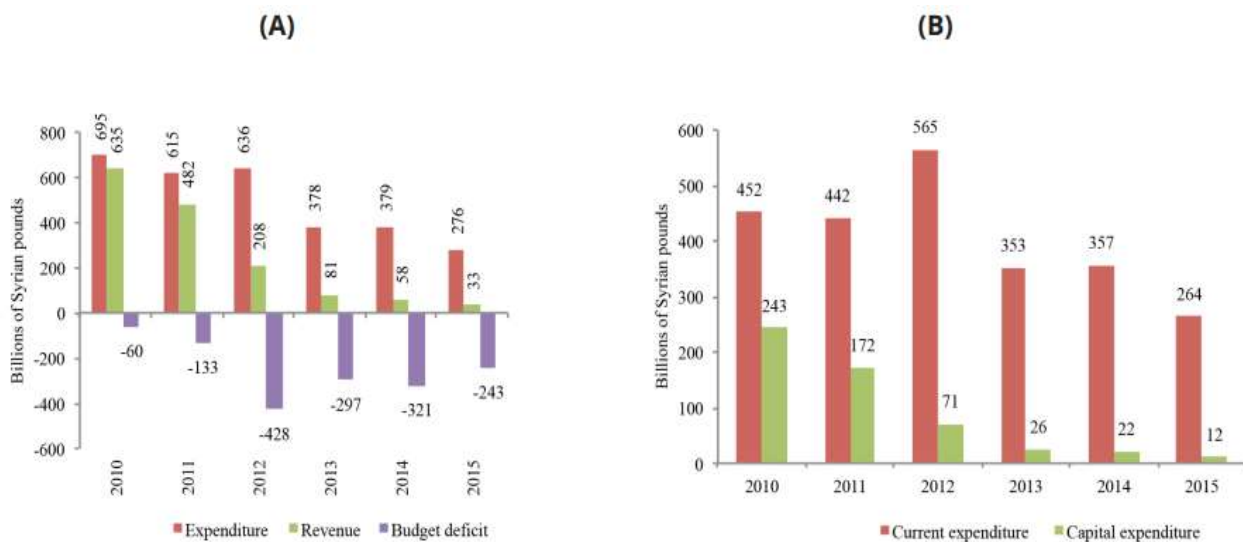
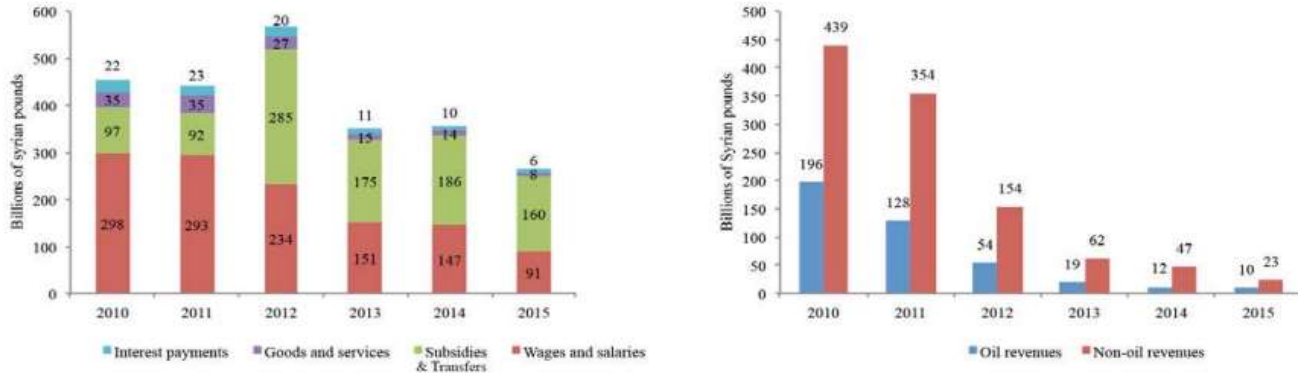


Figure 32 Budget deficits (A) current and capital expenditure, (B) in 2010 prices

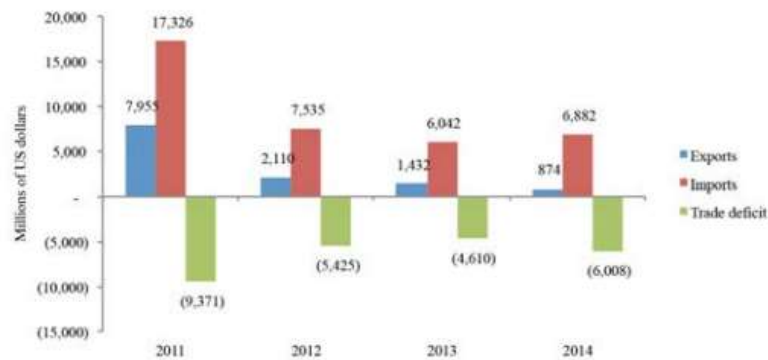
Source: Data from NAFS



33. Figure Current expenditure breakdown (A) oil and non oil revenues, (B) in 2010 prices

4-4-5 Trade contraction, domestic recession and sanctions:

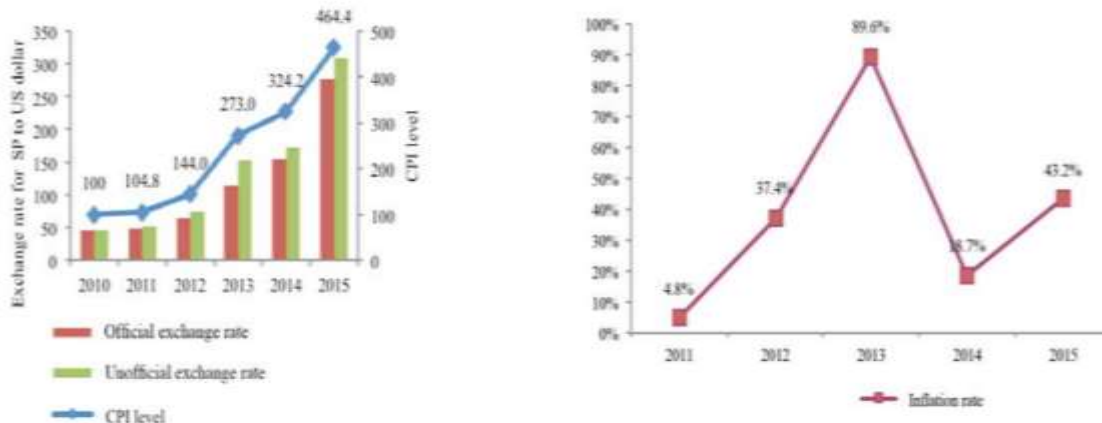
- The economic slowdown and sanctions have had a direct impact on foreign trade.
- Exports and imports fell by 89% and 60% respectively between 2011 and 2014. figure (34).



34. Figure Impact of the conflict on trade deficit 2011-2014

4-4-6 Inflation, devaluation and supply shortages:

Fiscal and trade deficits have eaten into official foreign currency reserves, figure (35).



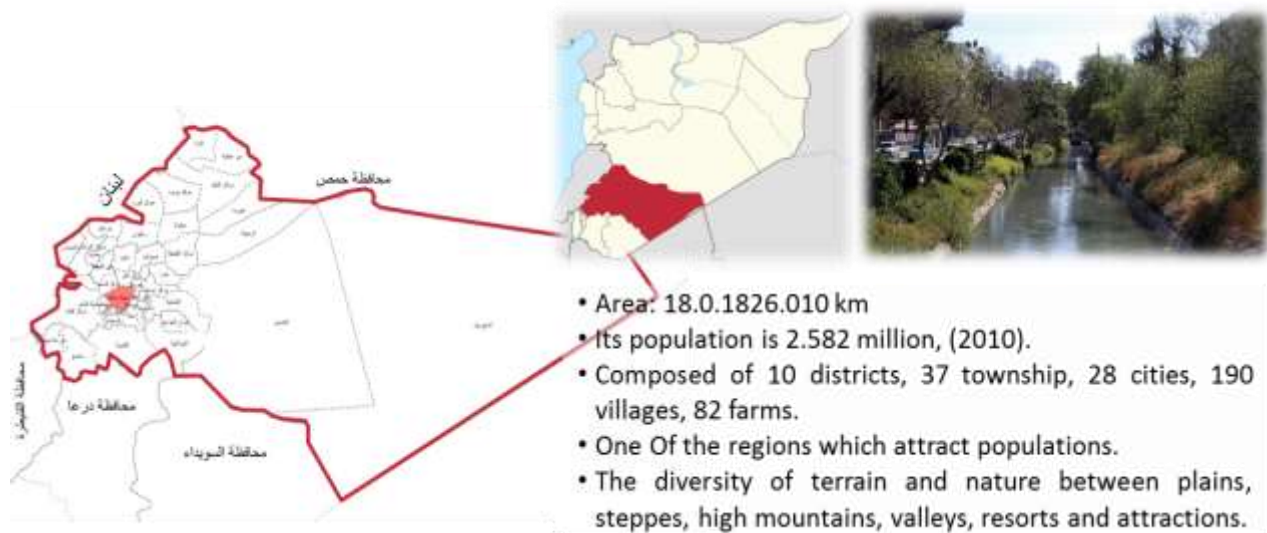
A: consumer price index and exchange rate (SP to USD) B: Inflation

35. Figure Consumer prices and exchange rates

5- Vulnerability & Spatial Development Study of Rural Damascus:

The countryside of Damascus was chosen as a case study because it is of great importance and is associated with Damascus, the capital, and is one of the areas attractive to the population, but suffers from developmental weakness as well as the deterioration of the environmental reality, as it is one of the most suffered during the Syrian crisis.

Will examine aspects of vulnerability where, sources, resources potential, and strategies to be followed by the development to achieve comprehensive spatial development.



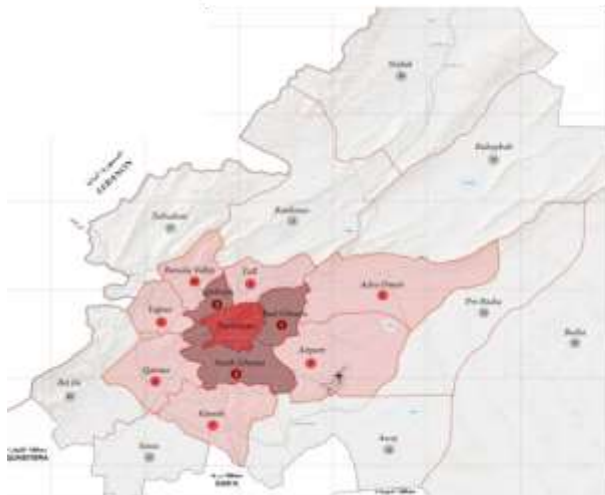
Map 2 Rural Damascus map

5-1 Regional Planning Project for Rural Damascus 2012:

The Government, represented by the Rural Damascus Governorate and the State Planning Commission, adopted a long-term local development vision until the year 2025.

Directions	Problems
<p>(Quality and sustainable regional development). Protection and development of natural resources and areas. Balanced development: It depends on the multipolar system and the restoration of social justice. Urban development: Damascus and its surroundings and organizational charts. Road network development: transport and regional services. The balance between investments, economic development and environmental protection.</p>	<ul style="list-style-type: none"> • Environmental problems: degradation of agricultural land, pollution, water shortage and desertification. • Social and spatial disparity. • Linear extensions and extensions. • Weak economic development and widespread unemployment. • All types of pollution due to industry.

4. Table local development vision until the year 2025 for Rural Damascus



Proposed regional division (sub-regions)

The governorate was divided into 19 sub-regions.

East of Ghouta, south of Ghouta, Qodsia, Tall, Adra-Dameer, Airport, Ksawah, Qatana, Yafour,

Barada valley, Rankus, Rehebeh, Badia,

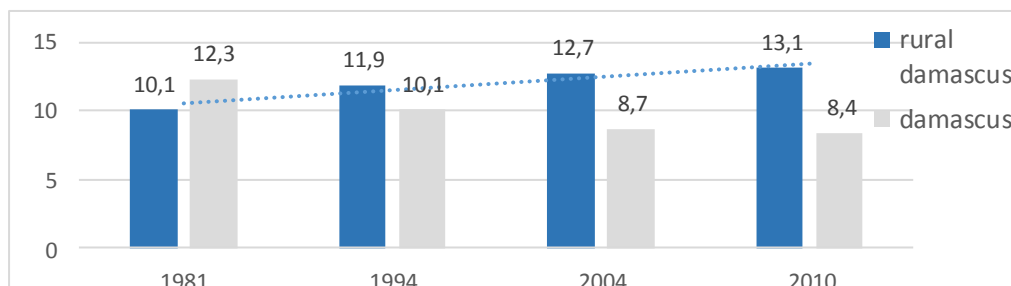
The area surrounding Damascus was found that its the center of attraction and population concentration

3. Map proposed regional division in Rural Damascus

6-2 The main sectors in rural Damascus:

6-2-1 Social sector:

- **Population Sector:** It is one of the most attractive provinces for the population as a result of surrounding the capital Rapid and uncontrolled growth due to natural population growth and large migration flows, Suffers from imbalances in the spatial distribution of the population.



36. Figure Population in Rural Damascus and Damascus

- **Housing and Urbanization Sector:** After monitoring, rural towns have great potential for future urban growth. It was found that all urban communities moved from agricultural activities to service and industrial one in the areas closest to Damascus.

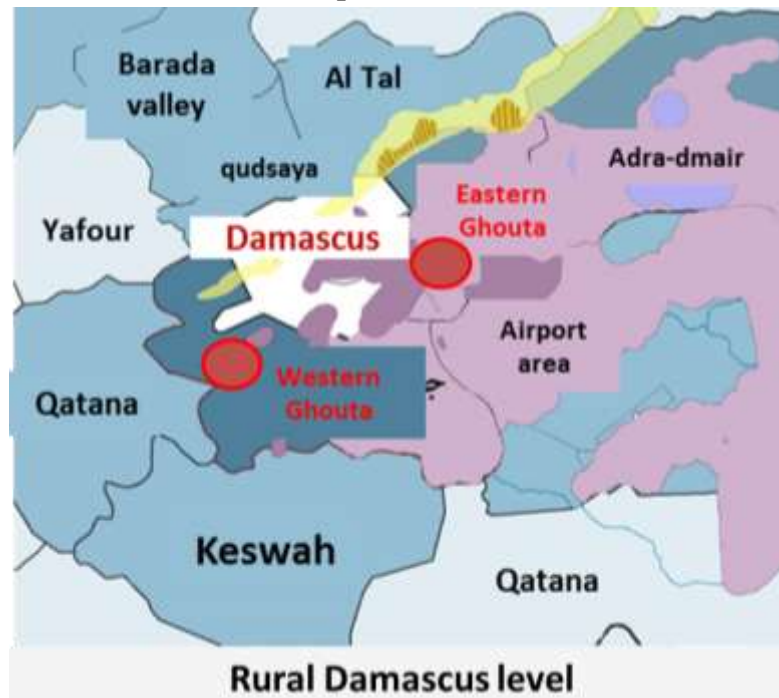
20% of the rural population reside in Slums.

- **Health sector:** The governorate suffers from imbalances in the spatial distribution of hospitals and beds according to sub-regions. The rapid and uncontrolled population growth in the governorate has put pressure on health services and the growing demand for them.

Ans as a response to the Syrian crisis in the health sector, field hospitals were established in some areas,

The name of Ghouta Damascus has been associated with greenery, the beauty of nature and the fertility of the soil, and its one of the most Syrian attractive areas for visitors in the summer, this is no longer since the outbreak of the Syrian crisis, Ghouta, with its eastern and western sides, is one of the most bombed areas in Syria, and the countryside is almost empty, with residents moving from a completely disastrous area to a less disastrous one.

- Thus, Ghouta was one of the first areas in Syria to establish field hospitals to help the wounded and wounded.⁴¹
 - We noticed The lack of resources in field hospitals, as a result of the siege on the region.
 - In addition to the lack of medical cadres due to fear of doctors and their migration outside the country.
 - Besides power outages also affect work and medical supplies in the hospital.⁴²
- Figure (37) shows some field hospitals situation.



Map 4 field hospitals distribution in rural Damascus

⁴¹ واقع المستشفيات الميدانية في الغوطة الشرقية، موقع انترنت، كانون الأول، 2012.

⁴² قلة إمكانات المشافي الميدانية تزيد المعاناة بريف دمشق، موقع السورية نت، تشرين الأول 2014.



Figure 37 field hospitals situation in Damascus Countryside

- **Education:** Students' enrollment in educational institutions is weak, with child labor and dropout.

5-2-2 Economic sector:

- Economy and labor market sector: The annual growth rate of the labor force (4.16%) during the period 1994-2004 far exceeded the population growth (3.28%).
- The unemployment rate was 8.9% in 2004.
- Weak contribution of agriculture by 17.56% of the total GDP and industry by 26.26%.

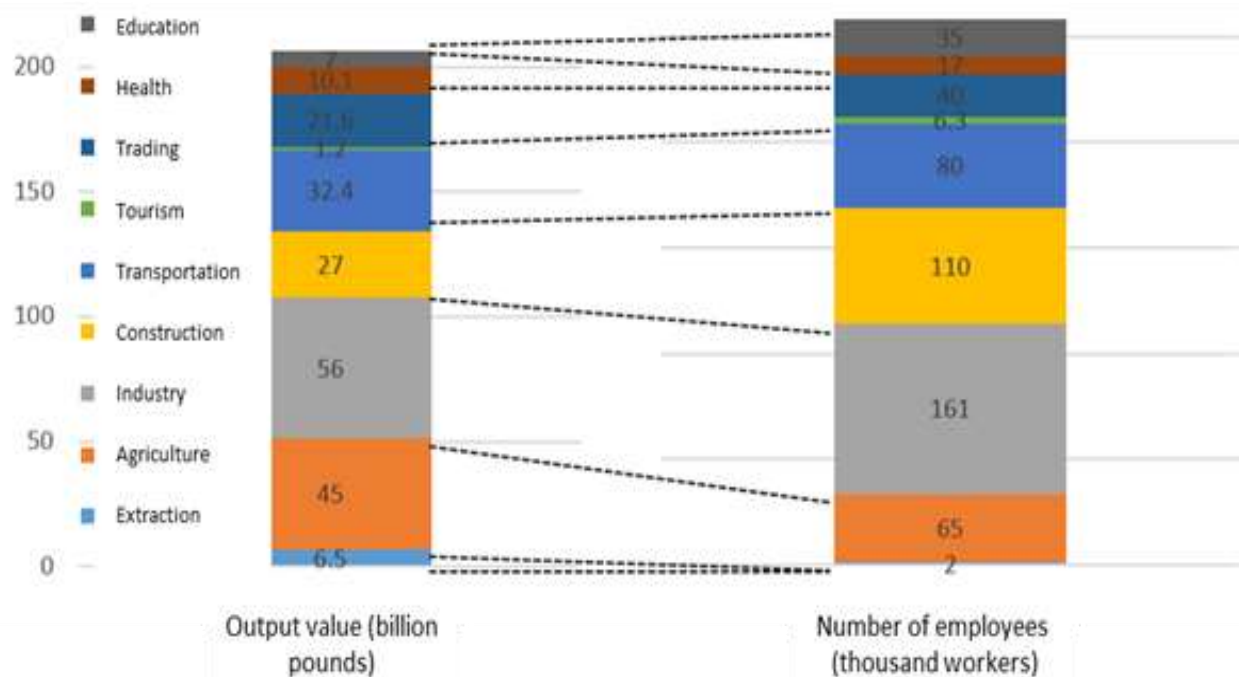


Figure 38 The composition of GDP in Damascus countryside

5-2-3 Natural & environmental sector:

- There is a great diversity in the environment from the mountains to the plains and the desert.
- The cost of deterior
- ation in Syria has increased by 6.6% over the past ten years.
- The environmental situation in rural Damascus is highly sensitive (shortage of drinking water, low groundwater levels due to drought, low production capacity and desertification, environmental loads and significant depletion of ecosystem components, pollution).



Figure 39 The regional environmental nature of Damascus countryside

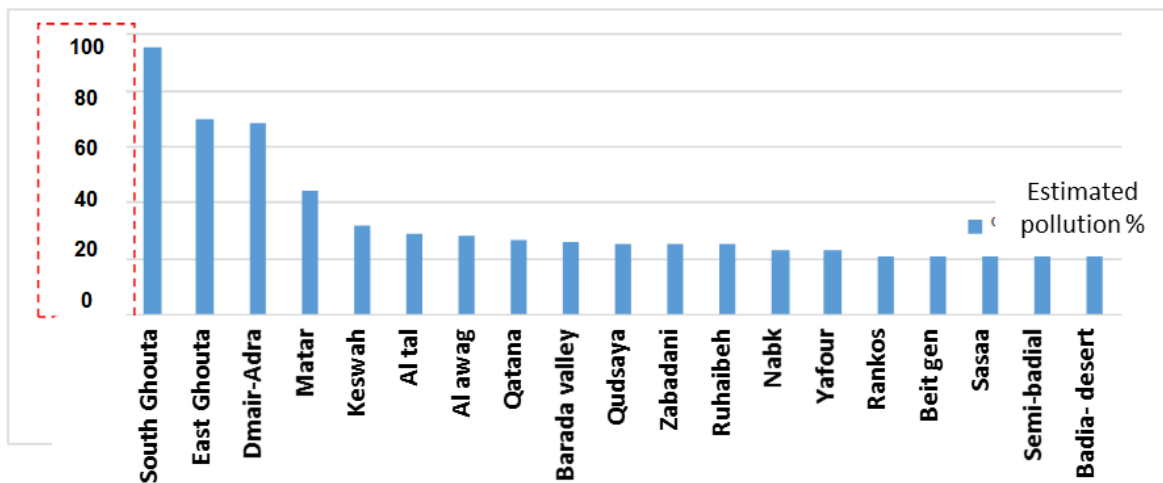


Figure 40 Estimated pollution % in Damascus countryside

Based on the previous review of the most important sectors in the governorate of Damascus countryside, we note the concentration of population in (sub-regions east and south of Ghouta) closest to Damascus, and the acquisition of the largest number of services as well as environmental degradation, therefore it represents the center of gravity of the countryside.

And therefore the study will move to review the most important data Focus on the sub-region of Eastern Ghouta, and then we can propose the most important development strategies.

5-3 A detailed study of the Eastern Ghouta sub-region:

Ghouta is directly linked to the lives of its inhabitants and in Damascus, in addition to its direct link with the Barada River and organizing the exploitation of groundwater and soil, and to attract the population and events, which carried additional burdens.



Figure 41 Nature of Eastern Ghouta sub-region

5-3-1 Population sector:

The eastern and southern sub-regions of Ghouta constitute a large reservoir of the population, together accounting for more than half of the population.

The Syrian crisis has led to a demographic change represented by movements of asylum and internal displacement, changes in the population pyramid, weak social cohesion, and consequently changed population indicators and their spatial distribution.

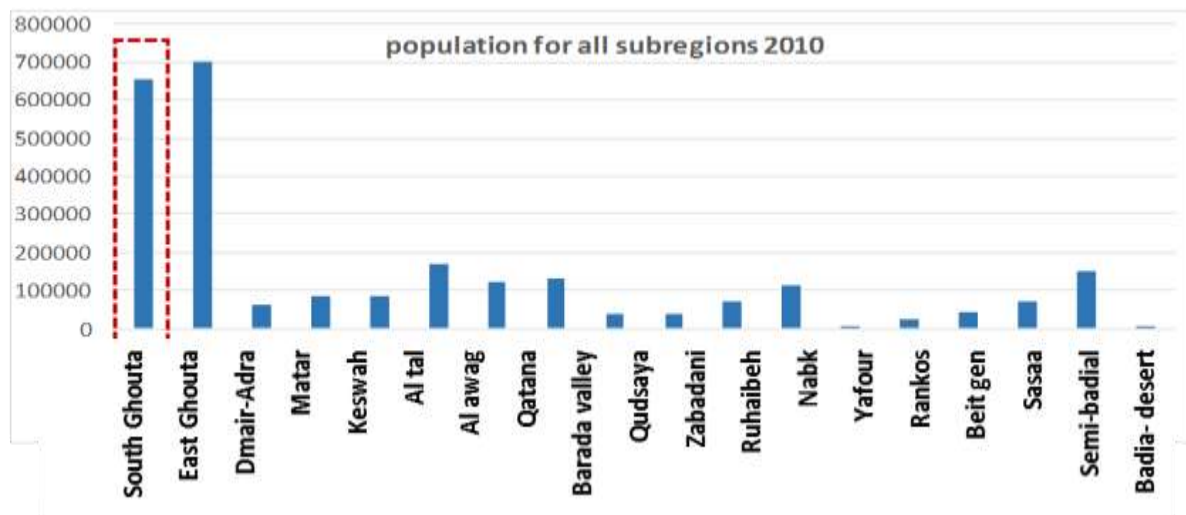


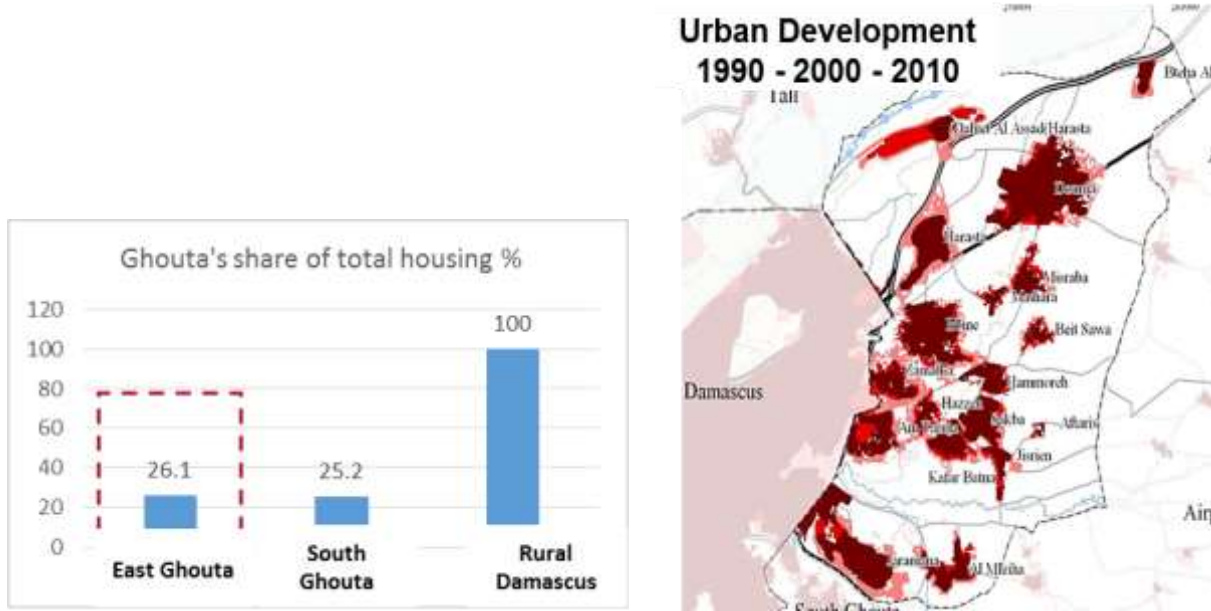
Figure 42 Population in Rural Damascus sub regions

5-3-2 Housing and urbanization sector:

(26.1%) of the number of housing units concentrated in Eastern Ghouta.

We note the increasing urbanization at the expense of agricultural land, and the spread of slums by 20%.

The proportion of future stock of housing (24%) of the area of the master plans, but its insufficient.



Map 5 Housing and urban development in South Ghouta

6-3-3 Medical Sector:

East and south of Ghouta sub-regions account for most health services.

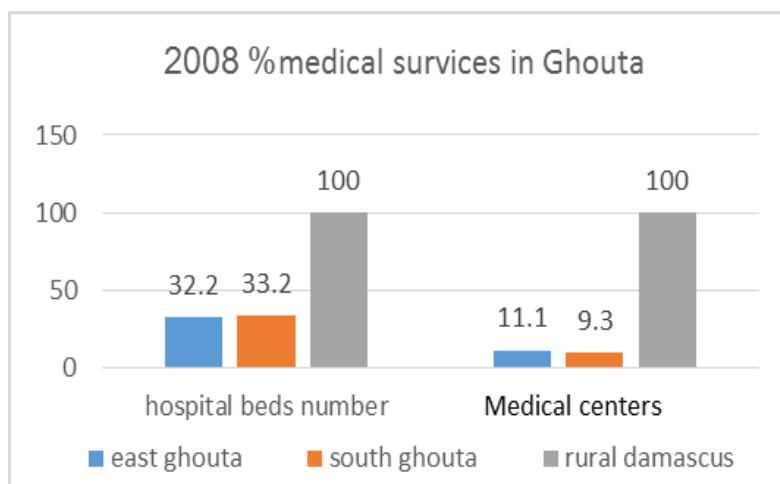


Figure 43 Medical sector in Ghouta

5-3-4 Education Sector:

Accounts for a large share of children and students classrooms.

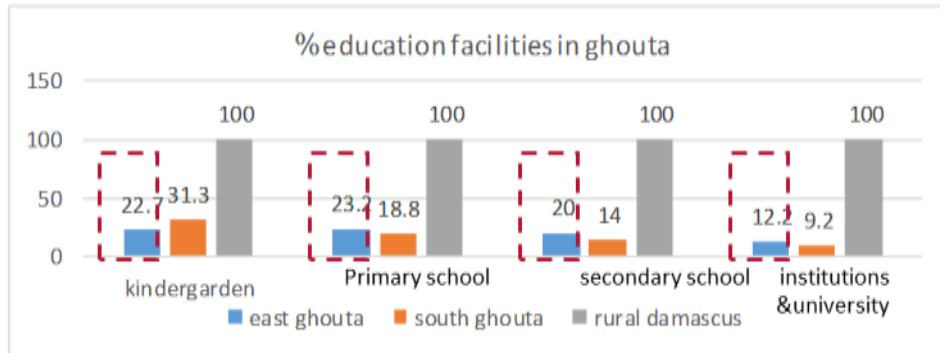


Figure 44 Education sector in Ghouta

5-3-5 Land use in Eastern Ghouta:

Uses in the sub-regions vary from natural lands, forests, agricultural lands, urban areas, and rangelands, according to the first-level division of uses.

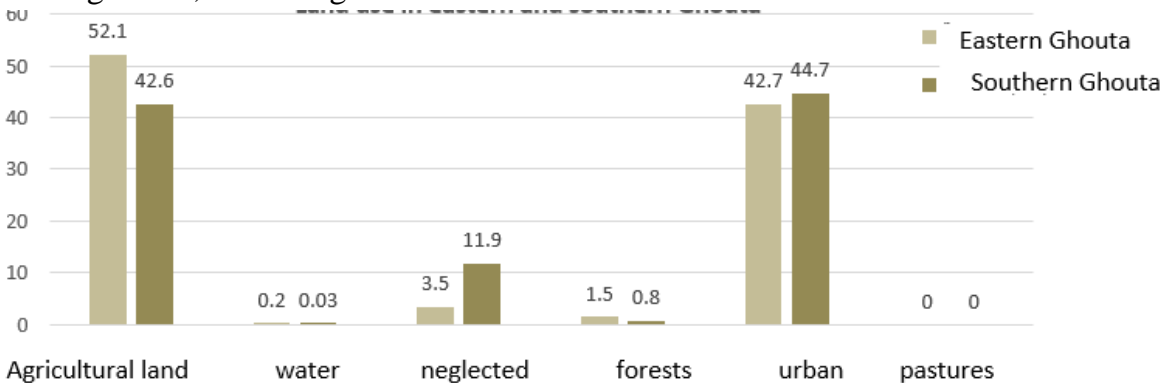


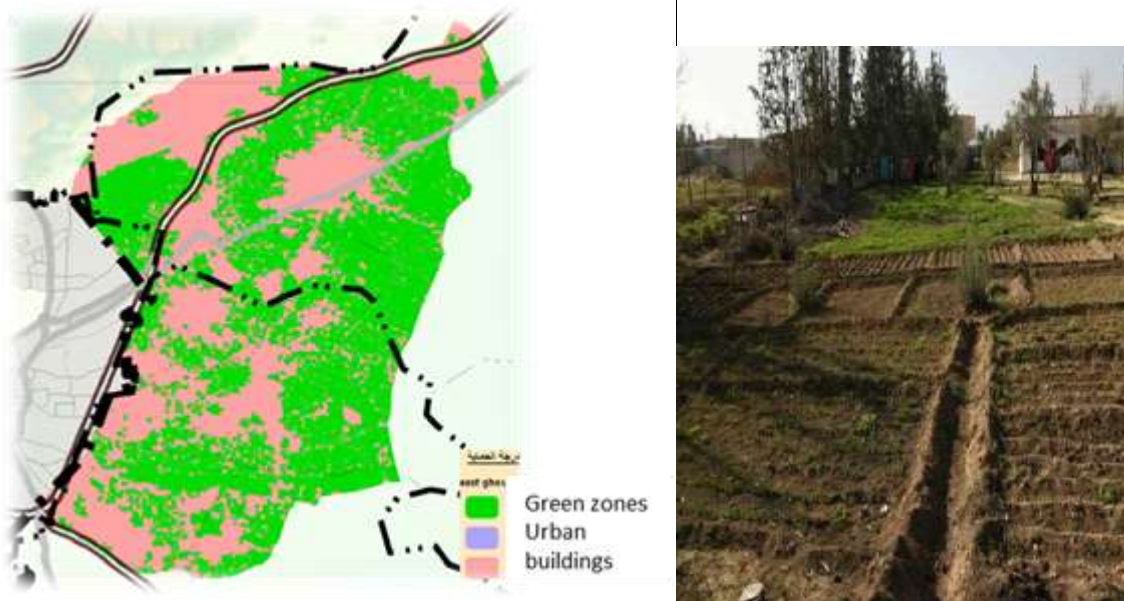
Figure 45 Land use in Ghouta

5-3-6 Labor and Economy:

The sub-regions account for a high percentage of the total labor force exceeding 53%, but employment opportunities are relatively insufficient due to the high population density in them.

5-3-7 Agriculture Sector:

Based on the degrees of protection adopted in the agriculture report, we find a classification of sub-regional lands according to all factors (productivity, stability, length of growth, decline, and land use).



Map 6 land use and agriculture in south Ghouta

5-3-8 Natural environmental sector:

Pollution indicators indicate high environmental depletion and cumulative effects from several particular sources. The Ghouta environment suffers from a variety of forms of pollution.

- Low quality of the environment ..
- Additional environmental impacts, severe pollution and depletion of resources in the event of crises and wars should be noted.
- The predominant pollution in Ghouta is natural pollution, salinization.

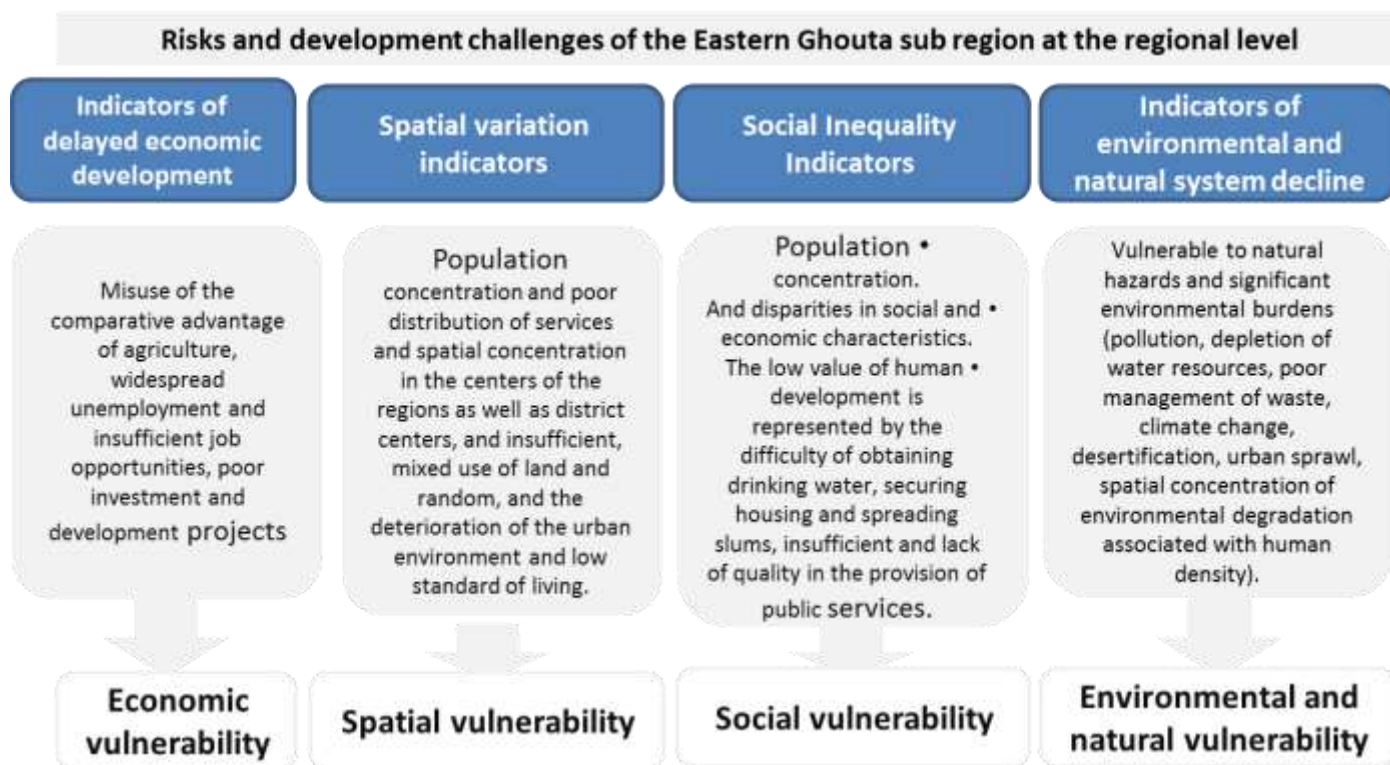


Map 7 Estimated pollution in Rural damascus

5-4 Conclusion from the case study:

From the previous review, the research identified the main risks and development challenges of the sub-region, which can be divided into:

- **Social Inequality Indicators**
- **Spatial variation indicators**
- **Indicators of delayed economic development**
- **Indicators of environmental and natural system decline.**



So as a result: The Eastern Ghouta sub-region suffers from socio-economic and spatial fragility, primarily due to natural hazards, making the effects overlapping on all sectors, whether economic, urban or spatial. The characteristics and components of the sub-region are sensitive to the concentration of population, inadequate employment opportunities, large population attraction, slums, and high pollution of water, soil and air.

5-5 Key objectives and proposed development strategy:

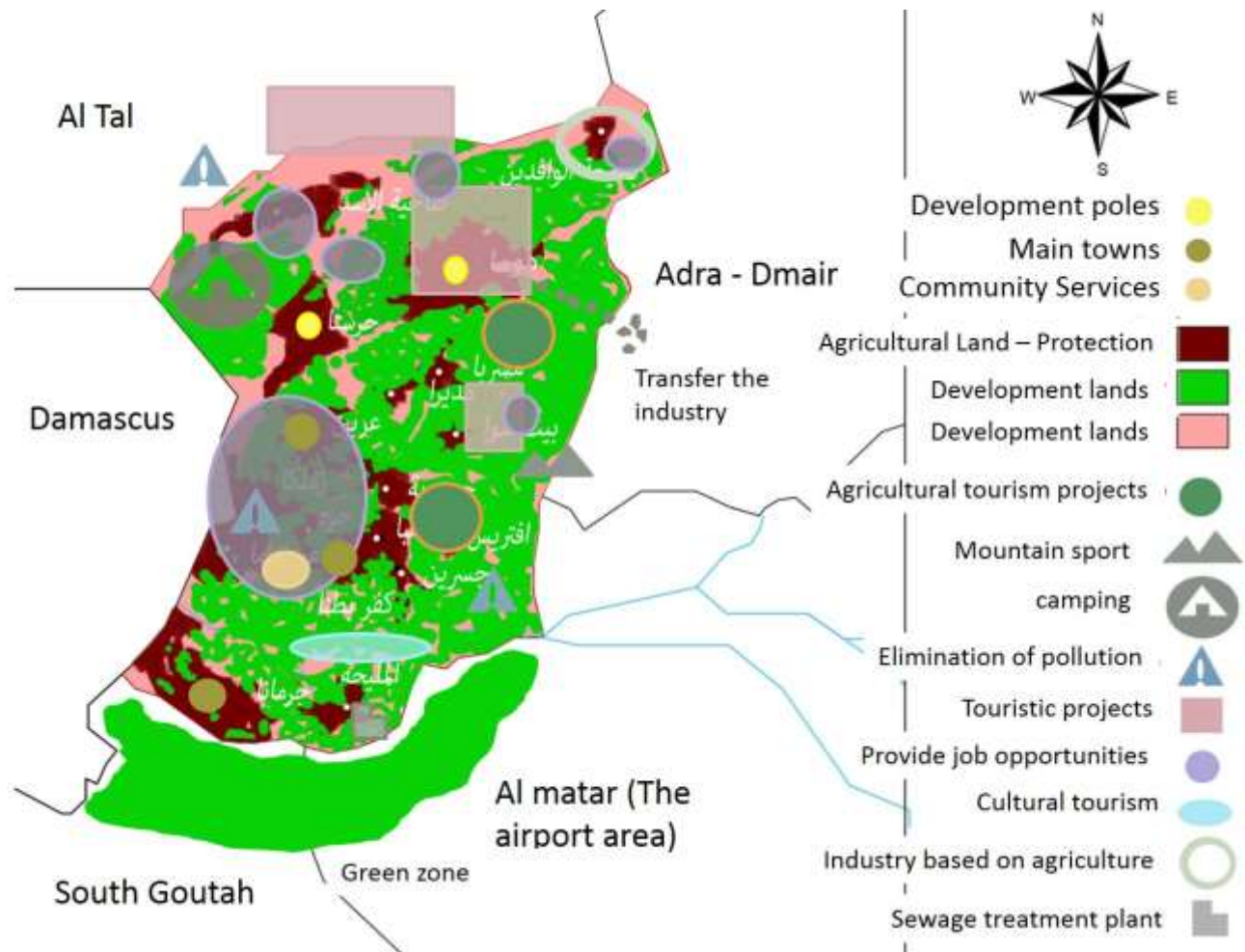
- Preserving existing agricultural lands from urban sprawl.
- Raising the efficiency of basic services provided to the population.
- Developing economic establishments and industries and encouraging investments.

- Provide incentives to the private sector to participate in the development process.
- Integration of different activities.
- Ensure efficient use of available resources.
- Take preventive measures with regard to industrial and sanitation.
- Raise the level of human development and adopt a strategy to improve the quality of life.
- A balanced redistribution of population and activities based on the achievement of social and spatial justice ...
- Strengthen resilience, develop response plans and increase resilience.
- Combat vulnerabilities of all kinds through the development of regional spatial strategies and development plans to mitigate vulnerabilities and increase resilience.

The development strategies proposed by the research according to the analytical framework will raise the indicators according to the following:



The research based on the data related to the sub region, give suggestion plan for the development of case study area (map 8).



Map 8 suggestion plan for the development of case study area.

5-6 The Results:

Based on the definition and characteristics of a vulnerable region (exposure, sensitivity and adaptability), and the indicators considered, we conclude that all vulnerable regions share common characteristics:

- **Concentration and population growth**, which led to consequently continued migration from rural to urban areas (so spatial vulnerability).
- **Urbanization and population concentration mean depletion of natural resources**, making ecosystems more sensitive to external risks.
- All the above indicators indicate the spatial vulnerability of the region, which is often associated with the social and economic vulnerability of its inhabitants, represented by unequal distribution of resources, low levels of human development and deprivation of basic needs (**internal vulnerability / sensitivity factors**).

- The exposed region of natural risks (such as climate change) or any risks (such as population growth, etc.) makes it fragile as a result of developments and the effects of losses on the rest of the region components, may turn into a disaster if accompanied with great sensitivity and poor response capacity and resilience and adaptation.

5-7 The Recommendations:

- It was necessary for **architects and city planners** to adopt the concept of vulnerability and analyze its levels and causes to know the development challenges facing any region or region.
- Vulnerability analysis should be based on sound indicators and measures that include social, economic, environmental and spatial dimensions.
- The need to develop frameworks for measuring and assessing the fragile reality at the national, regional, urban and community levels.
- Conducting a number of detailed studies and researches that address the types of vulnerability and its measures because of their importance in digitally assessing the reality of societies and countries.
- Strategies to address vulnerability in all sectors of fragile regions should be developed and included in adaptation plans.
- The need to evaluate the proposed indicators and add new ones in the event of wars and conflicts as a result of the worsening of the risks and sensitivity towards them, and thus evaluate development strategies and reformulate them in line with the changes taking place.

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