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FIG Congress 2018

Smart Cities, Concept and Coverage

Dr. Aziz Sisman (Turkey)

Ondokuz Mayıs University
Department of Geomatics

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Smart City

Smart cities concept is a new fashionable approach in last two decades.

It includes people, information and communication technologies, economy, natural environment, infrastructure, lifestyle and public administration etc.





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Smart City

Smart cities can be accepted a new form of sustainable development in urban areas.

It represents a new city model which aiming to improve quality and performance of urban service for better interaction between citizens and government.



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Population of the World

There are many information and communication technology applications around the World. Main goal of these projects is to improve the life quality of citizens.

The source of the world is limited but the human population is getting increased all around the world. The governments have to provide all needs of the citizens such as food, housing, security ect.



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Population of the World and Major Areas, According to the Medium-Variant Projection (UN 2015)

Major Area	Year / Population (millions)			
	2015	2030	2050	2100
World	7 349	8 501	9 725	11 213
Africa	1 186	1 679	2 478	4 387
Asia	4 393	4 923	5 267	4 889
Europe	738	734	707	646
Latin America and the Caribbean	634	721	784	721
Northern America	358	396	433	500

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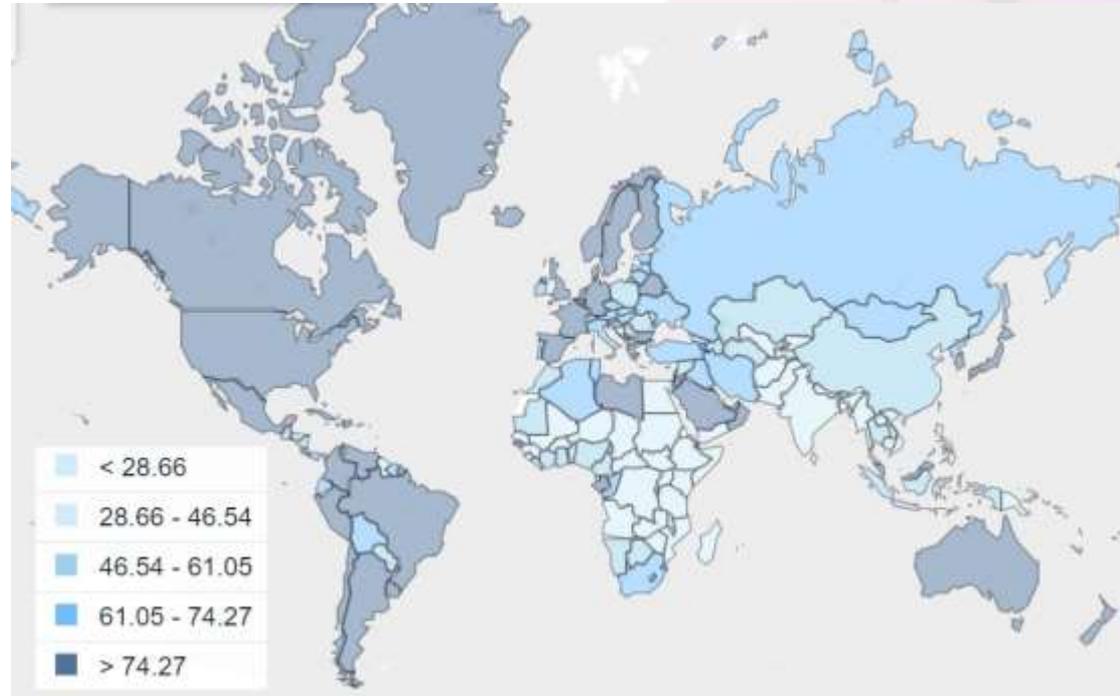
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The population living in the city is also increasing around the world. According to the United Nations, by 2050, 66% of the world's population will live in urban areas (United Nations, 2015a).



Urban Population (% of total) (World Bank 2016)

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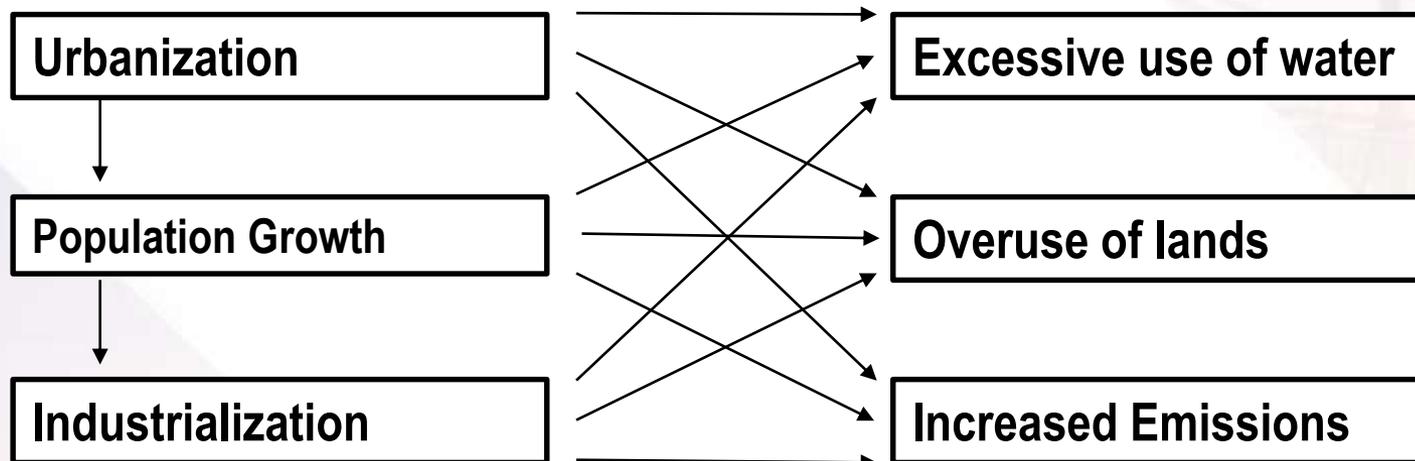
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Basic Urbanization Problems



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Uncontrolled Urbanization Problems



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Urbanization

Despite representing only about 2% of the geographic space and accommodating over 50% of the world population, cities today produce 80% of greenhouse gas (GHG) emissions and consume 80% of the world's resources



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Smart City

According to the estimation of international organizations;

Urbanization will going on and more and more people will live in urban area. The main question how will we provide the needs of the people living in urban area and how will we protect the natural sources to deliver the next generations.

The answer of these question is depend on smart cities and sustainable applications.





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The increase in people living in urban areas, bring with decrease in people living in rural areas, thus it giving rise to extensive challenges regarding air pollution, congestion, waste management and human health (OECD, 2012).

The European Union (European Commission, 2014) and United Nations (2016) have set ambitious climate and energy targets for the coming years, there is an urgent need to develop smart solutions to overcome the challenges of urbanization.



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What is Smart City?

After two decades, the smart cities notion is still in infancy. There is not any commonly agreed definition of smart cities, but its popularity is raising.

In European Union's (2011) view the smart city concept supports the idea of environmental sustainability as its main aim is reducing greenhouse gas emissions in urban areas through the deployment of innovative technologies.



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Definition Smart City

An urban centre of the future, made safe, secure environmentally green, and efficient ... (Hall et al. 2000)

A city that actively embraces new technologies seeking to be a more open society where technology makes easier for people... (Partridge 2004)

A city that uses ICTs to make the critical infrastructure components and services of a city administration, education, healthcare, public safety, real estate, transportation, and utilities more aware, interactive, and efficient. (Belissent 2010)

An ideal form to build the sustainable cities of the 21st century, in the case that a balanced and sustainable view on economic, social, environmental and institutional development is realised. (Yigitcanlar 2016)



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Literature on Smart City

Sustainability

Liveability

Productivity

Governance

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Smart Cities

Technology

Policy

Planning

Big Data

Sustainable

Liveable

Productive

Governance

Environment

Energy

Social Life

Economy

Land Use

Emergency

Transport

Other...

People

Smart City Applications

Around the world two types smart cities applications is appear.

One type of is completely newly built cities, we can see it in UAE Masdar City,

Other type cities are renewed for current infrastructure systems, such as Singapore, South Korea, Holland, Spain, Denmark and Austria, etc.



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Smart City Applications

Smart cities are a global phenomenon today, there are more than 150 smart city projects over the world.

The global market for smart city solutions and services is expected to grow from \$ 40 billion in 2017 to \$ 94 billion by 2026 (Pyzyk, 2017).

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Conclusion

Smart city projects depends on technology, policies, big and live data and also accurate spatial data.

The main aim of smart city projects is to provide better life quality for the citizens.

But, the target of the smart city projects must be sustainable cities to keep limited resources and also to keep the World to deliver the next generations.





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Thank You

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