Using ITU KPIs
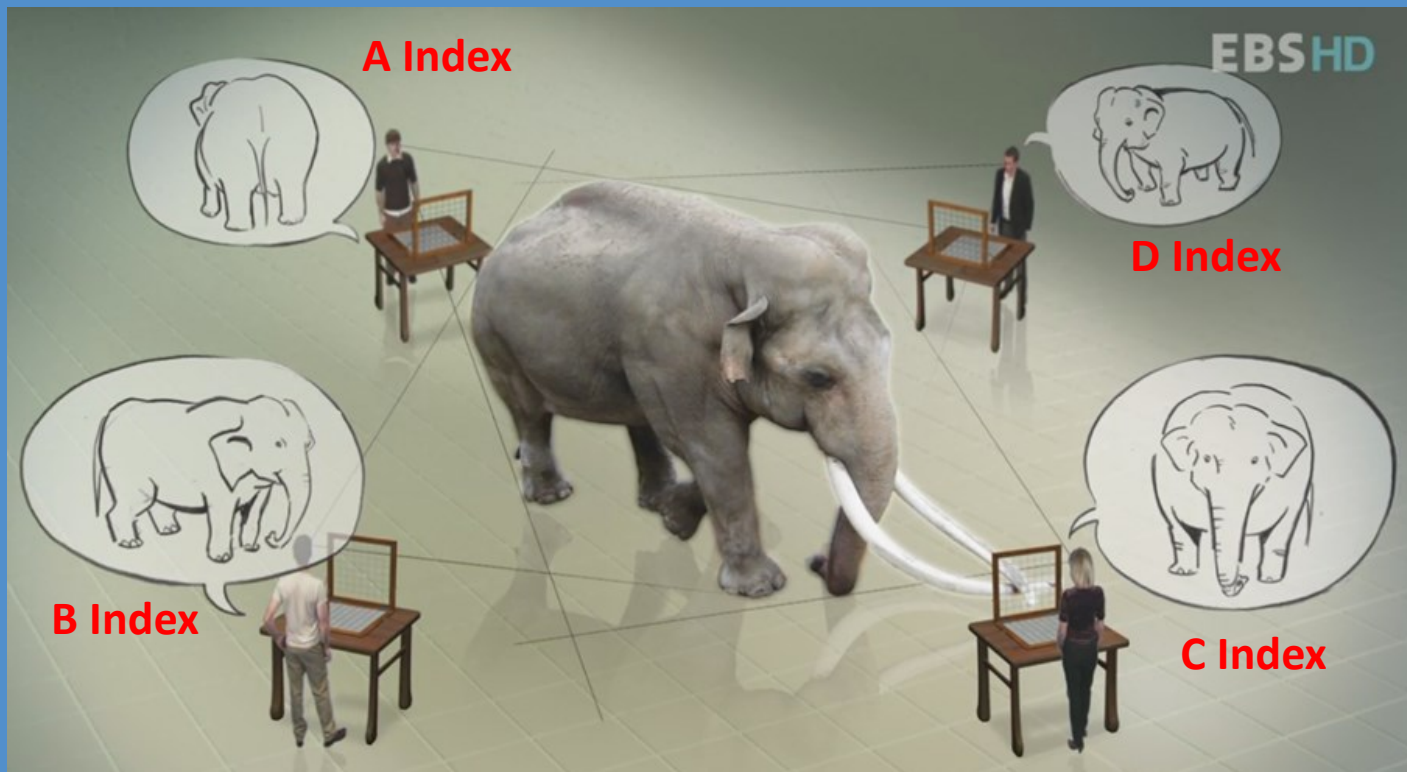# (to Assess Smart Sustainable Cities)

Chaesub Lee
Director
Telecommunication Standardization Bureau
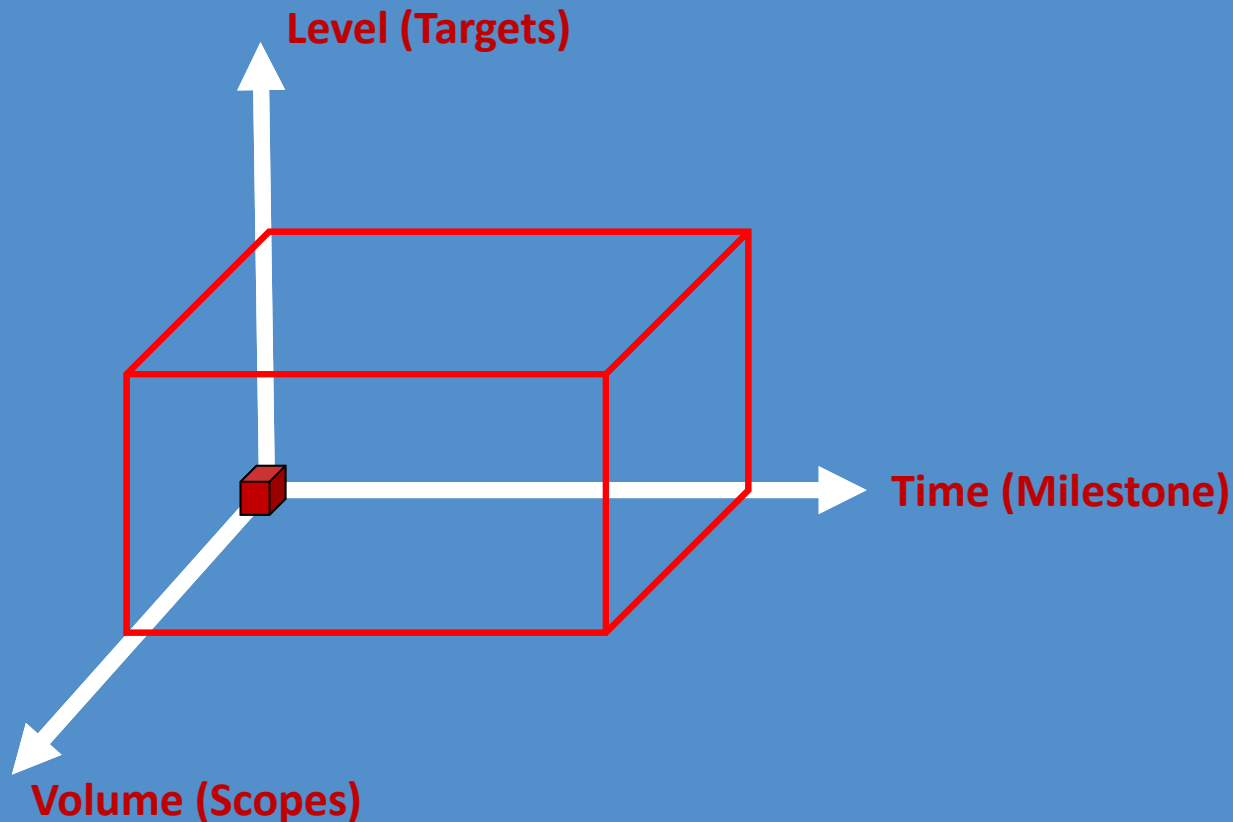
14 December 2016

ICTs

- **Very complicated issue: Information + Communication + Technology**
- **Subjective vs Objective: QoS/QoE vs Network/Service Performances**
- **Quantity not exactly and equally represent Quality**
- **Measure ICTs?**

ICTs >>
Index {A+B+C+D}

Why needs ICT measurement?

- **Measurement means distance by {time, scope, level …}**
- **Useful for identifying the current status and difference with Objectives**
- **Important grounds for assessing performance result (past and future)**
- **Identifying detailed elements need for adjustments and improvements**

Level (Targets)

Time (Milestone)

Volume (Scopes)

Tool for
- **Planning and Designing**
- **Setting Goals**
- **Quantify elements**
- **Assessment ground**
- **Feedback for future plan**

Cities....

By 2050, it is expected that **66%** of the population in the world will be living in urban areas

Cities contribute to up to **70%** of the total greenhouse gas emissions.

Half the world's population will be online in **2018** and by the end 2018, **51.1%** of the population (3.82 billion people) will be using the internet

ICT as a key enabler

Of today's **28 mega-cities**, **16** are located in Asia, **4** in Latin America, **3** each in Africa and Europe & **2** in Northern America.

By 2030, the world is projected to have **41 mega-cities** with more than **10 million inhabitants**
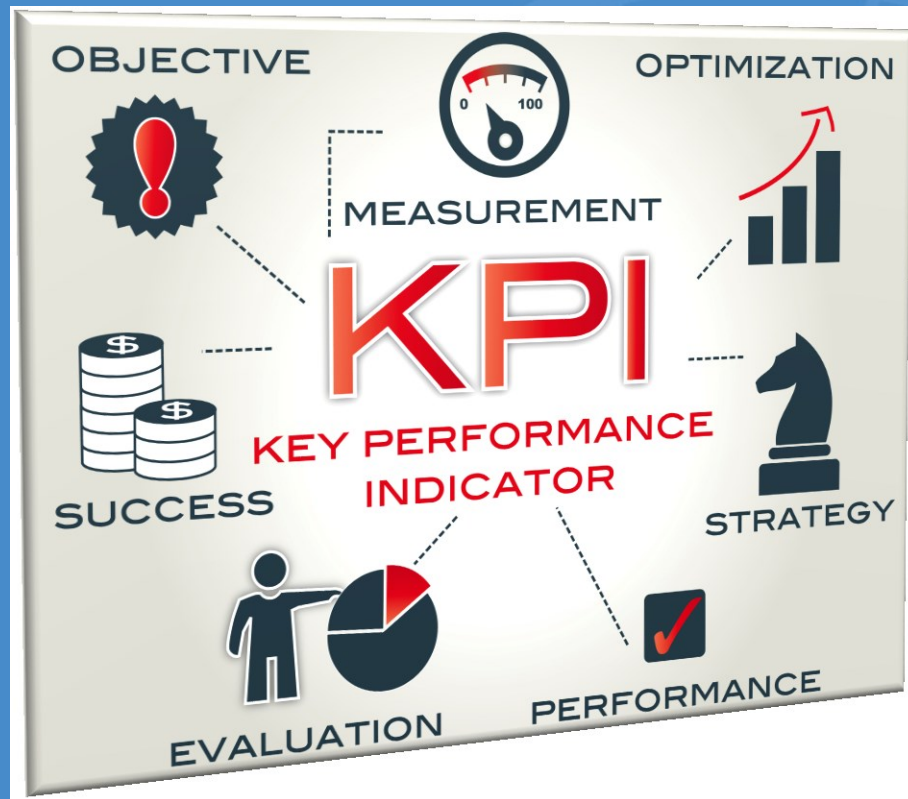
Tokyo
Population 2030:
37 million

Delhi
Population 2030:
36 million

Mexico City
Population 2025:
24.6 million

How do we shape Smarter and More Sustainable cities ?

Get Ready to Innovate Today for a Sustainable Tomorrow!

You can't manage what you don't measure!

Show what data to collect
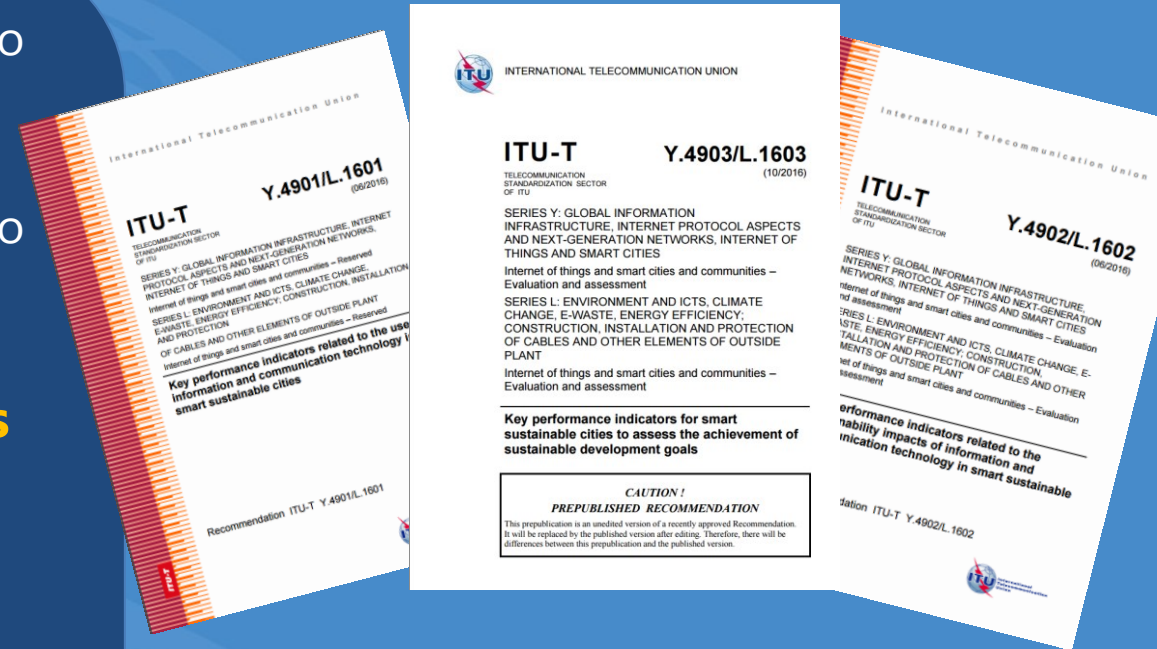
Standardize data collection

Show gaps in policy

Show areas for improvement

KPIs for Smart Sustainable cities help cities to achieve the

SDGs

ITU

ITU-T Recommendations on KPIs for Smart Sustainable Cities

- ITU-T Y.4901/L.1601 Key performance indicators related to the use of information and communication technology in smart sustainable cities

- ITU-T Y.4902/L.1602 Key performance indicators related to the sustainability impacts of information and communication technology in smart sustainable cities

- **ITU-T Y.4903/L.1603 Key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals**, is currently being revised based on the inputs of 16 UN agencies & programmes, international organizations and **cities**.
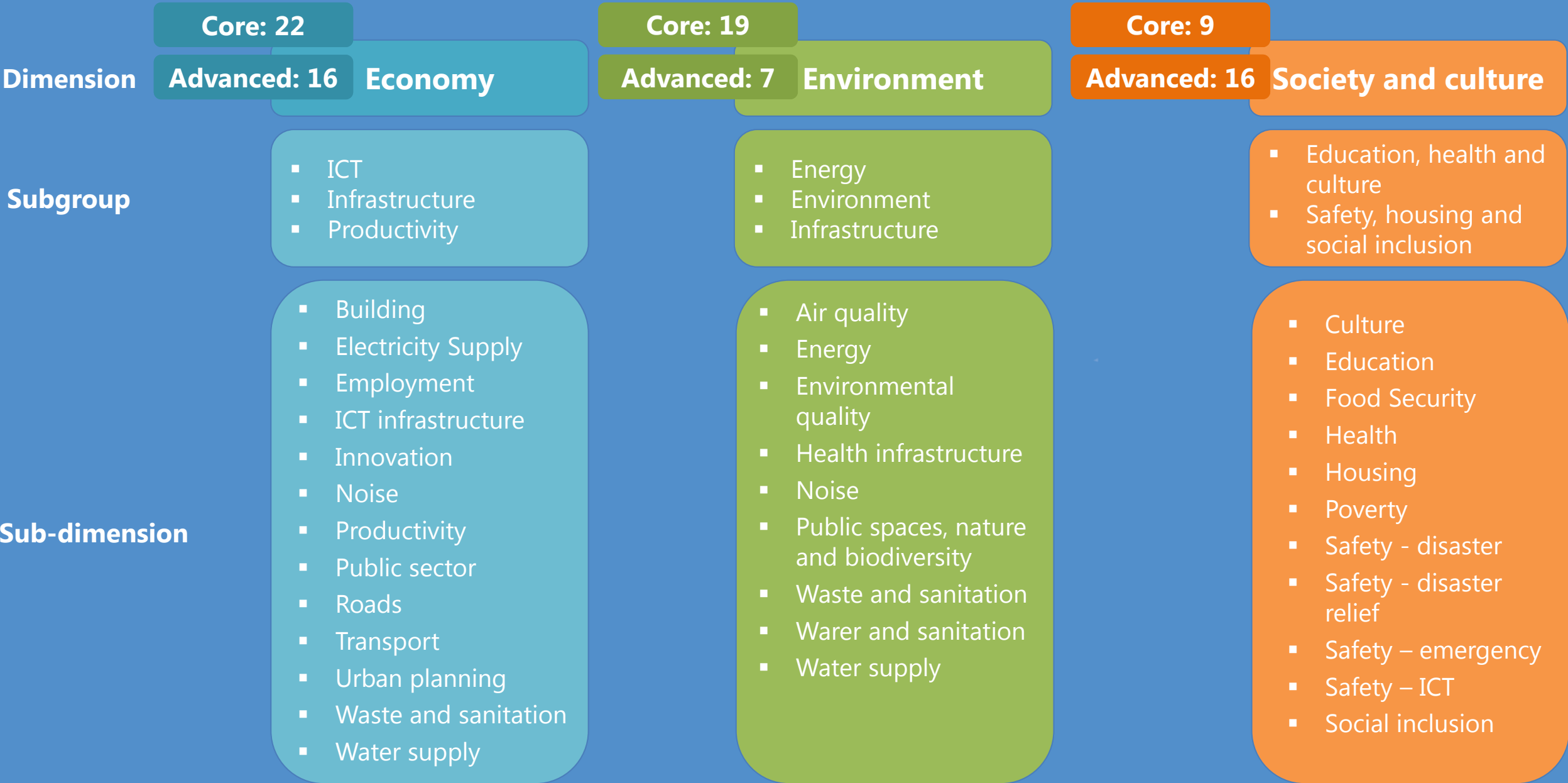
KPIs Principles

- **Comprehensiveness:** The set of indicators should cover all the aspects of SSC.

- **Availability:** The KPIs should be quantitative and the historic and current data should be either available or easy to collect.

- **Independence:** The KPIs in the same dimension should be independent or almost-orthogonal i.e., overlap of the KPIs should be avoided as much as possible.

- **Simplicity:** The concept of each indicator should be simple and easy to understand for the urban stakeholders.

- **Timeliness:** This refers to the ability to produce KPIs with respect to emerging issues in SSC construction.

KPIs structure

Dimension	Core: 22 Advanced: 16 **Economy**	Core: 19 Advanced: 7 **Environment**	Core: 9 Advanced: 16 **Society and culture**
Subgroup	▪ ICT ▪ Infrastructure ▪ Productivity	▪ Energy ▪ Environment ▪ Infrastructure	▪ Education, health and culture ▪ Safety, housing and social inclusion
Sub-dimension	▪ Building ▪ Electricity Supply ▪ Employment ▪ ICT infrastructure ▪ Innovation ▪ Noise ▪ Productivity ▪ Public sector ▪ Roads ▪ Transport ▪ Urban planning ▪ Waste and sanitation ▪ Water supply	▪ Air quality ▪ Energy ▪ Environmental quality ▪ Health infrastructure ▪ Noise ▪ Public spaces, nature and biodiversity ▪ Waste and sanitation ▪ Warer and sanitation ▪ Water supply	▪ Culture ▪ Education ▪ Food Security ▪ Health ▪ Housing ▪ Poverty ▪ Safety - disaster ▪ Safety - disaster relief ▪ Safety – emergency ▪ Safety – ICT ▪ Social inclusion

KPIs Project for Smart Sustainable Cities to Reach SDGs

- To support cities in the implementation and use of the SSC KPIs

- To test and verify the applicability of SSC-KPIs in several cities of the world.

- To develop a global **Smart Sustainable Cities (SSC) Index**.

11 SUSTAINABLE CITIES AND COMMUNITIES

Dubai

Montevideo

Singapore

Manizales

Valencia

Buenos Aires

and many others...

New ITU Report:
The Case of Dubai

ITU-T Study Group 20: Internet of things (IoT) and smart cities and communities (SC&C)

wtsa16
TUNISIA

Responsible for studies relating to IoT and its applications, and smart cities and communities (SC&C).

It includes studies relating to Big data aspects of IoT and SC&C, e-services and smart services for SC&C

Lead study group on

Internet of things (IoT) and its applications

Smart Cities and Communities (SC&C), including its e-services and smart services

IoT identification

Next SG20 Meeting: 13-23 March 2017, Dubai preceded by a
Forum on "Accelerating IoT for Smart Cities"
12 March 2017, Dubai, UAE

1956 2016
CCITT / ITU-T

Thank you!

More information

http://itu.int/go/tsg20
http://www.itu.int/en/ITU-T/ssc

tsbsg20@itu.int