

Localizing Urban SDGs Methodologies

Experiences from Tunisia



Samira Ouadday INS-Tunisia

Rue Ech-cham B.P 265 Cedex Tunis
Tél. : (+216) 71 89 10 02
Fax : (+216) 71 79 25 59
Site Web: www.ins.tn
Email : ins@ins.tn

Implementation of SDGs in Tunisia(1)

- Political coordination by two Ministries: Development and Foreign affairs
- Work is under way to constitute technical Framework for SDG's implementation
- First Voluntary National Evaluation (VNE) to be presented in 2019 at the High Level Political Forum



Implementation of SDGs in Tunisia(2)

- Civil society, private sector and government stakeholders are closely associated in SDG'S appropriation
- Reporting on the Data gap assessment: first step





Urban SDGs & Human settlements indicators : Tunisia Case



Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable



Data sources

- ✓ **National Statistic Institute** produce a part of information needed for urban SDGs
- ✓ Other Statistic data required are produced by **Public Statistic Structures**
- ✓ **Civil Society**: special domains

More than 10 agencies produce data for urban SDGs

Shortlist Agencies

1. Statistique Tunisie
2. Housing, Building and territory management Ministry
3. Transport Ministry
4. Local collectivities Ministry
5. Tunisian Environmental and sustainable Development Observatory
6. National Agency for Waste Management
7. Local municipalities
8.etc

Collaboration



République Tunisienne
Ministère du développement
de l'investissement
et de la coopération internationale



الجمهورية التونسية
وزارة التنمية والاستثمار
والتعاون الدولي



République Tunisienne
Ministère de l'Environnement
et du Développement Durable



Republique Tunisienne
Ministère de l'interieur



الجمهورية التونسية
وزارة الداخلية

الجمهورية التونسية
وزارة الشؤون الخارجية



الشركة التونسية
لل كهرباء والغاز
Société Tunisienne
de l'Electricité et du Gaz



الجامعة الوطنية للمدن التونسية



Fédération Nationale des Villes Tunisiennes

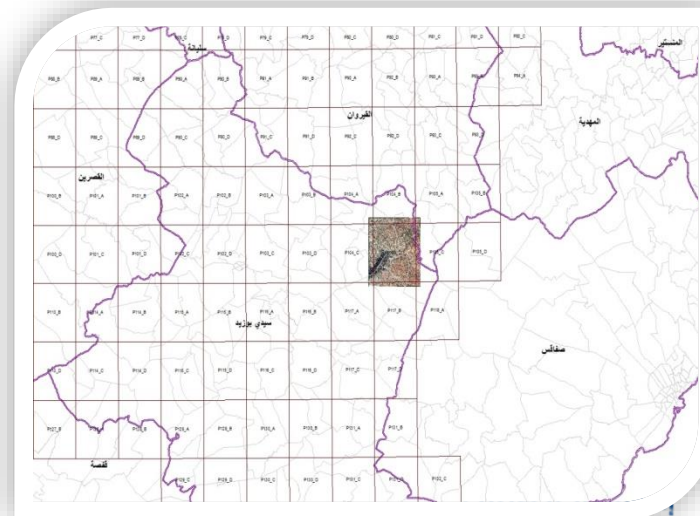
OBSERVATOIRE URBAIN MONASTIR



11 SUSTAINABLE CITIES AND COMMUNITIES



Monitoring Urban SDGs using Geospatial Information



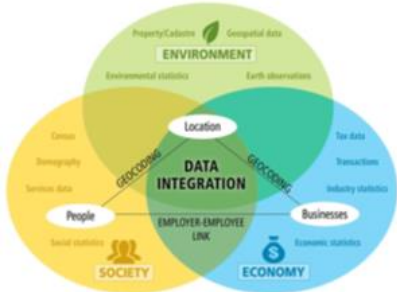
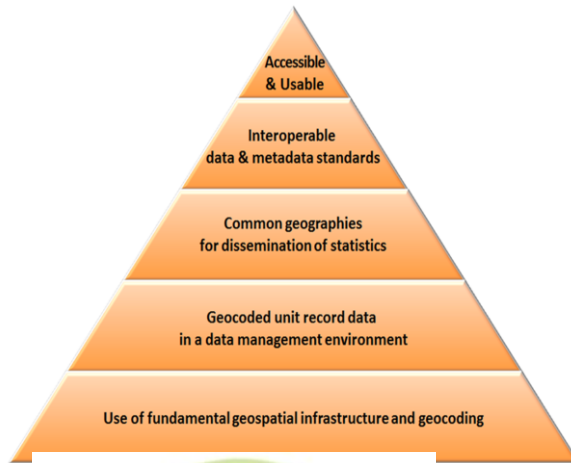
Background

Tunisian National Statistics Institute is :

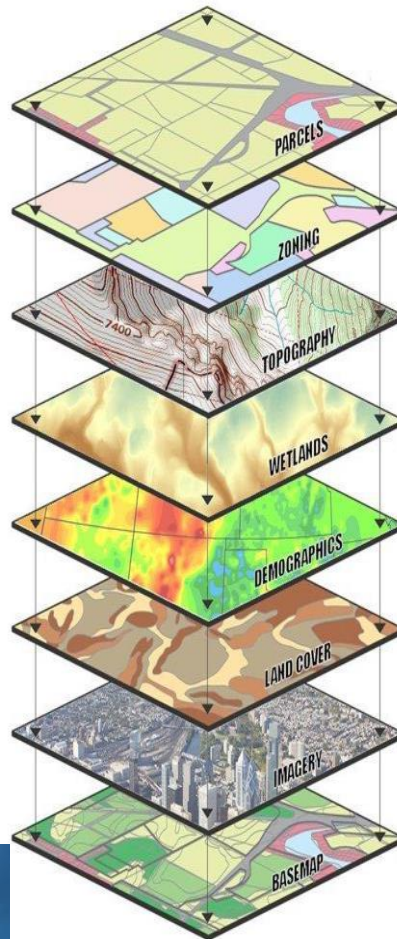
- **Strengthening** statistical production and dissemination by using geospatial methods
- Implementation of the **Global Statistical Geospatial Framework** in NSI's production
- Carry out **experiences** to decide about best practices in geospatial data use to **measure SDGs**

Geospatial Information in Monitoring Urban SDGs

The Global Statistical Geospatial Framework



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SDG 11 Indicators with a direct spatial component

11.2.1



Transport

11.3.1



Land Consumption

11.7.1



Public Space

Spatial Analysis

- New form of data collection
- New form of analysis



Using the Geospatial Information components to monitor Urban SDGs

SDG 11 Working



National Sample of Cities:

A consistent set of cities representative of Tunisian cities, to report on urban progress in a systematic manner at city level



Indicator 11.2.1:

Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities



Indicator 11.7.1:

Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities

Under Development

Geospatial Information for City boundaries

We Don't know the correct definition and identification of Cities YET

- Before, we utilized administrative definition
- Now, Tunisian territory is all communal classified and distinction between urban and rural areas is not feasible according to a well-established definition

Geospatial Information for City boundaries

- Urban SDG indicators are dependent of cities boundaries



We have developed our own
Methodology of cities delimitation

- Partnership with OECD, European
Statistic Institutes, ...



Adapt the “City” definition of EU to
the Tunisian case

Tunisian Cities Boundaries

Data

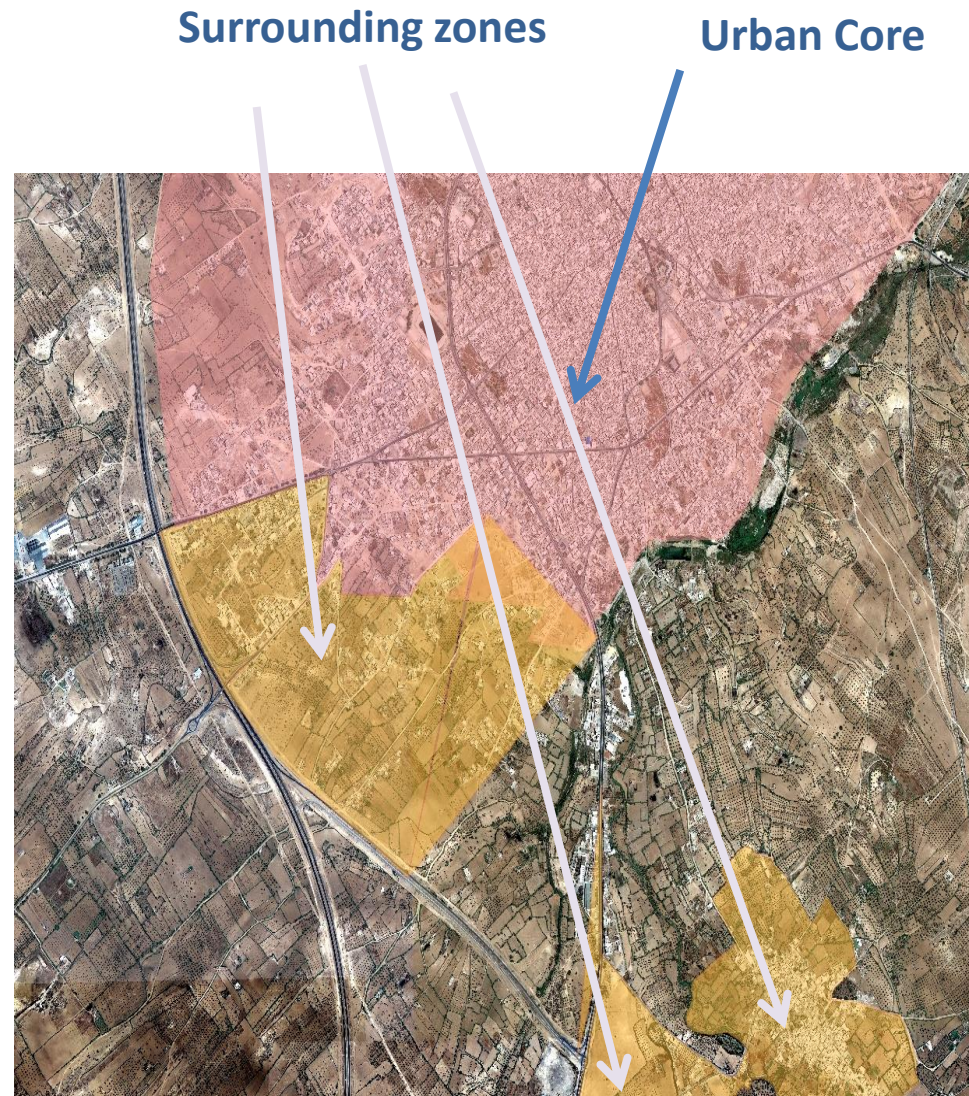
- **Google Earth Imagery** as baseline
- **Enumeration Area shape** (Census) for communal and non-communal zones
- **Statistics Data** (population data) at EA level



Tunisian Cities Boundaries

Method:

1. Location of densely populated Urban Cores
2. Associate less-populated surrounding territories: municipalities, and rural areas that are socio-economically tied
3. Encompass all of them to the urban core



List of Cities

National Sample of Cities

To report for urban SDG indicators:

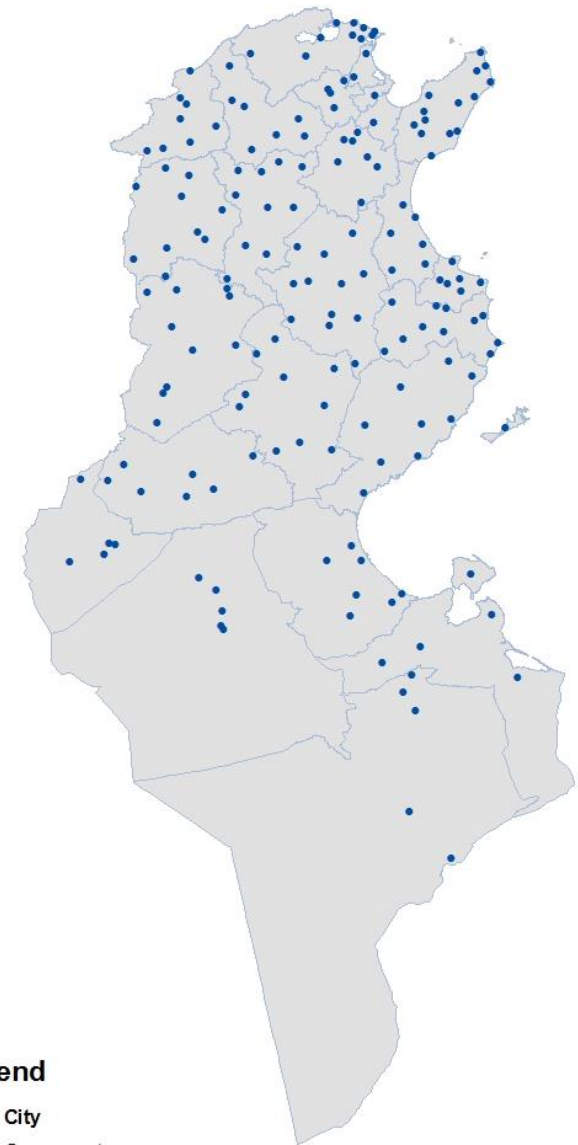
a consistent set of cities that is representative of the territory, geography and history of Tunisia

Method:

1. Identifying and compiling a complete listing of all the cities
2. Defining and localizing the selection criteria (population, household, area,...)

Région	Ville	Périmètre(km) de la ville	Area(km ²) de la ville	Population
Nord-Est	Tunis ville	312.45446398500	608.90969882500	2341180
Centre-Est	Sfax Ville	91.26363654450	160.61969782800	515725
Centre-Est	Sousse ville	137.46099507900	188.46824454400	495689
Nord-Est	Nabeul Hammame	128.56091721500	122.23266118000	225407
Nord-Est	Bizerte Ville	98.51418738220	91.71553030190	191092
Centre-Est	Moknine_Ksar Hlel	50.11204280280	44.78229823290	174611
Sud-Est	Gabes Ville	64.52123221810	137.14217125800	173838
Sud-Est	Djerba île	137.08654928200	497.16671071100	163726
Centre-Ouest	Kairouan Ville	22.62661899270	25.34568144920	139070
Sud-Ouest	Gafsa Ville	43.95717367780	32.42601458180	128971
Centre-Est	Monastir Ville	53.88600478820	60.59468853800	109489
Centre-Est	Mahdia Ville	96.42055992820	118.53665806600	98360

3. Selection of the Sample of Cities:
Technical support needed

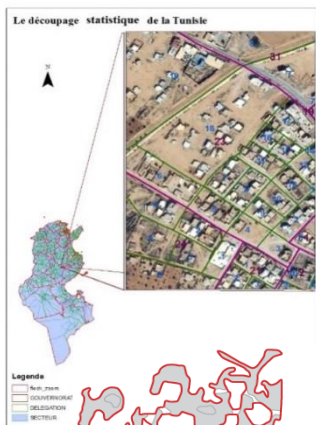


Legend

- City
- Governorate

0 15 30 60 90 120 Kilometers

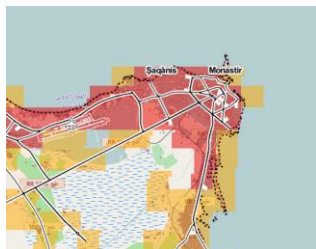
Processing



A) Nonorthogonal features

B) Orthogonal features

Province	Commune	Superficie (km²)	Population (2004)	Densité (hab/km²)	Superficie agricole (ha)	Superficie bâtie (ha)	Superficie forestière (ha)	Superficie industrielle (ha)	Superficie commerciale (ha)	Superficie résidentielle (ha)	Superficie publique (ha)	Superficie privée (ha)	Superficie totale (ha)
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	Ain Draham	100	1000	10	50	10	5	5	5	5	5	5	100
	Ain Draham	100	1000	10	50	10	5	5	5	5	5	5	100



Using Google Earth, EA shapes and GIS tools to define cities Boundaries

Define the selection criteria: City population size, City area size, Geographical location, Regional distribution

Create database with attributes for selected cities

Integration Statistics with Geospatial data to analyze the representation of cities

the National Sample of Cities???

Geospatial Information to compute Indicator 11.2.1

TARGET 11.2



AFFORDABLE AND
SUSTAINABLE
TRANSPORT SYSTEMS

Indicator 11.2.1:

Proportion of the population that has convenient access to public transport by sex, age and persons with disabilities



11.2.1 Data and Method: Test

11.2.1: Data and Method

- Choose of Tozeur as **pilot city**
- **Google Earth Imagery**
- Data collected from transport authorities (**public transport stops**) and **georeferenced** by INS
- Population data at **Enumeration Area** level(Census)
- Method of calculation based **on buffering** distance



11.2.1 Data and Methods: Test

1

Processing: use of GIS software

1. **Delimitation** of Tozeur urban agglomeration
2. **Identification** of transport stops
3. Computation of service areas: **Buffering** each of the stops at distance field of 500 meters
4. **Overlay** service area with population
5. **Calculation** of the population within service areas



Population with access to public transport = 100 x

Population with convenient access to public transport

City population

Inconvenients

- Methodology does not take barriers into account like crossing closed roads, rivers, railways, etc
- Street network detained by authorities is not complete, can't use network to calculate service area using network methodology
 - » Possible use of **OpenStreetMap**
- Lack of georeferenced transportation data in most cities
- People use other kinds of transportation



Use of GIS to calculate Indicator 11.7.1

TARGET 11-7



PROVIDE ACCESS TO
SAFE AND INCLUSIVE
GREEN AND PUBLIC
SPACES

Indicator 11.7.1:

Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities



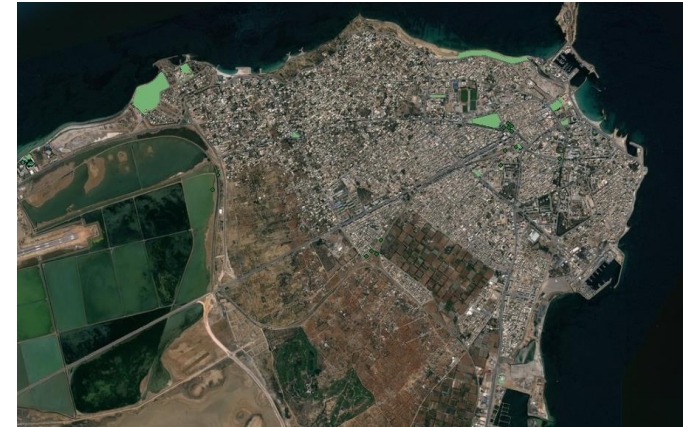
- Governorate
- Ancient oasis
- New irrigated plantations
- Urban areas
- Touristic zone and airport
- Industrial areas

11.7.1 Data and Method

Under study

11.3.1: Data and Method

- **GIS data for Monastir city boundary**
- **OpenStreetMap** to download data streets data in GIS formats
- **Google Earth** as a baseline for identification of open public spaces and urban extent
- **Development urban plans** as urban extent data and base data for open public spaces

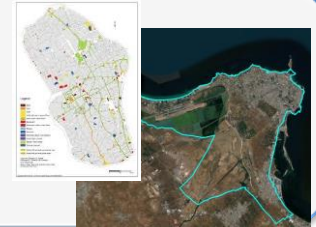


11.7.1 Data and Method

Under Study: Monastir city for test

Urban Extent

- Delimit the built-up area of the urban agglomeration



Land allocated to streets

- Download Streets from OpenStreetMap
- Computation of total Land allocated to streets



Public Open spaces

- Selection of open public space from urban plan and Google Earth
- Computation of total area of open public space

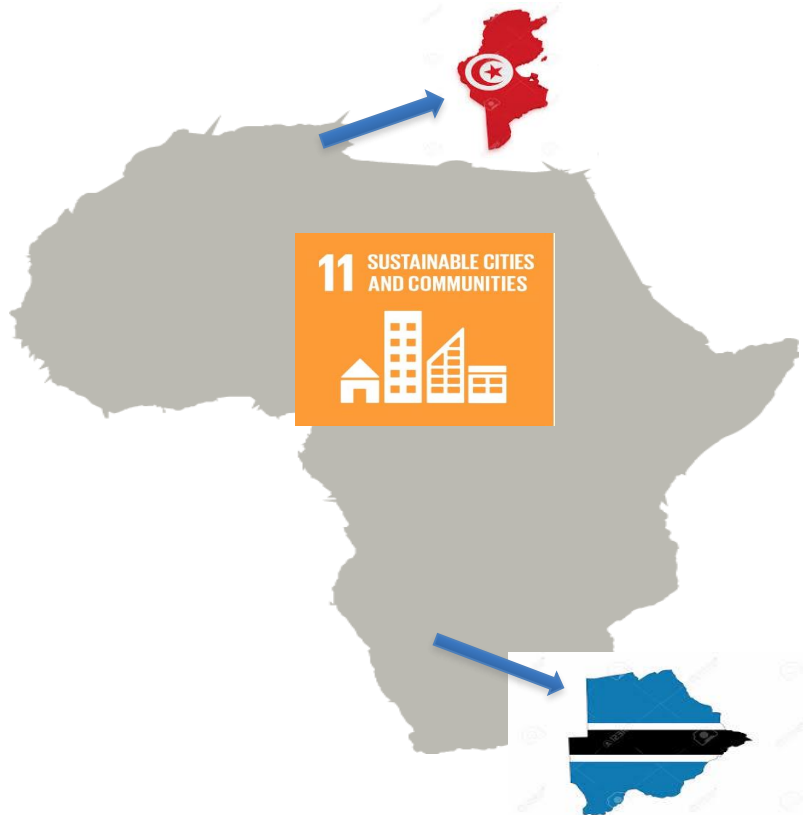


Estimation of share of
population with access to
open public spaces

UN-Habitat Project

Project on monitoring and reporting on SDG 11

Pilot Countries in Africa



The Project supports the two countries to:

- Design **monitoring tools** to improve availability and access to data at city & urban national levels for **systematic reporting** over time
- Create a consistent sample **set of cities** for national level reporting
- **Strengthen capacities for quality data production, multilevel coordination & inter-linking** with SDG 11 and others related with urban components to monitor and report

- **7 training modules**



NEXT ?

NSI is the UN-Habitat **Focal point:**



Coordinate all the relevant stakeholders

1. **Consultation** with administrations, civil society, researchers,... about availability data
2. **Collecting Data**
3. **Computing indicators**
4. **Reporting**
5. **SDG 11 Monitoring**
6. Calculate the **City Prosperity Initiative (CPI)** for Monastir and Tozeur cities.

Opportunities

- **Combining and integrating** various methods and data sources
- **Non-traditional** sources (imagery, remote sensing,...) for spatial analysis available over time
 - ➡ **Enhance** the statistical capacities
- **Censuses and Surveys** at Blocks level
 - ➡ Possibility of Aggregation methodologies
- **Partnership** involving intergovernmental organizations, NGOs, universities, etc.
 - ➡ Inclusive dialogue improving the development of cooperation and actions.

Challenges

Urban data Monitoring and reporting present **important challenges**

- Possible missing values for some indicators or collection years
- Availability of data, especially **disaggregated data** just from censuses

Need of **capacity building** to produce urban SDGs:

- Supporting in data collection, computing and monitoring
- Spatial analysis and data disaggregation concepts and use
- Improving our data integrated (geographic and statistic information) capability even more

Moving Forward



- More integration of Statistical and Geospatial information
- Test other methodologies for urban SDGs with geospatial dimension
- Affinate methodologies of urban SDGs
- Use of new Sources and technologies: Earth observations, Bid Data,...
- Work with OECD and UN-Habitat on the Tunisian Cities boundaries

Thank you for your Attention

Ouadday.samira@ins.tn