Power of Geospatial Knowledge; Building Sustainable Economies

Anna Wellenstein
Director, The World Bank
Mega Trends
Urbanization

1970
RURAL 63%
URBAN 37%

2000
RURAL 53%
URBAN 47%

2030
RURAL 40%
URBAN 60%

+ 2 billion new urban residents
1.2 million new km² urban area

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World urban population
4.2 billion today
Population

5 billion by 2030

Adding three Brazils
Population

6.3 billion by 2050
And another China
### Demographics

#### Old-age dependency ratios

Number of people aged 65 and over as % of labour force (aged 15-64), forecasts

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2050</th>
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<tbody>
<tr>
<td>Japan</td>
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<td>Germany</td>
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<tr>
<td>India</td>
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</tbody>
</table>

Source: European Commission
Demographics

Unprecedented Migration

Global Citizens
65.6 million Displaced.
22.5 million Refugees, over half under the age of 18.
10.0 million Stateless people.

Source: UNHCR, Jun 19, 2017
http://www.unhcr.org/figures-at-a-glance.html
Natural Disasters

Caused loss 1980 - 2016

Climatological events
Hydrological events
Meteorological events
Geophysical events

Source: NatCatService, Munich Re, Topics Geo Publication (2017)
Urban Future
The 19th century was a century of empires. The 20th century was a century of nation states. The 21st century will be a century of cities.

Wellington Webb, former mayor of Denver
Cities, Growth and Poverty Reduction

80% Global Economic Activity in Cities

Job Creation & Growth

World Bank (2013). Harnessing urbanization to end poverty and boost prosperity in Africa
Cities, Growth and Poverty Reduction

Lower Poverty

Source: Global Monitoring Report 2013
Cities, Growth and Poverty Reduction

**Employment Density**

- **London**: Peak 141,600 jobs/km²
- **New York**: Peak 151,600 jobs/km²
- **Hong Kong**: Peak 120,200 jobs/km²

But not all cities are the same

LAND
is developed as small disconnected fragments

Individuals are disconnected from one another and disconnected from job opportunities.

Nairobi in Kenya and Pune in India have fragmented urban land development
Which way will cities go?

A high-emissions path as the world urbanizes?
Or a low-emissions path?

Note: Bubble size corresponds to total carbon dioxide emissions (kilotons).
Source: World Development Indicators

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A third of the world’s urban population live in informal settlements.
Needs for Investment

Grids and networks need big money

$4.5 trillion/year
needed to fill urban infrastructure financing gap

$125 billion
is only a small part of the solution
Geospatial Mission
Data is to this Century what oil was to the last one

The Economist, 2017
Geospatial Technology

Empower land and geospatial location awareness

- Open Data
- Integrated
- Democratized mapping

Disaster Risk Management

IoT/AR

3D Land Records and BIM

Mobile Solutions

Digital Economy

Cloud Services

Blockchain

Service Layers

Geospatial Information

Land Tenure

Regulations and Standards
Urban Planning

Graphics to digital, plans to models
Sierra Leone Landslide 2018

Intense deforestation, informal holdings and irregular buildings in the Western Area National Park’s disaster-prone hilltops.

The 2018 landslide affected 6,000 people and caused 1,200 casualties and 36 million USD of losses.
Geospatial Information for FCV

PILOT in SYRIA

Administrative Data Big Data + Social Media

Geospatial Data

Land Confiscation Indicator Presence in Homs City, March 2017

Land Confiscation Index by Sect

Source: Courage Services (2016)
Investment in Tanzania

30% Average Increase
Geospatial Information for Economic Transformation

- Shared Economy
- Gig Economy
- Digital Platforms
Impact of Geospatial Information

Hour 1:00

Sensing Human Mobility (Lagos, Nigeria)

GNSS tracks from mobile phones

Data from Cuebiq
Importance of Geospatial Information

Spatial Data Infrastructure (SDI)

National Spatial Data Infrastructure

Geospatial one-stop Portal

Map Service
- Web Map Viewer
- Web Map Editor
- Open
- Web Mapping

Discovery Service
- Service Search
- Data Search
- Data Download
- Web Mapping

News & Bulletin Board
- WMS
- WFS (T)
- WCS
- CSW
- Open-API
- Open-LS

Community Service

NSDI System Management (Back Office)

NSDI

Citizen engagement
- National Mapping Authority
- Data Capture
- Spatial ETL
- Modeling
- Logging

Geospatial Data Integration

Unified Geospatial Database

System Administration
- User/Role
- SW Distribution
- Reporting
- Monitoring

Utility management
- Internet
- Smart Phone
- Smart Pad
- PC
- SOAP
- REST
- FTP
- HTTP

Disaster risk management
- Public administration
- Cadastre
- Public consumer
- Real Estate/Cadastre
- Agricultural Farm Land
- Property

Digital economy
- Public administration
- Cadastre
- Policy

Rights and management of land
- Resources
- Urban
- Forestry
- Agriculture

eGov and open data
- Ministries & Local Governments KLIS
- Extracting
- Transferring
- Cleaning

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Global Frameworks, Themes and Partners

- SDGs
- Data Collaboratives
- EO4SD

Integrated Geospatial Information Framework (IGIF)

Geospatial Framework

Country-level Action Plans

UN-IGM
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17 PARTNERSHIPS FOR THE GOALS
Thank you for listening

awellenstein@worldbank.org