Data Solutions and Platforms for the SDGs: The POPGRID Data Collective
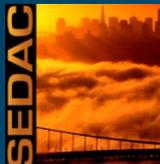
Dr. Robert S. Chen
Director and Senior Research Scientist

CIESIN, The Earth Institute, Columbia University
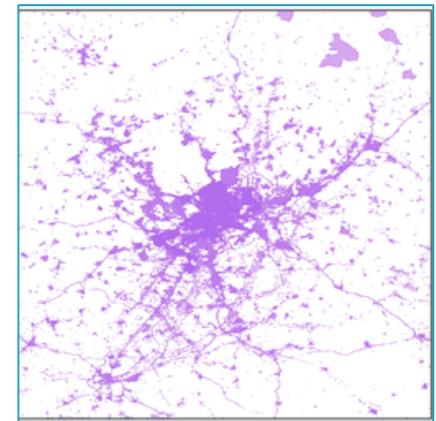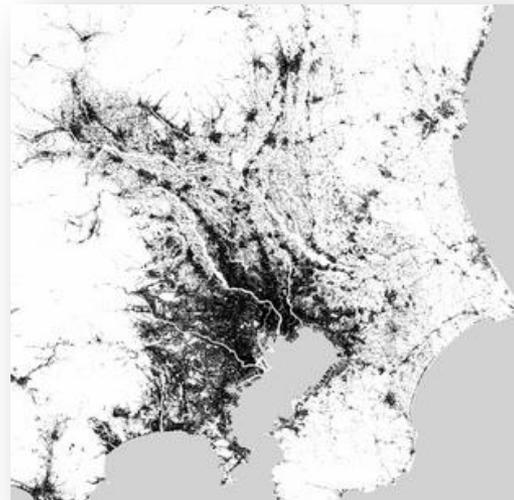*NASA Socioeconomic Data and Applications Center (SEDAC)*
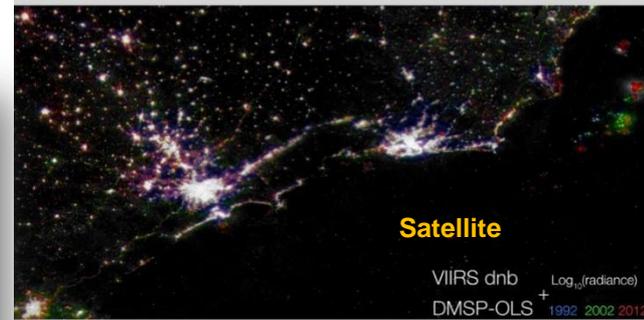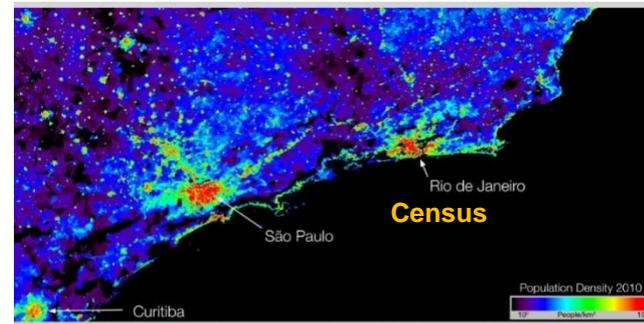*Co-Chair, UN SDSN Thematic Network on Sustainable Development Data*

SUSTAINABLE DEVELOPMENT
SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

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Use of Remote Sensing to Map Urban vs. Rural Areas, Settlements, Infrastructure

- Night-time lights (DMSP >1 km → VIIRS ~750m)

- Landsat (~30 m)

- Radar (~12 m)

- High resolution imagery (< ~3m resolution)

DLR

internet.org by **facebook**

JRC
EUROPEAN COMMISSION

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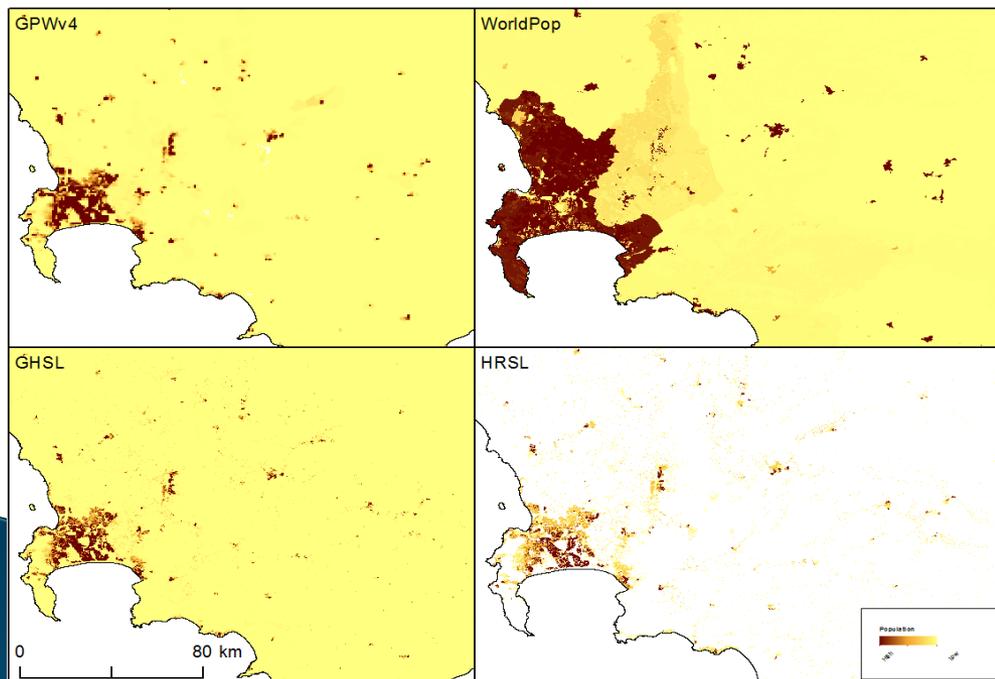EARTH INSTITUTE | COLUMBIA UNIVERSITY

Diversity of Products with Different Characteristics

Project	Prop. Allocation	Dasymetric	Statistical / machine learning	Multiple Time Points	Imagery / spectral data	Radar	Nominal Spatial Resolution
GPW	✔			✔			1km
Landscan		✔	✔?	✔	✔		1km
WorldPop			✔	✔ *			100m
GHSL		✔	✔	✔	✔		30m, 250m, 1km
GUF		✔	✔			✔	~12m for scientific research ~84m public
Esri		✔					250m
HRSL			✔		✔		30m
GMIS/HBASE			✔		✔		30 m

* Exists for some countries, planned for WorldPop Global

Some Challenges in Using These Data for Sustainable Development Monitoring and Applications

▸ Access is scattered; not all open access

▸ Methods not clear; inconsistent documentation, metadata

▸ Some are 1-time, research-oriented products; not updated regularly

▸ Quality may vary by region, time period

▸ No rigorous validation or intercomparison conducted

▸ Not interoperable or well integrated with other related data, e.g., on critical infrastructure, administrative units, water bodies, pop projections

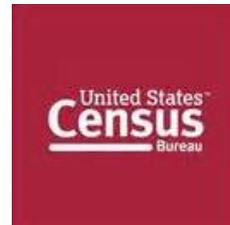**Four population models for Cape Town and environs, South Africa:**
- **Gridded Population of the World, version 4 (GPWv4)**
- **WorldPop South Africa**
- **Global High Resolution Settlement Layer, Population (GHSL)**
- **High Resolution Settlement Layer (HRSL)**

A "Data Collaborative" for Settlement, Infrastructure, and Population Data

▸ Public-private data partnership involving intergovernmental organizations, national & academic research institutions, large and small companies, NGOs, foundations, universities, data stewards, etc.

Goals and Objectives of the POPGRID Data Collective

- **Overall Goal**
  - Accelerate the development and use of high quality, highly usable georeferenced data on population, human settlements, and infrastructure, drawing on an international, interdisciplinary community of data developers and users from both the public and private sectors.

- **Objectives**
  - Share resources
  - Improve data quality and documentation
  - Clarify user needs and priorities
  - Address scientific and technical challenges
  - Facilitate appropriate data use and interpretation in a range of sustainable development application areas

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Participation Welcome!

- **POPGRID Google Group**
  https://groups.google.com/forum/#!forum/popgrid
- **Human Planet Forum**, Enschede, The Netherlands, 13-15 September
  https://www.utwente.nl/en/itc/hpi-forum/
- **GEO-XIV Plenary side event**, Washington DC, 24 October
  http://www.earthobservations.org/geo14.php
- **American Geophysical Union**, New Orleans LA, 11-15 December
  http://fallmeeting.agu.org/2017/

GEO GROUP ON EARTH OBSERVATIONS

Robert Chen:
bchen@ciesin.columbia.edu
CIESIN:
http://www.ciesin.columbia.edu
SEDAC:
http://sedac.ciesin.columbia.edu

AGU FALL MEETING
New Orleans | 11–15 December 2017

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