Geospatial Demography

Combining Satellite, Survey, Census and Cellphone Data to Provide Small-area Estimates

Cape Town, South Africa, Sunday 29 October 2017, 8:30-16:00

The Graduate School of Business, University of Cape Town.

Background

There is an increasing need for more timely and disaggregated demographic data to facilitate better use of limited resources and to monitor progress towards the Sustainable Development Goals. 'Traditional' demographic data from censuses and surveys suffer from limitations in their timeliness and spatial detail. This seminar will focus on the use of new sources of data, in particular from satellite imagery, in complimenting these traditional sources to provide demographic data at finer spatial and temporal scales for low and middle income countries. Robust statistical methods for data integration will be introduced and approaches for building these into national statistical office capacity will be discussed.

The seminar is aimed at those from (i) national statistical offices in low and middle income countries wishing to learn more about satellite imagery and methods for its analysis in producing demographic statistics; (ii) international and national organizations focussed on the production and use of demographic data using new 'big' data sources; and (iii) academics interested in working with new forms of data and learning about geospatial integration methods.

Presenters: Andy Tatem, Linus Bengtsson (WorldPop/Flowminder); Richmond Tiemoko, Benoit Kalasa (UNFPA); Thomas Kemper (EC-JRC); Julian Zeidler (DLR); Marc Levy, Susana Adamo (CIESIN)

8.30am: Arrival and introduction

Perspectives: *New technologies, tools and datasets are driving new ways of providing subnational data on populations. Here we will introduce the value of thinking and measuring subnationally and the types of new data and approaches available that are driving new insights.*

9am: Benoit Kalasa
9.20am: Andy Tatem

Mapping settlements: *Advances in satellite imagery, computing power and methods are enabling more detailed and rapid mapping of human settlements than ever before. Here, the presenters will demonstrate the wealth of new datasets that are openly available to better measure and map the rapidly changing landscapes of human settlement in great detail.*

9.40am: Thomas Kemper
10am: Break
10.15am: Julian Zeidler

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Mapping populations: *Population numbers at local levels are fundamental data for many applications, including the delivery and planning of services, election preparation and response to disasters. Here, the presenters will describe how the integration of census, satellite and survey data are facilitating the fine-scale mapping of population numbers and distributions. The global mapping of populations through disaggregation of census counts as well as the estimation of population numbers in the absence of census will be discussed.*

11am: Susana Adamo
11.25am: Thomas Kemper
11.45am: Lunch
12.45pm: Andy Tatem

Mapping population characteristics: *Population numbers form a fundamental dataset for decision-making, but often there is a need for further disaggregation into different demographic characteristics. The presenters will highlight datasets and tools that are enabling subnational mapping of population characteristics, including age, gender, poverty, literacy and a range of other key development indicators.*

1.10pm: Richmond Tiemoko
1.30pm: Andy Tatem

Mapping population dynamics: *Populations are often highly mobile across days, months and years, and such changes impact aspects such as planning, resource needs, disease dynamics, and aid delivery, but are exceptionally challenging to capture. Here the potential of new datasources, in particular mobile network data, for capturing these dynamics will be outlined.*

1.50pm: Linus Bengtsson
2.15pm: Break

Exploring data, tools, training: *Uptake and use of new geospatial datasets and tools depends on making them readily available in user-friendly formats, as well as building skills within governments and agencies that can act upon them. Here, participants will get a chance to see, interact with and discuss some of the datasets and tools presented earlier in the day within small groups. Following this, there will be a discussion and question/answer session on future directions and training opportunities.*

2.30pm: Hands-on data and tools session – divide into equal groups and rotate between stations presenting data/tools:
-Global Human Settlement Layer (GHSL)
-Google Earth Engine
-Facebook settlement mapping
-WorldPop/Flowminder datasets and tools
-Global Urban Footprint (GUF)
-CIESIN datasets and tools

3.30pm: Panel Q&A session on training, tools, data and the future of geospatial demography

4pm: Close