

Understanding Urbanisation

Monitoring urban dynamics in a fragile and resource-constrained context

Discussion Paper #9, March 2015

This discussion paper highlights that Afghanistan faces a formidable 'data deficit', especially in terms of urban-disaggregated data. The paper reviews the current status of urban monitoring and provides an overview of the pioneering methodology developed in *The State of Afghan Cities Programme 2014/15* to gather more reliable and up-to-date data on urbanisation. Such data is essential for informed decision-making, particularly when faced with dwindling resources and the continued rapid growth of Afghan cities.



UN HABITAT
FOR A BETTER URBAN FUTURE

Making sense of the billions of dollars

While most countries face significant challenges with collecting, analysing, publishing, and using urban data and information, the challenge is particularly acute in Afghanistan. The last census was held in 1979, and even that was not completed.¹ Information is scattered among a plethora of stakeholders who hold various sets of data, and there is no coherent central repository or institutionalised systems for data sharing. Datasets are often incomplete (project-based), not clearly disaggregated between rural and urban conditions, and data is not systematically used for policy, planning, or decision-making.

Urbanisation has been a driving force in Afghanistan's post-conflict reconstruction, contributing to economic growth, job creation and Small- and Medium-Enterprise (SME) development. Yet very little is known about the country's urban dynamics and the billions of dollars that have been invested. Many argue that the frantic rush for project implementation has contributed to the data deficit and weak national monitoring systems which characterise the country today.

How can Afghanistan harness the economic and social opportunities of urbanisation in the coming decades if basic information such as city populations and demographics, magnitude of urban poverty, rural-urban migration, land-use, and access to urban basic services are unknown?

No, I don't know the numbers

Population estimates for Kabul City vary widely; from three million to million, depending on the source. The same lack of clarity characterises all other Afghan cities. There is, however, not a total lack of knowledge and information. Much has been written about Afghanistan. There are numerous qualitative studies exploring aspects of urban Afghanistan, mostly focusing on the areas of politics, governance and urban cultures. And of course there are a plethora of books about the 'Afghan experience' before and since 2001 which provide reflective socio-political narratives of lessons-learned from the country's 'post-conflict' reconstruction.

But for evidenced-based policy and programme planning we also need numbers. The closest we have for rigorous quantitative data on basic urban indicators is the National Risk and Vulnerability Assessment (NRVA), produced by the Central Statistics Organization (CSO). The NRVA is quite an achievement. It has been carried out over four rounds since 2003 (2003, 2005, 2007/08, and 2011/12), and focuses on a national-level set of representative household-level data.

Other government institutions also have various sets of urban data. In 2008, the Ministry of Urban Development Affairs (MUDA) published eight significant volumes of city data for all the major

cities. Independent Directorate of Local Governance (IDLG) has an 'Assessment of Municipalities' database produced in 2013 with support of the United Nations Development Programme (UNDP).

However, looking at the urban data environment, it is clear that: (i) no systematic urban monitoring systems exist; (ii) most data and reporting is not urban disaggregated, or not done in a way that makes it clear what is 'rural' and what is 'urban'; and (iii) city-specific data is very limited, which makes city comparisons nearly impossible.

These challenges are a symptom of a weak urban monitoring environment in Afghanistan which is characterized by:

- lack of coordination amongst government agencies, donors, implementing agencies, and other stakeholders;
- limited sharing of information (especially raw data) and details of methodologies used;
- deep mistrust and insecurity amongst stakeholders, including competition (perceived and/or real) for using data for resource mobilisation, and fear of uncovering weaknesses with methodology or quality of data which is a threat to the institutions that produce it;
- socio-political sensitivities around data (e.g. population figures, ethnicity, municipal revenues and expenditures);
- limited national technical capacity and motivation to apply a data-driven ('evidenced-based') approach to policy development and programme interventions;
- limited/insufficient resources for urban monitoring.

How can Afghanistan harness the economic and social opportunities of urbanisation in the coming decades if basic information such as city populations and demographics, the magnitude of urban poverty, rural-urban migration, land-use, and access to urban basic services are unknown?

The State of Afghan Cities Programme 2014/15 (SoAC)

How can we get more relevant, rigorous and timely data on Afghan cities in a context of increasing insecurity, dwindling donor and national resources, and limited institutional and human capacities?

The State of Afghan Cities Programme 2014/15 responds to this challenge by aiming to collect reliable and recent urban data – quickly and cost-effectively – and initiate partnerships and build Afghan capacities for improved urban monitoring systems.

Under the leadership of the MUDA, IDLG and the Kabul Municipality

1. Only two-thirds of the districts were covered.

(KM), SoAC has developed a pioneering methodology that extracts data from up-to-date, high resolution² satellite images of urban areas. From the image analysis, two data sets are produced: (i) house counts (hillside, irregular, and regular, apartments, apartments mixed-use, and IDP camps); and (ii) land-use (residential, commercial, institutional, industrial, agriculture, vacant plots, etc).

Counting every house with a mouse

SoAC image interpreters use a Geographic Information System (GIS) to review each satellite image and digitise every house, thus producing an inventory of houses for each municipality. The dominant Afghan housing form is detached housing in individual compounds with high walls – very easy to see from the satellite image, although the more informal and irregular residential areas are slightly more difficult. The house counts enable population estimates to be calculated based on the average household size. The average number of households per residential building can be determined from CSO's household listing while the average household size can be calculated using the NRVA (2011/12) figure (7.5 persons per household), other representative surveys (e.g. 2014 Urban Poverty Study, variable averages for the five big cities³), and UN-Habitat's urban household-level database of over 500,000 people (62,000 households) from baseline surveys undertaken in urban community-based programming over the past years.⁴

It must be emphasised that SoAC is not – and does not have the ambition to be – a population census. The principle aim of counting houses and apartments is to have spatially-attributed housing data (e.g. density and housing types) to support municipal governance and management (for example tax mapping, detailed urban planning, and settlement upgrading, service demand, etc) based on the existing ground conditions.

Urban land use

You can understand a lot about urban conditions from the use of land in and around a city, including the proportion of land used for various activities (e.g. residential, commercial, industrial, institutional, streets, etc.), the spatial location of activities (e.g. central, peripheral, nodal and cluster arrangements), and the urban layout and form (e.g. formal/informal, planned/unplanned).

Under SoAC, the existing land-use of cities is interpreted from the satellite images, classified, and digitised using GIS into (i) 'built-up' and (ii) 'non-built up', with land-use classes and sub-classes for each as per international norms (see graphic on next page). Similar to house counting, land-use interpretation is relatively straightforward, although quite time-consuming, and requires a 'trained eye'. Agriculture areas and water bodies are clearly visible, as is the built form of residential areas (house compounds and apartment blocks), industrial (e.g. long sheds and circular tanks), and commercial areas (inner-city, along main roads), all of which are identifiable from the high-resolution image. Identifying sub-classes in the image is less straightforward (e.g. details of the institutional land use (schools, hospitals, clinics)). These cannot always be reliably ascertained from image interpretation and requires field verification and checking.

Click, click, click – counting thousands of houses

Using GIS, the State of Afghan Cities (SoAC) Image Interpreters, count every house and compound in each city. Apartments are also counted and incorporated based on field survey data. This results in spatially-attributed housing data that can be used to understand housing densities, types and population estimates to support improved urban planning and service delivery. The example below is from District 11, Kabul.



City workshop in Mazar-i-Sharif, November 2014. Working groups verifying and updating draft city data set.



Field checking and verification in Charikar city, December 2014



2. With a spatial resolution or pixel size of $\leq 50\text{cm}$.

3. 9.6 for Kandahar, 9.1 for Jalalabad, 7.1 for Herat, 7.1 for Mazar-e-Sharif, and 7.1 for Kabul. Samuel Hall (2014). "A study of Poverty, Food Insecurity and Resilience in Afghan Cities", for PIN and DRC.

4. See: UN-Habitat (2014) Urban Solidarity; Discussion Paper # 2, for an overview of these experiences with urban community-based programming.
<http://unhabitat.org/urban-solidarity-community-led-neighbourhood-upgrading-by-people-for-people/>

Beyond the satellite image: Checking/updating in the field

Of course there are some areas in which the exact land-use is not comprehensible in the satellite image. The GIS team mark these as 'unknown'. Also, the image interpretation is just that, an interpretation, and it needs to be checked through field verification. Therefore, after the draft dataset is generated from the interpretation of satellite images, participatory city workshops and field surveys are undertaken to improve data accuracy, check 'unknown areas', and harness the extensive local knowledge that exists within cities.⁵

The participatory city workshops reflect the fact that local residents and officials themselves know their environment and therefore significant knowledge on city-level conditions rests with city residents and sub-national institutions – but it needs to be systematically collected, analysed, stored and shared. The SoAC city workshops are one-day events held under the leadership of IDLG/GDMA and the respective municipalities, attended by between 40 and 100 local stakeholders including Mayors and Municipal Advisory Board (MAB) members, municipal department staff, District (*Nahia*) managers, line departments, *Wakili Gozars*, Community Development Council leaders, and civil society. The draft district (*Nahia*) land use maps are presented and participants systematically review these in working groups and update and change where required.

Following the city workshops the field survey involves teams of surveyors first-hand (i) cross-checking the accuracy of land-use and house counts; (ii) ascertaining the land-use of unknown areas; plus (iii) counting apartments (the satellite image shows the apartment blocks, but not how many apartments in each, which is required).

The collected field data is subsequently incorporated to arrive at a final city dataset. Large 'A0'-sized hard copies of all maps are then sent to each Municipality and Nahia office to complete the feedback loop and initiate local data use.

Using data

A detailed 'State of Afghan Cities 2014/15' report will be produced mid-2015. Volume One will explore the key urban issues at national and local levels, and Volume Two will present the city-level data in a larger 'atlas' style form with maps, graphs and tables. SoAC's primary use (and value) will be for government and development partners to more effectively:

(i) **Guide urban development:** guiding the growth of cities; promote infill and densification; reduce informal sprawl, especially on agricultural land (linked to livelihoods, environmental ecosystems, and food security concerns). Managing urban growth is essential as Afghanistan is rapidly urbanising and will be 50% urban by 2060 with an additional 16 million people in cities.⁶

(ii) **Stimulate the urban economy and support rural-urban linkages:** e.g. through understanding current locations and levels of urban and peri-urban agricultural, commercial and industrial activities;

(iii) **Improve urban governance and management:** e.g. developing strategic plans and detailed plans; tax mapping and improving local revenue collection; laying foundations for municipal elections;

Existing land-use classification

Following international standards, SoAC is producing maps of the existing land-use based on the following classification:

Land Use	Sub – classes	Satellite image example	
Residential	Houses –regular layout *		
	Houses –irregular layout *		
	Houses – hillsides *		
	Apartments		
	Apartments Mixed–use		
	IDP camps		
Built – up area	Institutional	Shrines/Heritage area	
		Cemetery	
	Education		
	Health		
	Sports ground		
	Park		
	Other		
Industrial			
Transport			
Roads/streets			
Vacant plots			
Buildings under construction			
Non built – up area	Agriculture		
	Green Areas		
	Forest		
	Water		
	Barren land		

* These three sub-classes are only for Kabul. The other 33 provincial capitals's sub class is only 'houses'.

5. In Kabul the sequencing was different to the other 33 Provincial Capitals. First a detailed field survey was undertaken then this information digitized. This was possible due to location of UN-Habitat office in Kabul and ability to engage with Nahia offices and the field on a prolonged basis.
 6. See: UN-Habitat (2014) Afghanistan's Urban Future; Discussion Paper #1. <http://unhabitat.org/afghanistans-urban-future/>

7. See: UN-Habitat (2015) A home for all Afghans; Discussion Paper # 5. <http://unhabitat.org/a-home-for-all-afghans/>
 8. SoAC Advisory Committee. Terms of Reference.
 9. UN-Habitat (2012) count me in: surveying in tenure lenth. UN-Habitat:Nairobi

municipal elections, and clarification of administrative boundaries;

(iv) **Improve policies and enabling the environment:** e.g. vacant residential plots are a large phenomena (in some large cities they outnumber the occupied residential plots), so consider revising/implementing laws and regulations to improve the use of urban land; affordable housing options (e.g. incremental land and housing development such as 'sites and services' schemes);⁷

(v) **improve monitoring of urban dynamics:** if such a report is produced at regular intervals (e.g. every three to five years), it can track, for example, the direction and speed of growth, levels and types of housing stock, land values and relative land uses, etc.

From an Advisory Committee to an Afghan Urban Observatory

An Advisory Committee comprising over 16 national institutions guides the overall SoAC programme.⁸ Concretely, this means that a technical-level meeting is held every month to review preliminary results; provide feedback SoAC methodology; and, most

importantly, identify, source, and share existing urban data amongst members. The Committee also functions to build partnerships, capacity and trust amongst SoAC partners (across government ministries/ departments as well as between government, civil society and the UN). Such a multi-stakeholder mechanism that is specifically focused on urban Afghanistan is a first for the country and shows promising results.

The long-term vision is that the Advisory Committee will transition into an "Afghan Urban Observatory" (AUO). The 'urban observatory' model has been developed and implemented in over 150 cities in more than 40 African, Asian and Latin American countries. An urban observatory functions as a network of stakeholders responsible for producing, analysing, and disseminating data on a meaningful set of indicators that reflect nationally prioritised issues of sustainable urban development, thus supporting the formulation of better informed policies and overcoming some of the key challenges mentioned above, especially poor inter-stakeholder coordination and data sharing.

Ways forward

- Complete the **SoAC Programme** under strong government leadership and ensure the findings are widely disseminated, available and used at national and sub-national levels;
- Build on the SoAC Advisory Committee and establish an **Afghan Urban Observatory (AUO)** (not a physical building, but a partnership/network!). This does require seed funding and technical expertise, but most importantly, continued commitment and leadership from government is essential. Ways forward **under the umbrella of AUO** include:
 - Annual monitoring and reporting on a set of key urban indicators to 'measure the general health' of Afghan cities;
 - Consider hosting a bi-annual Afghan Urban Forum to bring stakeholders together and act as a milestone to review urbanisation dynamics and changes; and engage all actors, including civil society;
 - Improve coordination between urban stakeholders, including intra-ministerial; and at city levels between line departments and municipalities;
 - Strengthen linkages between research institutes and city officials and policy makers – to develop research that is used;
 - Take concrete and explicit action to improve gender and youth disaggregation of data;
 - Link Afghanistan with regional and global urban monitoring initiatives, including the Third United Nations Conference on Housing and Sustainable Urbanisation (Habitat III) to be held in 2016: <http://www.unhabitat.org/habitat-iii/>
- Address the '**municipal boundary issue**', as discussed in Paper #7, especially for Kabul, in order to be able to monitor real urban growth and compare data sets.
- Empower **community engagement in urban monitoring** and data (such as household-level data, plus data and information on urban safety, security, access to services, etc.), for example through 'participatory enumerations' which are used in many other countries as a valuable and cost-effective methodology⁹;
- Support Afghan universities to educate the 'next generation' in urbanisation through relevant degrees in urban studies/planning, short courses, etc.



The State of Afghan Cities 2014/15 Programme is a one-year initiative supported by the Government of Australia and implemented in conjunction with the Government of Afghanistan that aims to improve knowledge and information on urbanization in Afghanistan by undertaking a detailed review of all 34 provincial capitals. A detailed State of Afghan Cities 2014/15 Report will be published mid-2015.

Contact: info@unhabitat-afg.org – www.unhabitat.org

