



INTERNAL DISPLACEMENT IN URBAN AND RURAL AREAS

An analysis of IDP distribution and access
to services in Nigeria and Ethiopia

May 2019



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Contents

1. INTRODUCTION	3
2. BACKGROUND	4
3. DATA SOURCES	5
3.1 The Displacement Tracking Matrix	5
3.2 WorldPop	7
4. DEGREE OF URBANIZATION - DEFINITIONS	8
5. METHODOLOGY	9
6. SUMMARY OF ANALYSIS	10
6.1 Population Distribution in Nigeria and Ethiopia	10
6.2 Internally Displaced Persons Distribution.....	12
6.3 Comparative analysis: IDP distribution vs. country’s population distribution.	13
6.4 Demographics	15
6.4.1 Nigeria	15
6.4.2 Ethiopia	16
6.5 Access to Services	17
7. DISCUSSION: LIMITATIONS AND RECOMMENDATIONS	19
7.1 Coverage and bias	19
7.2 Accuracy and missing coordinates.....	19
7.3 GHSL Model accuracy	20
7.4 Mobility patterns.....	20
7.5 Qualitative assessment	20
7.6 Data consolidation	21
8. NEXT STEPS	21

1. INTRODUCTION

In 2014, 54 per cent of the world's population lived in urban areas, with urban populations projected to increase to 66 per cent by 2050¹. As the world is rapidly urbanizing, so too is displacement. Specifically, internal displacement is becoming an urban² phenomenon, especially as conflict and war increasingly occur in cities³. In 2015, over 50 million people were affected by urban warfare and violence in cities⁴, with 40.8 million people internally displaced at the end of the same year⁵.

There have been a number of studies that have sought to understand the dynamics of urban displacement and the challenges of urban crises by analyzing the distribution of displaced populations and their distinct needs. In particular, a recent paper by the Center for Global Development (CGD) for the Internal Displacement Monitoring Centre's (IDMC) Global Report on Internal Displacement (GRID 2019)⁶ attempts to identify the locations of internally displaced persons (IDPs) in urban areas to support policy recommendations for economic integration. It highlights the need to integrate livelihoods programmes for over two million conflict-displaced working-age IDPs concentrated in urban areas, where substantial economic opportunities exist.

CGD's paper focuses on access to economic opportunities and economic integration of displaced populations in urban settings. Building on CGD's paper, this report aims to discuss the analysis of the rural-urban dimension, specifically on access to services, using Nigeria and Ethiopia as case studies. Current discourse on displacement focuses only on the urban. It lacks a rural-urban dimension that allows for a more comparative understanding of the needs and vulnerabilities for and between each context. This is crucial as intervention and responses in urban settings is a new challenge for humanitarian agencies. This is largely due to the complexities and diversities of the urban landscape and lack of available and accurate data on urban internal displacement⁷.

Historically, humanitarian agencies have responded to [crises] in remote rural areas with responses developed for rural settings⁸. As crises increasingly occur in urban areas, humanitarian actors will

¹ United Nations Department of Economic and Social Affairs Population Division, 2014. *World Urbanization Prospects 2014 Revision*, p.7. Available at: <https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Report.pdf>

² The definition of urban is diverse and varies nationally and globally. More context is provided on how this report defines urban. Please see Section 4: Definition of "Urban".

³ International Committee of the Red Cross, 2018. *Displaced in Cities: Experiencing and Responding to Urban Internal Displacement Outside Camps*. Available at: <https://shop.icrc.org/displaced-in-cities-experiencing-and-responding-to-urban-internal-displacement-outside-camps-2822.html?store=default>

⁴ International Committee of the Red Cross, 2015. *Urban services during protracted armed conflict: a call for a better approach to assisting affected people*. Available at: https://www.icrc.org/sites/default/files/document/file_list/icrc-002-42491.pdf

⁵ IDMC, 2016. *GRID 2016 Global Report on Internal Displacement*. Available at <http://www.internal-displacement.org/sites/default/files/publications/documents/2016-global-report-internal-displacement-IDMC.pdf>

⁶ Center for Global Development, 2019. *How urban are IDPs and What Does that Mean for their Economic Integration*. Available at: <https://www.cgdev.org/publication/how-urban-are-idps-and-what-does-mean-their-economic-integration>

⁷ Two references support this statement. First, Cotroneo, Angela, 2017. *Specificities and challenges of responding to internal displacement in urban settings*. International Review of the Red Cross. 99, pp. 283-318. DOI: 10.1017/S1816383118000164 and second, IDMC, 2018. *UnSettlement: Urban displacement in the 21st century*. Available at <http://www.internal-displacement.org/sites/default/files/inline-files/20180209-idmc-intro-urban-displacement-thematic-series.pdf>

⁸ UN Habitat, 2016, p.1. Available at <https://unhabitat.org/wp-content/uploads/2016/05/Global-Alliance-for-Urban-Crises-Overview-25-March-2016.pdf>

have to adapt their approaches to address the complex and dynamic urban environments⁹. An understanding between displacement in rural versus urban areas can help to better inform humanitarian responses.

Underpinning the analysis is data collected over time by the International Organization for Migration (IOM)'s Displacement Tracking Matrix (DTM), that examines the distribution of the internally displaced persons (IDPs), their demographic composition, and access to services.

The Displacement Tracking Matrix (DTM) is a system that track and monitor displacement and population mobility. It is designed to regularly and systematically capture, process and disseminate information to provide a better understanding of the movements and evolving needs of displaced populations, whether on site or en route. DTM data provides the most granular data available, providing detailed locality description for the displaced population. The added value of DTM data to the discourse of urban internal displacement can help partner agencies with analyzing, informing, and sharing evidence-based multi-sectoral responses on services, identifying not only whether access to services is addressed as well as its reasons. This can help to identify practices that support both immediate and longer-term needs, particularly as displacement is increasingly protracted. Additionally, further research on the rural-urban movement, related to displacement is a point of interest. This can shed light on whether this movement pattern has affected urbanization.

2. BACKGROUND

In 2017, there were 30.6 million new displacements due to conflict and disasters recorded around the world¹⁰. Although displacement due to disasters has fluctuated since 2008, the number of new displacements associated with conflict has increased progressively, from 4.6 million in 2008 to 11.8 million in 2017. Of the 143 countries and territories affected by displacement, Ethiopia and Nigeria are among the countries that have consistently observed high levels of displacement over recent years.

In the first half of 2018 alone, Ethiopia recorded 1.2 million IDPs due to conflict and violence, and 536,321 IDPs due to climate induced factors¹¹. The spike in displacement is largely due to an inter-communal conflict in West Guji and Gedeo between the regions of Oromia and Southern Nations, Peoples and Nationalities (SNNPR), as well as an inter-communal conflict along the borders of Oromia and Somali regions. Simultaneously, the El Niño-induced drought continues to aggravate access to

⁹ Maynard, V. et al, 2018, *Urban planning following humanitarian crises: supporting urban communities and local governments to take the lead*, Environment and Urbanization, 30(1), pp. 265–282. doi: 10.1177/0956247817732727

¹⁰ IDMC, 2018. *GRID 2018 Global Report on Internal Displacement*. Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/201805-final-GRID-2018-embargoed_0.pdf

¹¹ DTM, 2018. Ethiopia - National Displacement Dashboard (May - June 2018). Available at: <https://displacement.iom.int/reports/ethiopia-%E2%80%94-national-displacement-dashboard-may-june-2018>

water, compound severe malnutrition, and deplete livestock, thus negatively affecting the lives of millions in the southern and south-eastern parts of the country, many of whom are pastoralists.

On the other hand, violent attacks and kidnapping of civilians that began in 2014 by non-state armed groups have prompted mass displacement in Nigeria, particularly in the north-eastern region of the country. As the most populous country in Africa with 190 million people¹², Nigeria had an estimated caseload of 1.8 million internally displaced persons in 2018¹³, primarily displaced by conflict in Borno, Adamawa and Yobe states, and it is now also witnessing increasing violence between herders and farmers in Nigeria's Middle Belt.

3. DATA SOURCES

The main source of data utilized in this document to compare the spatial distribution of IDPs with the total population of a country is from IOM's DTM. DTM not only provides data on spatial distribution and demographics of IDPs but also on the population's access to services. Country population data was sourced from WorldPop while data on the level of urbanization was obtained from the Joint Research Centre's Global Human Settlement Layer.

3.1 The Displacement Tracking Matrix

The IOM's Displacement Tracking Matrix (DTM)¹⁴ is an information system designed to regularly and systematically capture, process and disseminate multi-layered information to track and monitor displacement and population mobility. DTM collects, analyzes and disseminates critical information on mobility, needs, and vulnerabilities of displaced and mobile populations to enable decision-makers and responders to provide these populations with better context-specific assistance. Current DTM operations cover 70 countries and tracks and monitors the needs of over 28 million IDPs.

The DTM collects data through an extensive network of key informants who gather information on the number and location of IDPs which is crossed-checked against available secondary sources such as data from government registration centers and partnering agencies¹⁵. Key informants include community representatives, local authorities, representatives from the health and education office and securities forces¹⁶.

For Nigeria and Ethiopia, data utilized for this report were sourced from DTM's mobility tracking component¹⁷. Mobility tracking aims to quantify the presence of population categories, reasons for displacement, length of displacement and needs within defined locations. It comprises of three assessments conducted at various administrative levels and captures information in a census-like

¹² World Bank, 2019. *Population Total: all countries and economies*. Available at: <https://data.worldbank.org/indicator/SP.POP.TOTL>

¹³ OCHA, 2018. *Nigeria: Humanitarian Needs Overview 2019*. Available at:

https://reliefweb.int/sites/reliefweb.int/files/resources/01022019_ocha_nigeria_humanitarian_needs_overview.pdf

¹⁴ IOM, 2019. *Displacement Tracking Matrix*. Available at: <https://www.globaldtm.info/>

¹⁵ IOM, 2017. DTM Methodological Framework used in Displacement Tracking Matrix Operations for Quantifying Displacement and Mobility. Available at: <https://displacement.iom.int/content/methodological-framework-used-displacement-tracking-matrix-operations-quantifying>

¹⁶ IOM, 2017. DTM toolkit. Available at: <https://displacement.iom.int/dtm-toolkit/dtm-partners-toolkit>

manner of individuals and households. The baseline area assessment collects data in a defined large administrative area, such as a region or a state and identifies specific defined location displacement at a lower level of observation for further assessment. The baseline location assessment collects data on population presence at a lower administrative level, such as villages and neighborhoods. The results for the baseline location assessment can be used to confirm and verify the results of the baseline area assessments to collect detailed data through a key informant approach. From the baseline location assessment, specific sites are identified for evaluation. Site conditions and needs of displaced populations are collected and used to guide operational responses by identifying needs and gaps in assistance. Data used in the analysis of Nigeria and Ethiopia were obtained from the baseline location assessments and site assessments.

The data were collected periodically through rounds of two-month intervals. The rounds are conducted to monitor the current situation of displacement at a specific point in time, allowing for a critical examination of displacement and access to services over time. For this assessment, twenty-five rounds of assessment data were used from Nigeria while fourteen rounds of data from Ethiopia were used. The difference in the number of rounds exists for the analysis because it is linked with the length of time DTM has been operational in Nigeria and Ethiopia. Specifically, data analyzed for Nigeria was between December 2014 and October 2018 while for Ethiopia, it was between January 2017 and December 2018. A total of 1,197 sites were assessed in Ethiopia in the latest round (Round 14, December 2018) and 2,415 sites were assessed in northeast Nigeria (Round 25, October 2018).

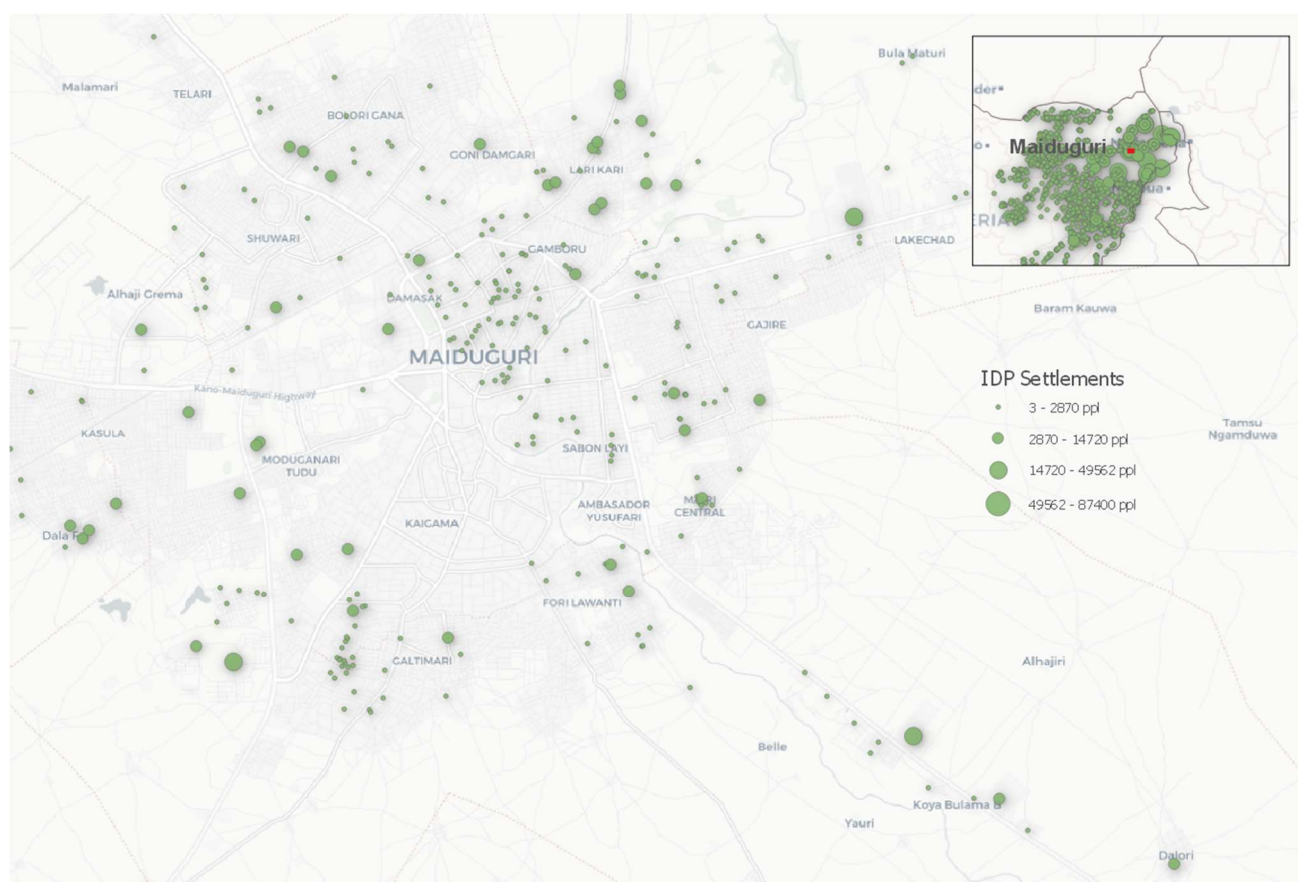


Figure 1. Spatial distribution of IDPs in Maiduguri, north-east Nigeria.

3.2 WorldPop

WorldPop provides detailed and freely-available contemporary population distribution and composition maps for all countries in Africa, Asia and Central and South America. The datasets enable accurate measurement of local population distributions, compositions, characteristics and growth across national and regional scales.

The population for both Nigeria and Ethiopia were based on 2015 projections in order to match JRC's GHSL spatial raster dataset.

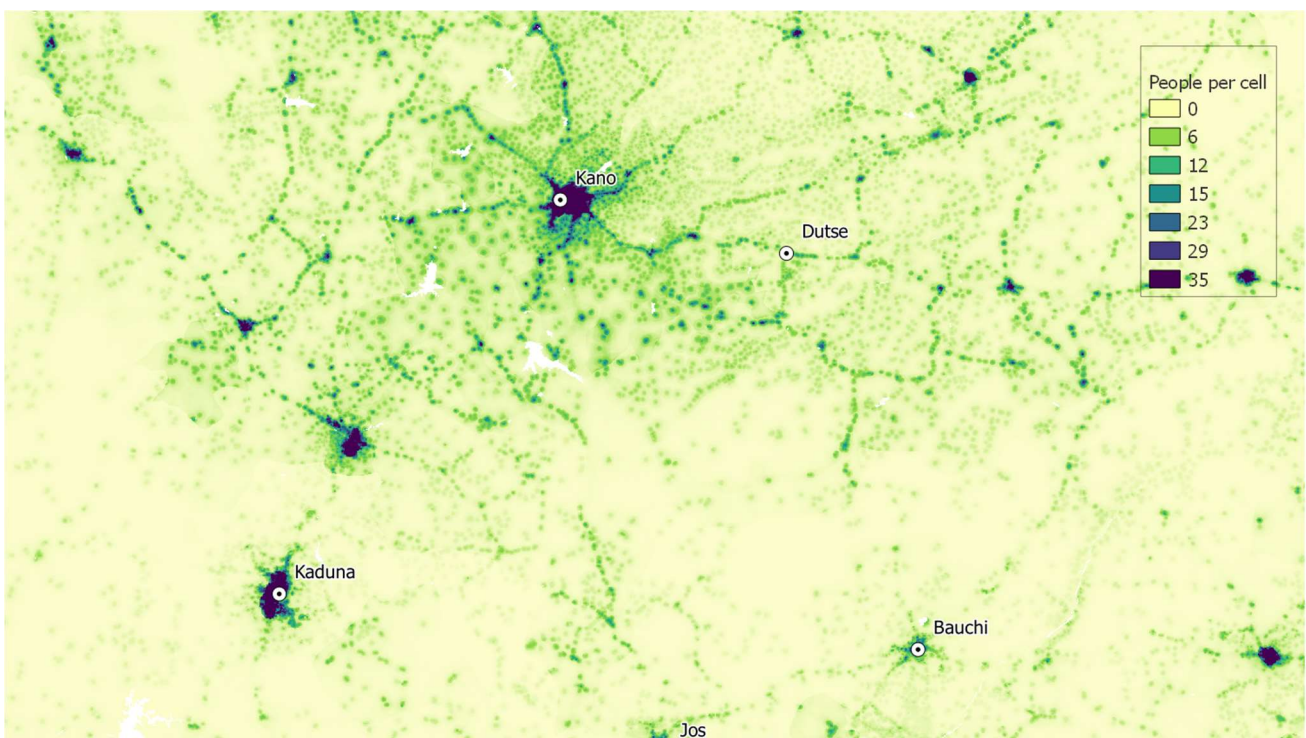


Figure 2. WorldPop raster model, which estimates the number of people per grid square.

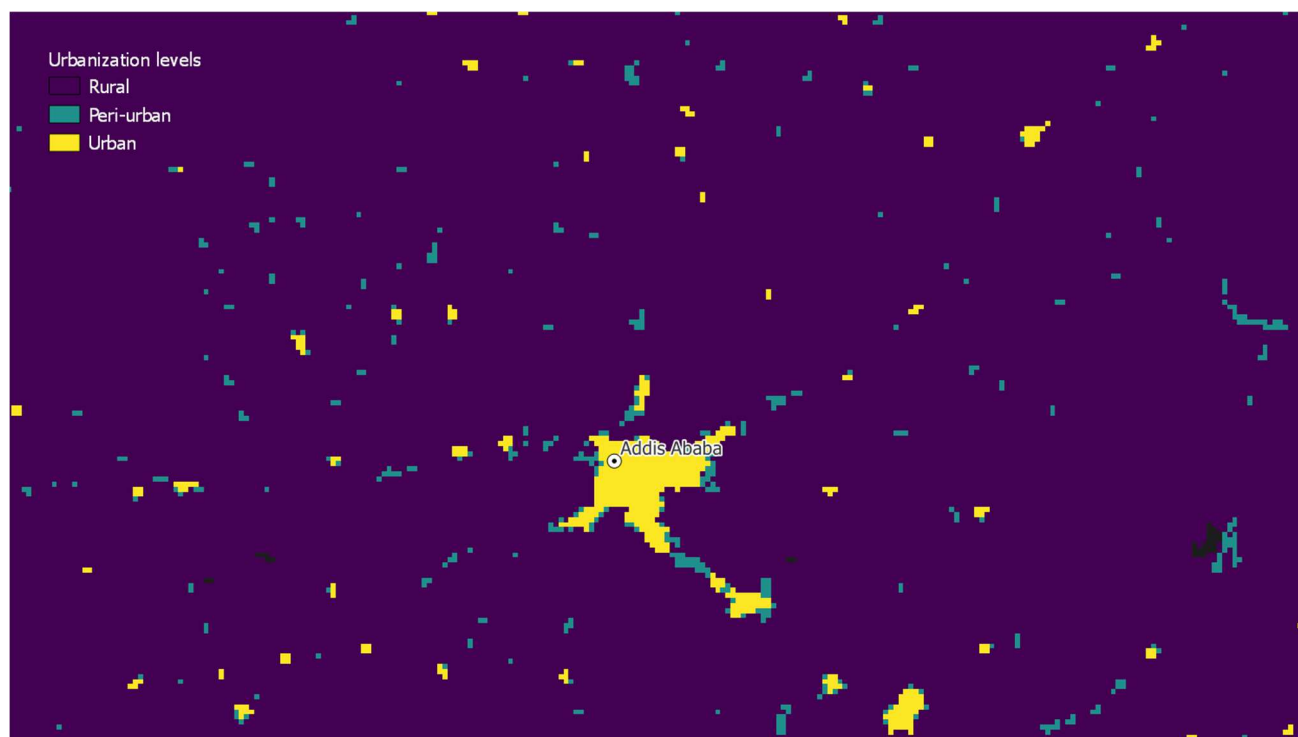
3.3 Global Human Settlement Layer (GHSL)

The GHSL¹⁷ spatial raster dataset provided by the European Union's Joint Research Centre (JRC) assesses the degree of urbanization at a global scale, capturing cities, smaller settlements and rural areas by depicting the distribution and density of a population.

The GHSL has three different components: GHS-POP, GHSL-BUILT and GHSL-SMOD. The population (POP) component is expressed as the absolute number of people per 1sq. km grid cell to show the distribution and density of a population while the built-up (BUILT) component classifies the same grid cells as covered or not covered by man-made construction such as buildings and structures. Lastly,

¹⁷European Commission Global Settlement, 2014. Available at: <https://ghslsys.jrc.ec.europa.eu/>

the SMOD component combines the built-up areas and population density into a settlement model and then classifies grid cells as either urban, peri-urban, rural or uninhabited according to that model. Analysis was completed using the SMOD layer only. For this analysis, SMOD-V9, the ninth version of the dataset, which is a pre-2018 pre-release dataset was used. Below are the definitions used to populate the Global Human Settlement Layer for urban, peri-urban and rural areas:



Urban	A cluster of contiguous cells with at least 1,500 residents per sq. km or 50% built-up area in each cell and at least 50,000 residents in the cluster. Gaps are filled, and edges are smoothed.
Peri-urban	A cluster of contiguous cells with at least 300 residents per sq. km in each cell and at least 5,000 residents in the cluster. Neither gap filling nor smoothing. Urban center cells are excluded from the urban cluster.
Rural	Cells with a population density below 300 residents per sq. km and cells with a higher density but outside an urban cluster.

Figure 3. Global Human Settlement Layer (GHSL).

4. DEGREE OF URBANIZATION – DEFINITIONS

The definition of ‘urban’ varies globally and nationally, with each country establishing their own criteria to determine what constitutes as ‘urban’. It typically includes population size or density, economic activity, level of infrastructure, administrative boundaries or a combination of these criteria. Due to the diversity in which ‘urban’ is defined, it was crucial to adopt a standard definition to maintain consistency in the analysis. For the purposes of this report, the global definition

established by the Joint Research Center was employed. JRC measures the degree of urbanization to establish a global definition for cities and settlements to provide an analytical and descriptive lens on urban and rural areas.

To elaborate, it classifies municipalities into three types: cities, towns and suburbs and rural areas based on grid concepts of urban centers, urban clusters, and rural grid cells. Cities are defined as having greater than 50 per cent of the population in urban centers, which consist of adjoining cells of 1 sq. km with at least 1,500 inhabitants and at least 50,000 inhabitants in the center. Towns and suburbs are classified as areas having greater than 50 per cent of the population in urban clusters and not classified as a city. Urban clusters are contiguous cells with at least 300 inhabitants per sq. km and at least 5,000 inhabitants in the cluster. Rural areas are defined as areas with greater than 50 per cent of the population in rural grid cells, with density below 300 inhabitants per sq. km, as well as other cells outside urban centers and clusters.

Using these definitions, the municipalities in this report are categorized as cities (urban), towns and suburbs (peri-urban) and rural. In general, if analysis was completed only on urban and rural areas, the peri-urban class was combined with the urban class.

While a global definition is necessary to conduct cross-country comparisons, it is important to mention that JRC's classification model does not necessarily match a country's own criteria. This observation is explored in greater detail in the limitations and recommendations section.

5. METHODOLOGY

As previously stated, the DTM provides both baseline assessments and site assessments for Nigeria and Ethiopia^{18/19}. While baseline assessments comprise of area-based IDP figures and a few additional indicators, site assessment data is georeferenced and includes additional data fields such as male-female ratios, access to services, and multi-sectoral information. Therefore, the following analysis is based on the site assessments. For each entry, namely a single IDP population record for one specific date and location, longitude and latitude coordinates are extracted and located on the SMOD layer of JRC's GHSL. The urban class specified by that layer for that point is then added as an additional feature to the respective DTM data entry.

Once all entries have been classified, the GHSL urban class can be employed for disaggregation of DTM location assessment data by level of urbanization. If not otherwise stated, such disaggregation is averaged over all rounds of the respective country. This means that if the male-female ratios are disaggregated by and compared between urbanization classes, then this is not done based on the data for one specific round but based on the data of all rounds. This is justified by the fact that most of these ratios were observed not to vary significantly over time and hence temporal resolution did

¹⁸ IOM, 2017. DTM Methodological Framework used in Displacement Tracking Matrix Operations for Quantifying Displacement and Mobility. Available at: <https://displacement.iom.int/content/methodological-framework-used-displacement-tracking-matrix-operations-quantifying>

¹⁹ Ethiopia Displacement Tracking Matrix, 2018, Methodology. Available at: <https://displacement.iom.int/system/tdf/reports/IOM%20-%20DTM%20Ethiopia%202018%20Methodology%20%281%29.pdf?file=1&type=node&id=3609>

not add any value. An exception to that is the access to services which we analyzed for each round separately and therefore represented the result as a time series rather than a temporal average.

For the disaggregation of a country's total population by level of urbanization, the population density layer was provided by WorldPop and overlaid with the GHSL SMOD layer.

Subsequently, conditional sums were performed. More precisely, as both layers are raster layers, the raster layers were first aligned and then all WorldPop pixel values falling on top of a "rural" SMOD pixel were summed to obtain the total rural population. Similarly, this procedure was conducted for peri-urban and urban population shares.

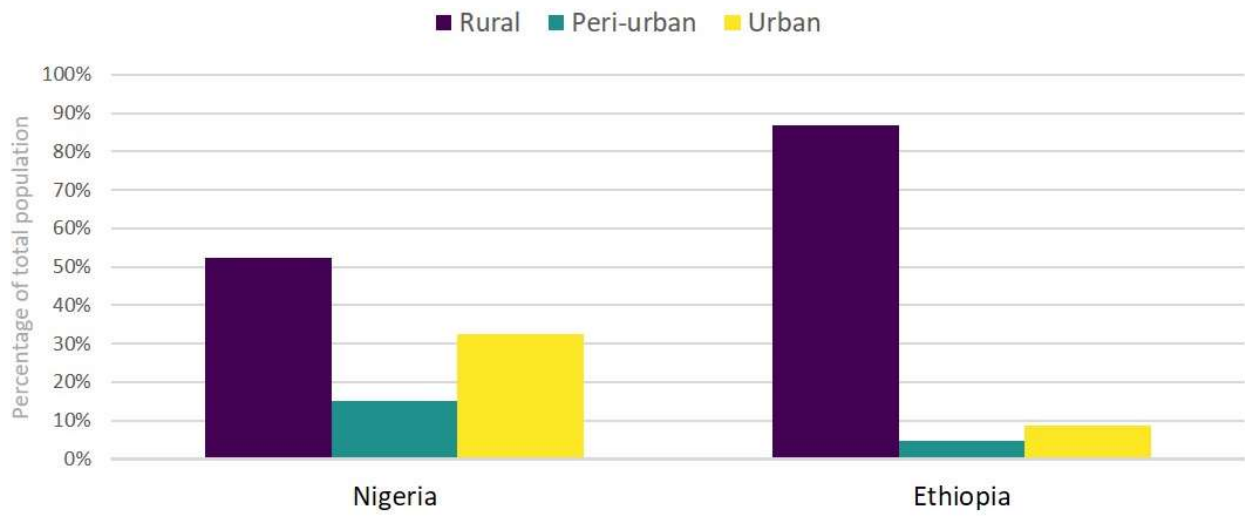
6. SUMMARY OF ANALYSIS

Summary of analysis begins with an overview of the general population distribution in both Nigeria and Ethiopia, with granular details of IDP population distribution for each country. After the brief overview of population distribution, demographic composition of the IDPs are provided, followed by an analysis of IDPs' access to services.

6.1 Population Distribution in Nigeria and Ethiopia

The population data provides the foundation for the comparative analysis between IDPs and non-IDPs in rural and urban areas. Based on WorldPop data, almost half of the Nigerian population (48%) live in peri-urban and urban areas. In contrast, 87 per cent of Ethiopians live in rural areas as opposed to those living in urban (9%) and peri-urban (4%) areas. The result is similar to the World Bank's data, which determines urban population based on population estimates and urban ratios from the United Nations World Urbanization Prospects²⁰. Comparatively, the urbanization structure of Nigeria is different from that of Ethiopia. See Figure 4 for the area ratio between urban, peri-urban and rural areas. Figure 5 shows the difference between urbanization levels in Nigeria and Ethiopia, based on 2015 WorldPop estimates.

²⁰ World Bank, 2019. *Urban population (% of total): all countries and economies*. Available at: <https://data.worldbank.org/indicator/SP.POP.TOTL>



Type	Nigerian Pop.	Nigerian Pop. (%)	Ethiopian Pop.	Ethiopian Pop. (%)
Rural	94,629,123	52.3%	986,119,914	86.8%
Peri-urban	27,450,786	15.1%	4,577,748	4.1%
Urban	58,966,202	32.6%	8,542,434	8.6%
Total	181,046,111	100.0%	99,240,096	100.0%

Figure 4. Comparison between the urbanization levels of Nigeria and Ethiopia. 2015 WorldPop estimates.

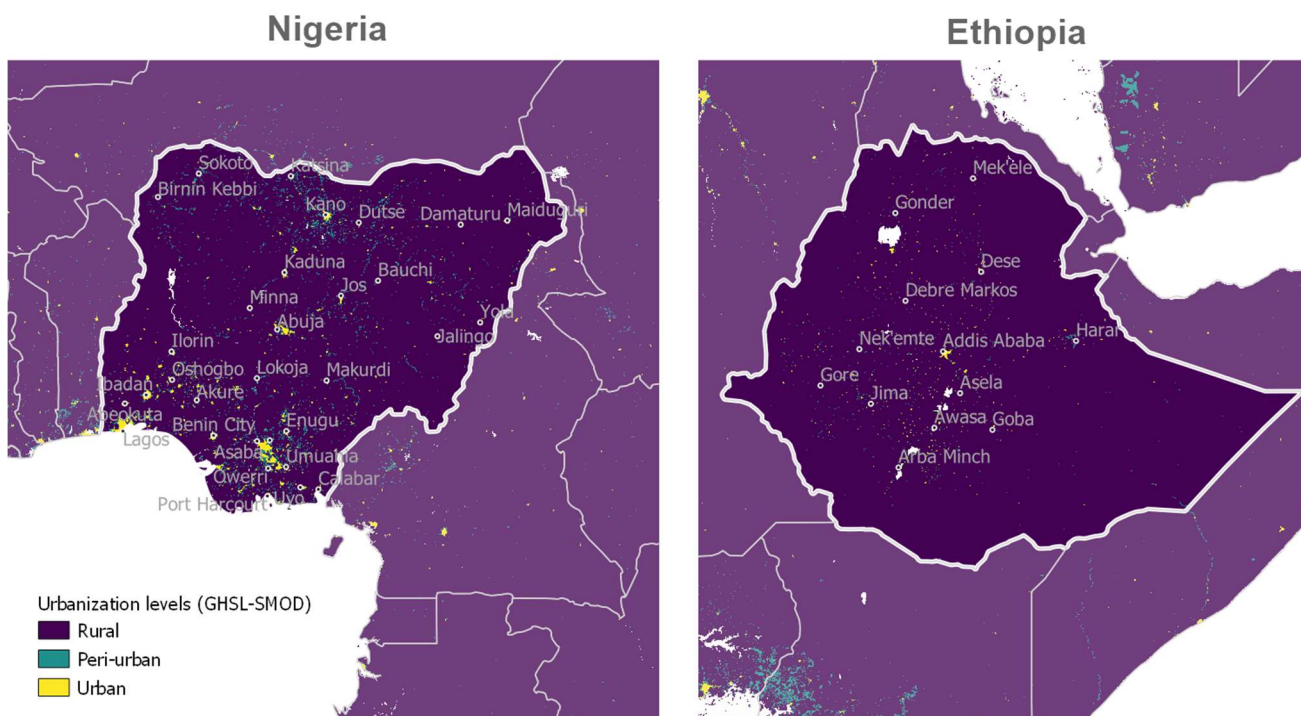


Figure 5. Map showing rural (purple), peri-urban (green) and urban (yellow) areas in Nigeria and Ethiopia.

6.2 Internally Displaced Persons Distribution

The escalation of violence in Nigeria since 2014 resulted in mass displacement throughout the north-eastern region. During DTM’s Round 25 (October 2018), 2,020,163 IDPs were identified. Of these, 72 per cent of the total number of IDPs were in Borno state, with 9.8 per cent in Adamawa, 6.7 per cent in Yobe, 5.6 per cent in Taraba, 3.3 per cent in Bauchi and 1.9 per cent in Gombe.

In Ethiopia (Round 14, December 2018), most of the IDP population is distributed in the south-eastern regions (Somali and Oromia). The largest concentration of IDPs were identified in Borena (20%) and East Harerge (16.8%). The rest of the IDP population were mainly distributed throughout different zones in the Somali and Oromia regions. See the map below for a breakdown of displacement by administrative zones.

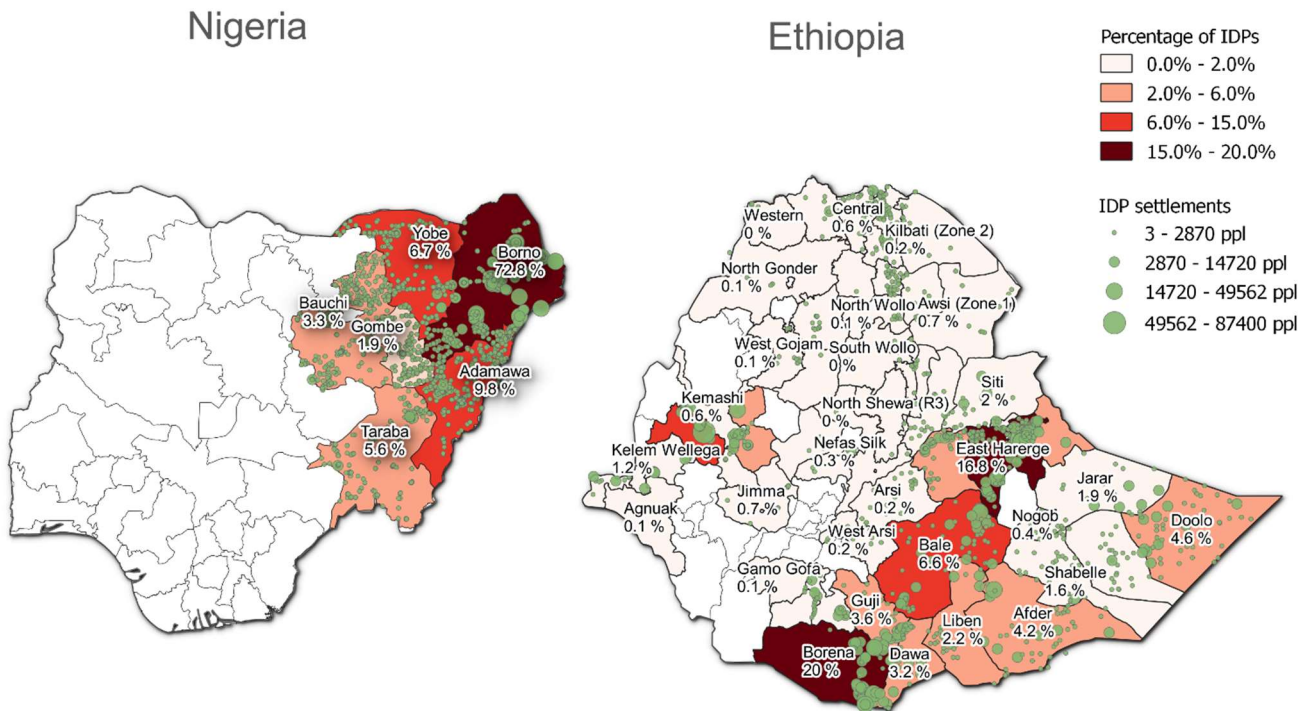


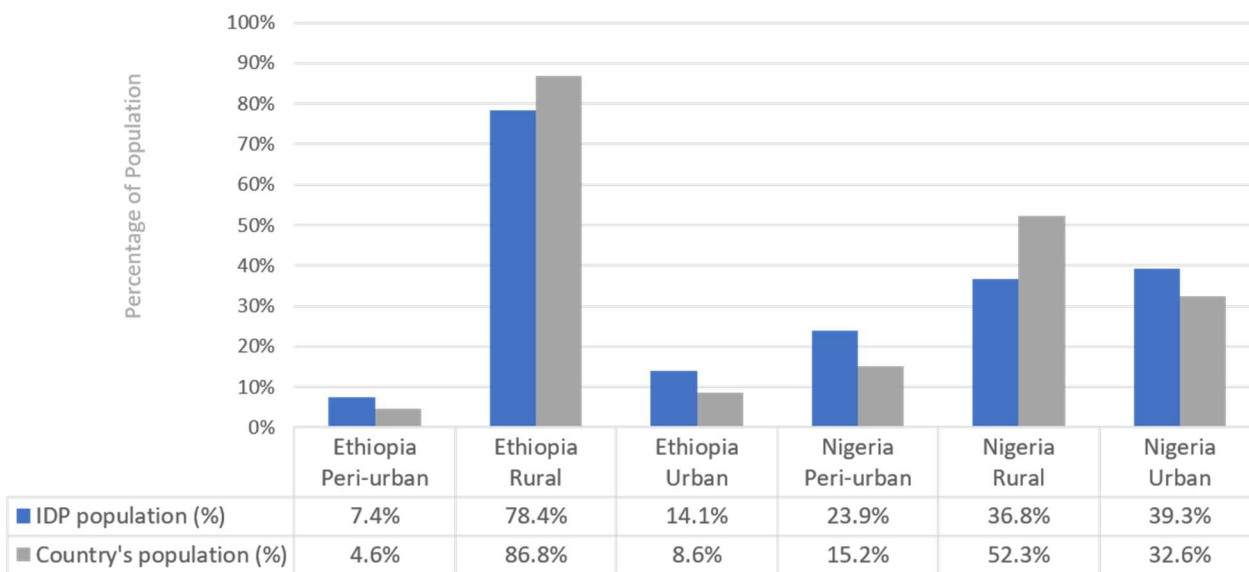
Figure 6. Spatial distribution of IDPs in Nigeria and Ethiopia.

6.3 Comparative analysis: IDP distribution vs. country's population distribution.

The distribution across urban classes of total populations using WorldPop data were compared with the distribution across urban classes of displaced populations based on DTM data. The urban classes of rural, peri-urban and urban were taken from JRC.

The distribution of internally displaced persons was analyzed using DTM data round 25 for Nigeria (October 2018) and round 14 for Ethiopia (December 2018).

Out of the 181 million people in Nigeria, approximately two million people have been internally displaced, of which 63.2 per cent are concentrated in urban and peri-urban settlements, compared to 47.7 per cent of Nigeria's total population. In Ethiopia, roughly 2.3 million of the 99.2 million people have been displaced with 21.6 per cent of IDPs living in urban and peri-urban areas while only 13.2 per cent of Ethiopia's total population live in urban and peri-urban areas. While IDPs broadly mirror general population trends, they are slightly over represented in urban areas. The chart and table below illustrate this example:



Type	Country	Total Pop.	Total Pop. (%)	IDP Pop.	IDP Pop. (%)
Rural	Nigeria	94,629,123	52.3%	743,692	36.8%
Peri-urban	Nigeria	27,450,786	15.1%	482,659	23.9%
Urban	Nigeria	58,966,202	32.6%	793,812	39.3%
Total	Nigeria	181,046,111	100%	2,020,163	100%
Rural	Ethiopia	86,119,914	86.8%	1,823,427	78.4%
Peri-urban	Ethiopia	4,577,748	4.6%	172,703	7.4%
Urban	Ethiopia	8,542,434	8.6%	328,377	14.2%
Total	Ethiopia	99,240,096	100%	2,324,507	100%

Figure 7. IDP population distribution vs. country's population distribution.

6.4 Demographics

Generally, understanding the demographic composition of the internally displaced population is crucial in identifying their collective and respective vulnerabilities and needs while also highlighting priorities and gaps in services. It is key in providing appropriate context-specific assistance as demographic data collected by DTM is used by different humanitarian actors involved in the Global Clusters²¹ to coordinate and facilitate protection and assistance to displaced populations²².

DTM's demographic data provides insight into the composition of the internally displaced persons. It shows the sex composition based on classification settings (rural vs. urban), where IDPs tend to go (rural vs. urban), the reason for displacement and their living situations (in camps or in host communities). In one aspect of the analysis, the reason for displacement is placed in rural and urban context. Specifically, it highlights where the internally displaced population are fleeing to, either rural or urban settings, due to conflict or disaster induced events.

On a final note, as opposed to data on IDP distribution, which is based on DTM data Round 25 (October 2018) for Nigeria and Round 14 (December 2018) for Ethiopia, demographic data is based on averages from all the rounds. Nigeria's data is based on the average of 25 rounds of demographic information while Ethiopia is based on the average of 14 rounds of demographic data.

6.4.1 Nigeria

The demographic composition of IDPs in urban areas consist of 55.5 per cent female and 44.5 per cent male, while rural areas observed a composition of 55.3 per cent female and 44.7 per cent male. Within the urban context, 61.9 per cent of IDPs are living in host communities and 38.1 per cent are living in camps. Comparatively, 54.4 per cent of IDPs are living in rural host communities with the remaining 45.6 per cent living in rural camps.

One of the reasons for displacement in Nigeria was conflict-related, with 52 per cent of conflict-affected IDPs now displaced in urban areas and the remaining 48 per cent now residing in rural areas.

²¹ Information on the Global Cluster is available at: <https://www.humanitarianresponse.info/en/about-clusters/what-is-the-cluster-approach>

²² An overview to DTMs collaboration with Global clusters can be found at: <https://displacement.iom.int/dtm-partners-toolkit/introduction-dtm-specific-clusters>

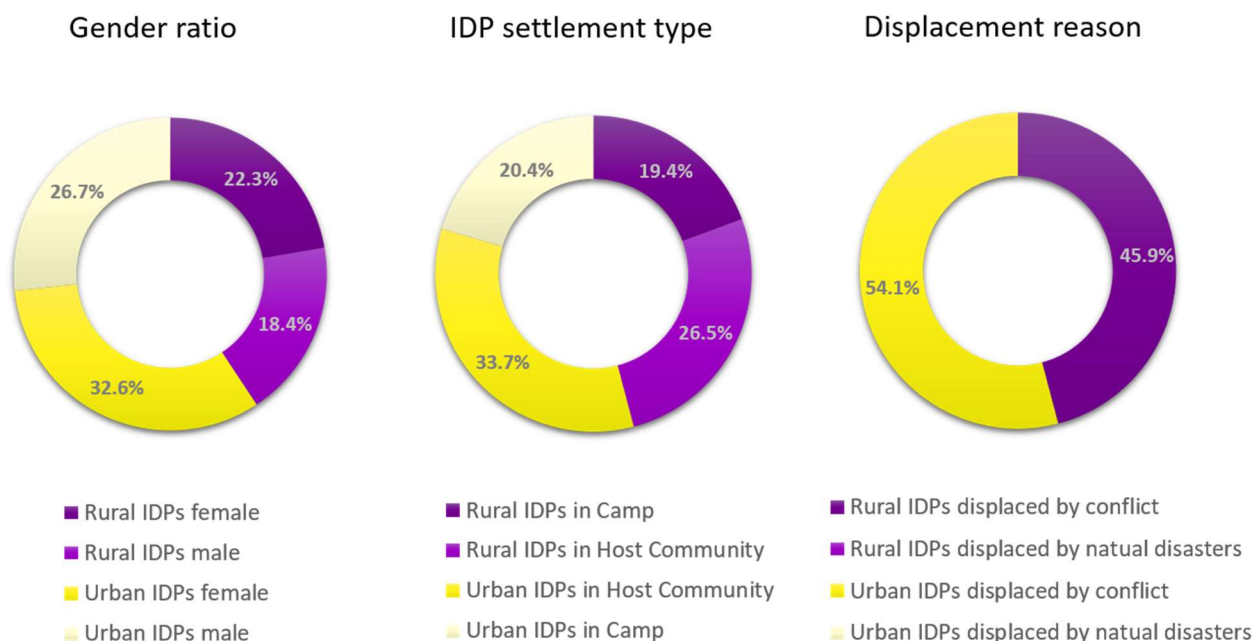


Figure 8. Gender ratio, IDP settlement type and displacement reason in Nigeria's IDP settlements.

6.4.2 Ethiopia

Unlike Nigeria, which has a higher percentage of displacement in urban centers, close to 90 per cent of the internally displaced population in Ethiopia are in rural areas, with 51.1 per cent female and 48.9 per cent male making up the rural demographic. The composition of IDPs living in urban centers consists of 50.5 per cent females and 49.5 per cent males. Of those in rural areas, an overwhelming number are living in camps at 75.6 per cent, with the remaining 24.4 per cent living with host communities. Within the urban context, this ratio is more balanced with 46.2 per cent of urban IDPS living in camps and 53.8 per cent in host communities.

In contrast to Nigeria, the reasons for displacement in Ethiopia consist of both conflicts, accounting for 64.6 per cent of IDPS, and disasters accounting for the remaining 35.4 per cent of IDPs. Interestingly, the clear majority (98.2%) of disaster-displaced IDPs reside in rural areas during their displacement.

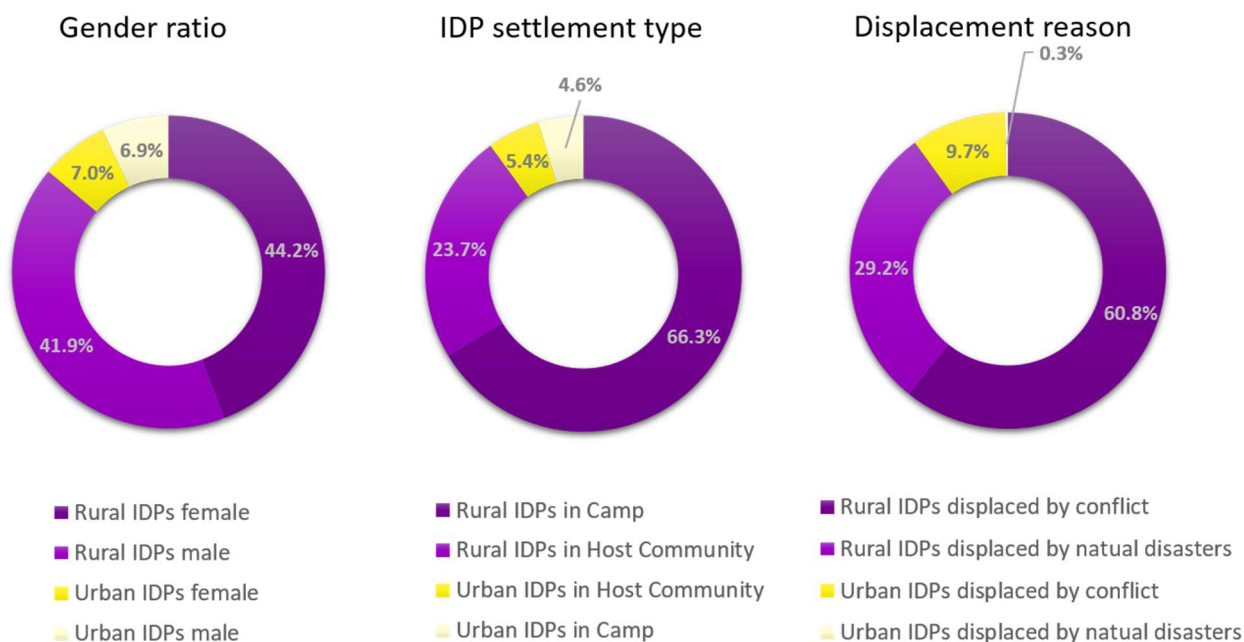


Figure 9. Gender ratio, IDP settlement type and displacement reason in Ethiopia's IDP settlements.

6.5 Access to Services

The trends in access to services were studied using DTM rounds of data between January 2018 to December 2018 for both Nigeria and Ethiopia. The data analyzed provides information into whether services can be accessed by IDPs in certain locations. Note, however, that this analysis does not provide information on the quality of the services, obstacles to access or inclusivity of access. DTM collects data on several essential services, including access to education, health facilities, food and income generating activities.

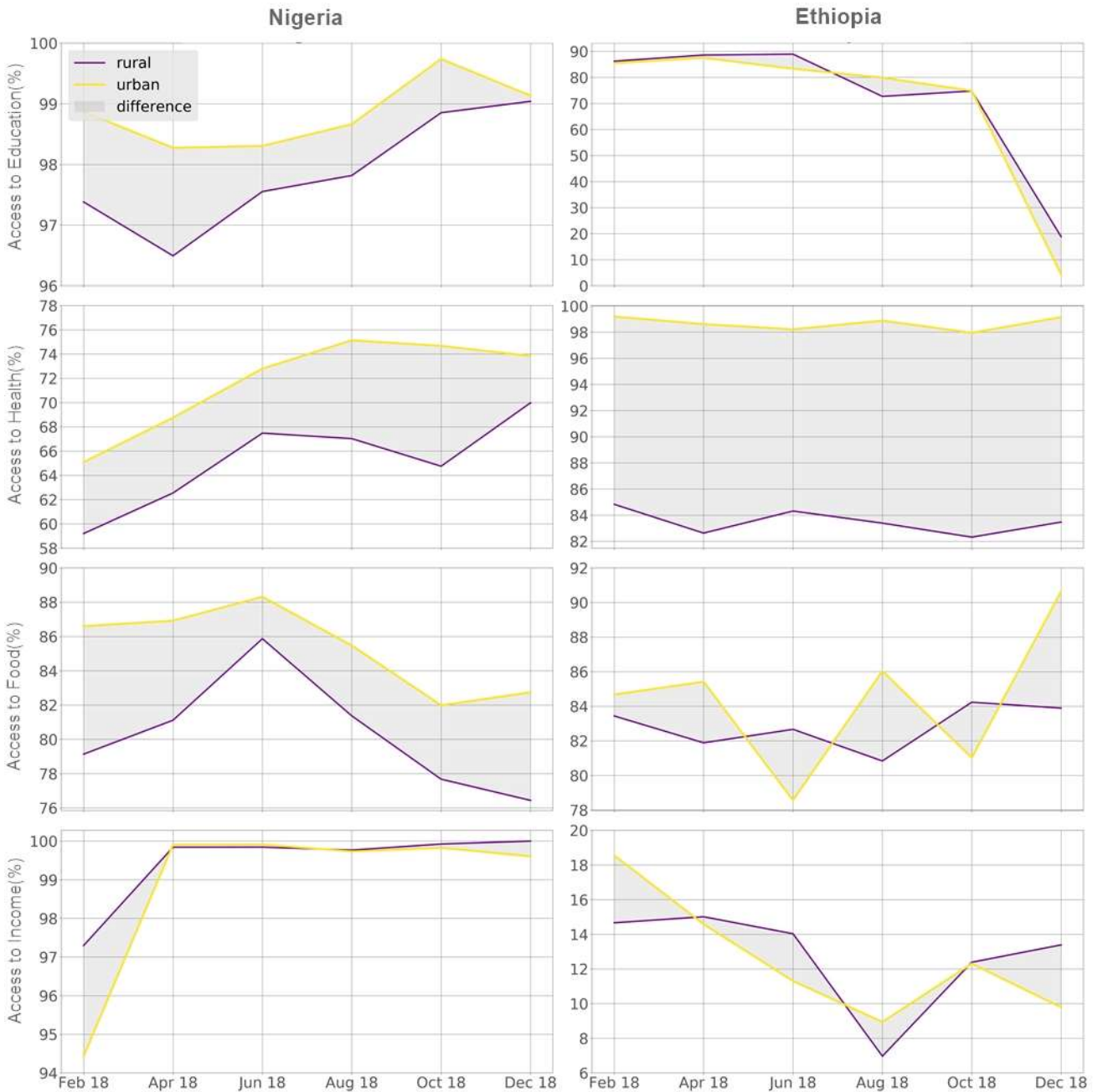


Figure 10. Gender ratio, IDP settlement type and displacement reason in Ethiopia's IDP settlements.

Figure 10 depicts DTM data time series of the percentage of IDP locations covered by DTM that entail access to a given service. Generally, DTM data on IDP locations in Nigeria and Ethiopia supports the common perception that access to such services is higher in urban displacement settings than in non-urban ones. In the case of Nigeria, access to education, health and food are consistently better for urban IDP locations with differences between urban and non-urban up to ten percentage points. Interestingly, access to income is essentially equal across levels of urbanization.

While data on health follows the pattern of increased access in urban areas, access to education, food and income fluctuates and does not show clear patterns between urban and non-urban displacement settings.

The above findings highlight that support towards essential services is even more crucial and needed for rural IDPs in Nigeria. At the same time, they suggest re-evaluating the assumption that access to income and economic opportunities are far higher in urban centers. However, it is important to note that DTM data presents only a small glimpse of a larger picture and more in-depth and qualitative data is needed to draw concrete conclusions.

7. DISCUSSION: LIMITATIONS AND RECOMMENDATIONS

The interpretation of results was based on DTM data, which provided the most granular source of information available on internally displaced persons. However, there were still some limitations within the analysis, which are outlined in greater detail in this section.

7.1 Coverage and bias:

DTM site assessments covers the north-eastern region of Nigeria (comprising of six states), which is where most of IDP population reside. However, recently, displacements have also occurred in other regions in Nigeria such as North Central and North West. These IDPs are displaced outside DTM's geographical coverage and are thus not represented in the analysis. Additionally, since identifying IDPs within highly populated areas is more complex than in poorly populated regions, IDPs living in urban settlements could be underrepresented.

Further note that while DTM collects displacement and mobility data in about 70 countries, location assessments as employed for the analysis presented here are only conducted in 30 countries. Many of the IDPs monitored by DTM are captured via baseline assessments, which provide area-based IDP numbers rather than detailed (location-based) information on access to services. Hence, analyses such as the above can only be performed for a fraction of all the IDPs monitored globally.

7.2 Accuracy and missing coordinates:

During data entry, the enumerator will register their current location automatically using a GPS receptor (usually using a smartphone device). If there is bad reception, the coordinates of an IDP settlement can be recorded incorrectly. Although most of these errors were corrected prior to the analysis, some IDP settlements, especially those in remote areas, could contain inaccurate coordinates.

The management of geographical data over time also proved to be a challenge. In order to minimize location-related errors, systematic data checks were conducted over time to ensure coordinates were consistent across the different collection rounds.

For settlements where GPS coordinates were missing, outdated or not captured in the field, a master list was used to crossmatch the information.

7.3 GHSL Model accuracy:

The GHSL raster model used for the analysis has a spatial resolution of 1 square kilometer. Therefore, boundaries between the different urbanization categories could contain misclassification errors. This error only applies to IDP settlements located at bordering classes. For instance, settlements falling between urban and peri-urban classes could be misclassified due to the spatial resolution of the model.

While a global definition of 'urban' is necessary to conduct cross-country comparisons, urbanization rates differ according to methodologies and data models utilized: the United Nations classifies Ethiopia as 19.5 per cent urban²³, while the Central Statistical Agency of Ethiopia (CAE) reports a 17 per cent urbanization rate²⁴. For this exercise, the model used to distinguish urban and non-urban IDPs had an urbanization level for Ethiopia in 2015 that resulted to be lower than the earlier rates (13.2 %).

7.4 Mobility patterns:

DTM data provides insight into the number of IDPs located in a specific area. However, there is limited data on the origins of IDPs – commonly only administrative level 2 [provincial] area of the majority of IDP in a certain location is recorded in DTM data. This limitation hinders a clear understanding of the mobility patterns in general, as well as mobility between levels of urbanization.

Different assumptions can be made based on the data available, for example, the comparison between urban/non-urban ratios of IDPs to that of the whole population does suggest displacement migration from rural to urban settings. However, additional research is needed to support this assumption.

7.5 Qualitative assessment:

Site assessments provide useful information for the rural-urban analysis; however, it is binary in its data collection. It evaluates whether an IDP, a migrant or a returnee accessed services, but it does not provide information on the quality of services. In fact, unless collecting information through additional surveys, DTM is restricted in terms of qualitative questions due to the scale of operations; the assessment of a given service quality is a specialized activity that has to be conducted by the cluster/service provider. As a result, a more holistic analysis is needed to understand the true needs and vulnerabilities of the affected population. Awareness about the quality of services enables humanitarian actors to potentially better understand why services are, or are not accessed, which can in turn assist in improving interventions. It is recommended that the site assessments are updated to provide a holistic understanding of the needs and vulnerabilities of affected populations. A preliminary update to the assessments includes providing numerical assessments of access to

²³ United Nations Population Division. World Urbanization Prospects: 2018 Revision. Available at : <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?end=2017&locations=ET-NG&start=1960&view=chart>

²⁴ Journal of Urban Management, 2018. Analysis of city size distribution in Ethiopia: Empirical evidence from 1984 to 2012. Available at: <https://www.sciencedirect.com/science/article/pii/S2226585618301353#bib30>

services. In this way, quantitative data are provided on qualitative questions. However, discussions are still ongoing and this is a work in progress.

7.6 Data consolidation

Consolidating data sets collected during different periods of time into a standardized database was a tedious and time-consuming task. DTM's data management team has developed different procedures to merge different rounds of data into a single database, as well as apply algorithms to correct location names and coordinates systematically.

Continuous consolidation as opposed to batch uploads of data received from country missions poses specific challenges. Although continuous consolidation allows for up-to-date information, it could lead to inconsistencies over time. The consolidation done for this paper has proved that more efforts should be made to ensure not only consistency at round level, but also across all the different rounds as a normal workflow.

Although DTM's site assessments contains the same core components across different humanitarian contexts, some survey questions might be formulated in a different manner in each of the country missions. In line with this issue, DTM is in the process of developing a data library which will ensure scalability and will facilitate comparative analysis using data from different countries.

8. NEXT STEPS

This report aims to contribute to discussions involving displacement from a rural-urban dimension, specifically examining IDPs' access to services using DTM data. DTM data provided the most granular data available, with detailed locality description for the displaced population. DTM has the potential to make a significant contribution to the understanding of displacement analyzed from an urban-rural dimension to help humanitarian and developmental actors navigate the complex dynamics of displacement in urban landscapes.

DTM data can help to identify not only whether access to services is addressed but why it is or is not accessed. This can help to identify practices that support both immediate and longer-term needs, particularly as displacement is increasingly becoming protracted, with the average length of displacement ranging from 17 years²⁵ to 23 years²⁶. It is crucial to collect data not only following emergencies or immediate responses but long after these events to understand the continued and evolving needs and vulnerabilities of the internally displaced and its impact on the long-term situation.

Additionally, and as stated previously, the limitation of mobility data prevents this report's analysis on movement patterns. As such, further research on the rural-urban movements related to displacement is a point of interest. This can shed light on whether this movement pattern has affected

²⁵ Center on International Cooperation (CIC), 2015. *Addressing Protracted Displacement: A Framework for Development Humanitarian Cooperation*, p.2. Available at

https://cic.nyu.edu/sites/default/files/addressing_protracted_displacement_a_think_piece_dec_2015.pdf

²⁶ Overseas Development Institute, 2015. *Protracted displacement: uncertain paths to self-reliance in exile*, p. 1. Available at <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9851.pdf>

urbanization. Existing bodies of literature highlight economic migration as a driver for urbanization²⁷; however, there is a lack of information with substantive quantitative sources on whether natural hazards and armed conflicts contribute to rapid urbanization in cities.

DTM continuously seeks to improve its methodology for data collection, in order to provide critical information on displaced and mobile populations and to better enable decision-makers in developing effective and targeted responses. As certain gaps in information have been identified, updates to this data collection process will be evaluated to assist in better differentiating the needs and circumstances of both urban and non-urban IDPs.

²⁷ Department of Economic and Social Affairs United Nations Secretariat, 2017. Drivers of Migration and Urbanization in Africa: Key Trends and Issues, p.2. Available at <https://www.un.org/en/development/desa/population/events/pdf/expert/27/papers/III/paper-Awunbila-final.pdf>