



DTM MULTI-SECTORAL LOCATION ASSESSMENT NIGERIA

SUMMARY REPORT ON ENERGY ACCESS

ROUND 7 (North Central & North West Zones) and ROUND 38 (North East Zone)

November 2021





Figure 1: Hauwa is one of the 1,400 persons who received a solar powered lamp by IOM at the El-Miskin Camp for Internally Displaced Persons in the North East Zone of Nigeria. Solar lamps improve security inside camps and minimize the environmental impact. © IOM, 2019.

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ACKNOWLEDGEMENTS

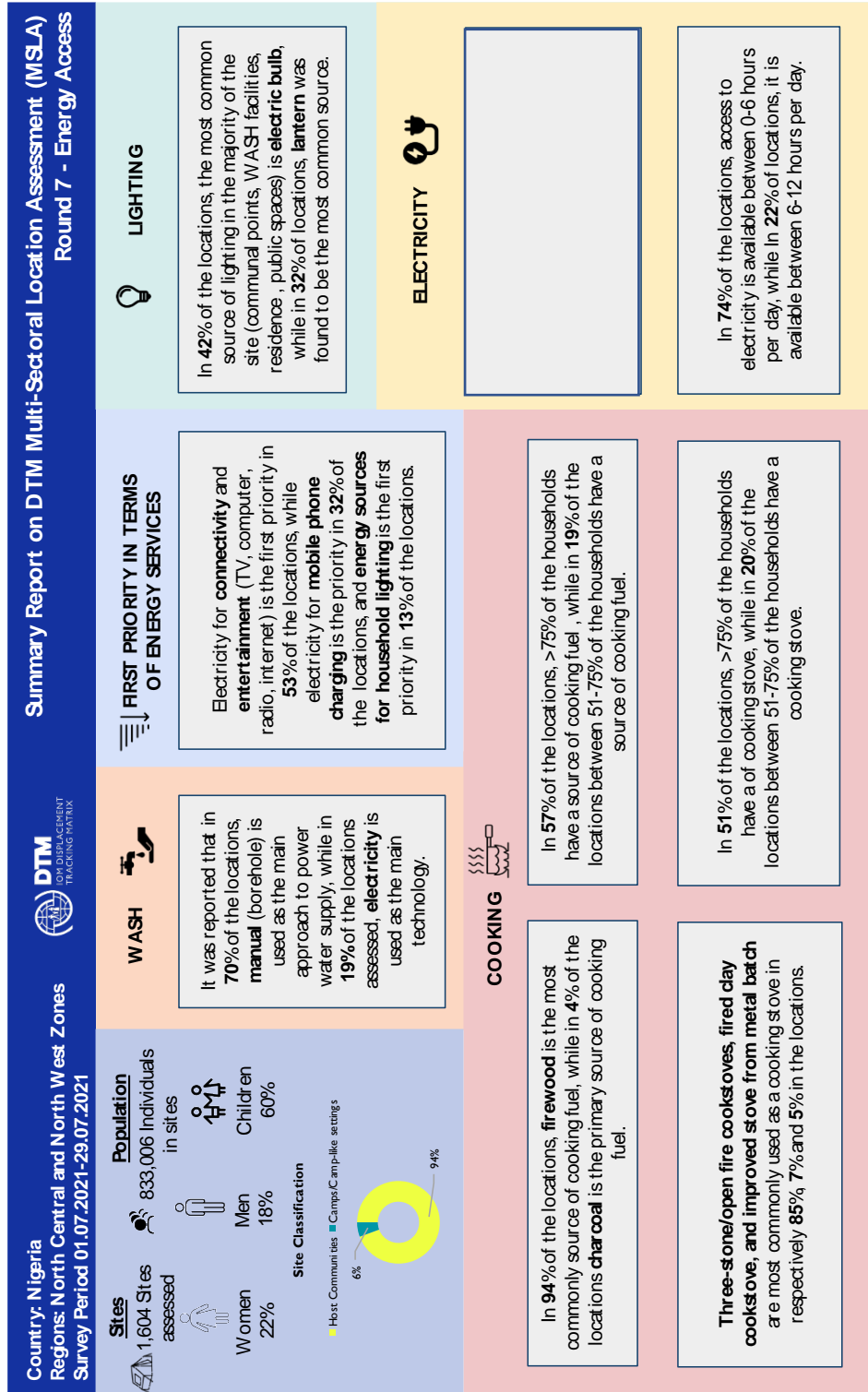
This report was prepared by Anaïs Matthey-Junod and Adam Ostaszewski, both NORCAP Deployees as Energy Experts to IOM Headquarters, in collaboration with the IOM Nigeria team, including Kristof Orlans (DTM Reporting and Analysis Officer) and David Musombi (DTM Project Officer).

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I SUMMARY OF THE MAIN FINDINGS

I.1 NORTH CENTRAL AND NORTH WEST ZONES



I.2 North East Zone

Summary Report on DTM Multi-Sectoral Location Assessment (MSLA)
Round 38 - Energy Access

Country: Nigeria
Regions: North East Zone
Survey Period: 21.06.2021-30.07.2021

DTM
ON DISBURSEMENT
TRACKING MATRIX

Sites
2,379 Sites assessed

Population
2,182,613 Individuals in sites

Site Classification

Host Communities	13%
Camps/Camp-like settings	87%

WASH

It was reported that in **50%** of the locations, **manual** (borehole) is used as the main approach to power water supply, while in **19%** of the locations assessed, **electricity and solar energy** is used as the main technology.

FIRST PRIORITY IN TERMS OF ENERGY SERVICES

Electricity for **mobile phone charging** is the first priority in **47%** of the locations, while Electricity for **connectivity and entertainment** (TV, computer, radio, internet) is the priority in **39%** of the locations.

LIGHTING

In **36%** of the locations, the most common source of lighting in the majority of the site (communal points, WASH facilities, residence, public spaces) is **lantern**, while in **27%** of locations, **electric bulb** was found to be the most common source.

ELECTRICITY

In **53%** of the locations having electricity (50%), the main source of electricity was found to be **liquified fuel** (petrol/diesel generator), while the **national power grid distribution** was found to be the main source in **44%** of the locations.

COOKING

In **90%** of the locations, **firewood** is the most commonly source of cooking fuel, while in **9%** of the locations **charcoal** is the primary source of cooking fuel.

WASH

In **33%** of the locations, **>75%** of the households have a of cooking stove, while in **27%** of the locations between 51-75% of the households have a cooking stove.

COOKING

Three-stone/open fire cookstoves, fired clay cookstove, and improved stove from metal batch are most commonly used as a cooking stove in respectively **84%**, **12%** and **4%** in the locations.

LIGHTING

In **86%** of the locations having electricity (50%), the number of hours per day during which electricity is available is unknown. In **7%** of the locations, electricity is available between 0-6 hours per day.

2 GENERAL OVERVIEW

This report presents a summary of the analysis of the Round 7 data collection of the Displacement Tracking Matrix (DTM) Multi-Sectoral Location Assessment (MLSA) in the North Central and North West Geopolitical Zones of Nigeria and Round 38 of the DTM MLSA in the North East Geopolitical Zone. For the first time, these assessments specifically included energy-related questions.

The assessment in the North Central and North West Regions was conducted through key informant interviews in a total of 1,604 locations across the States of Benue, Kaduna, Kano, Katsina, Nasarawa, Plateau, Sokoto, and Zamfara. The assessment was done between the 1st of July and the 29th of July 2021. In total, these locations host 833'006 Internally Displaced Persons (IDPs) (134'908 households).

The assessment in the North East Zone was conducted through key informant interviews in a total of 2,379 locations across the States of Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe. The assessment was done between the 21st of June 2021 and the 30th of July 2021. In total, these locations host 2'182'613 IDPs (444'781 households).

More information on the assessment methodology can be found in Section 5.

Definitions

- *Host community* is a local community in which internally displaced persons temporarily reside.
- *IDP camps/camp-like settings* are temporary facilities that provide immediate protection and assistance to displacement affected populations. They are not established to provide permanent solutions but offer a safe haven for IDPs in an attempt to meet their most basic needs. Camps and camp-like settings include formal planned camps, as well as spontaneous sites, collective settlements, and transit centers.

The summary report is organized according to two main topics (household energy access and energy at the community level) and four thematic areas (electricity, lighting, cooking and water, sanitation and hygiene (WASH)). Electricity is often used to power lighting, space heating/cooling, streetlighting, and sometimes cooking and WASH activities. However, where electricity access is unavailable, alternative energy sources such as fuel (wood, kerosene, etc.) or hand power (manual) are used. In this report, the thematic areas are explored both in terms of electric and non-electric energy

Site Classification (North Central and North West)

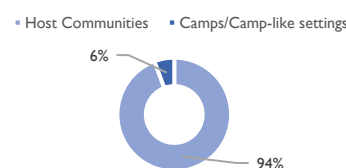


Figure 2: Site Classification (North Central and North West)

Site Classification (North East)

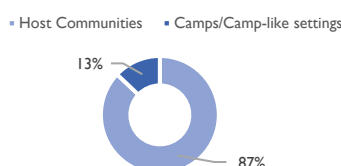


Figure 3: Site Classification (North East)

Demographic profile

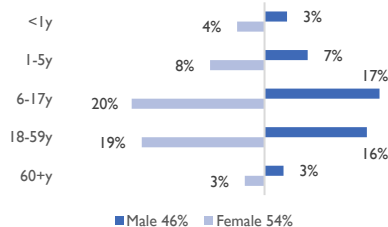


Figure 4: IDPs by age group and sex (North East)

Demographic profile

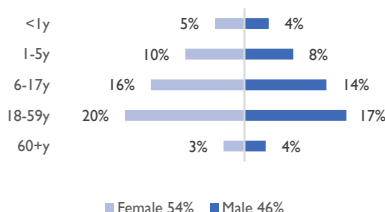


Figure 5: IDPs by age group and sex (North Central and North West)

sources. Finally, electricity access can be on-grid or off-grid (solar home systems, diesel generators, etc.) while energy sources can either be fossil-fuel based, or clean and/or renewable.

It is important to highlight that energy access does not only consist of energy for cooking and basic lighting, but also energy for connectivity, productive uses, and basic services (education, health, WASH, etc.). Therefore, a holistic approach to evaluate the overall energy needs is used as an analytical framework in this report.

Energy access has long been defined as a binary issue (access versus no access). However, in reality there is a continuum of levels of access that depends on many parameters. In order to reflect that, the **ESMAP** Programme from the World Bank has established a **Multi-Tier Framework (MTF)** that offers a more comprehensive definition and metric of energy access based on nine attributes of energy supply (see Figure 6¹). This framework is now recognized and adopted by the majority of development actors and the energy sector since its publication in 2015. Therefore, the DTM energy indicators from the newly developed Energy Module² have been defined to be aligned with the MTF and enable the evaluation of the (estimated) Tier of energy access.

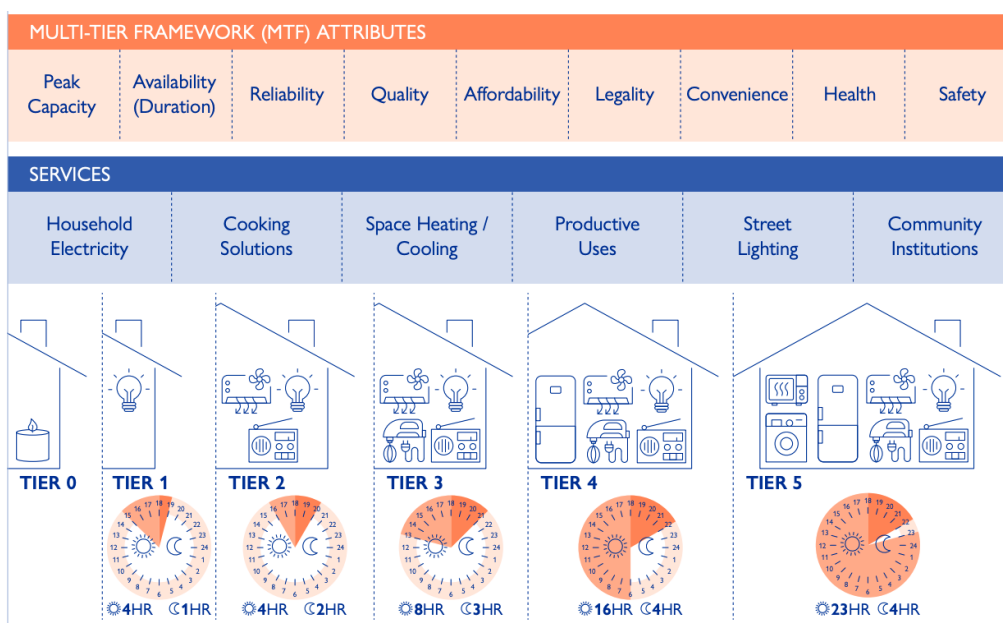


Figure 6: MTF attributes and energy services (adapted from Rysankova et al. (2016), slide 9)

¹ Reference: Rysankova, D., Portale, E., Carletto, G. (5 April 2016). Introduction to the Multi-Tier Framework. ESMAP. Available online: https://www.seforall.org/sites/default/files/MTFpresentation_SE4ALL_April5.PDF

² See <https://displacement.iom.int/dtm-partners-toolkit/guide/dtm-energy-0>, <https://displacement.iom.int/dtm-partners-toolkit/energy> and <https://displacement.iom.int/dtm-partners-toolkit/field-companion-pdf>

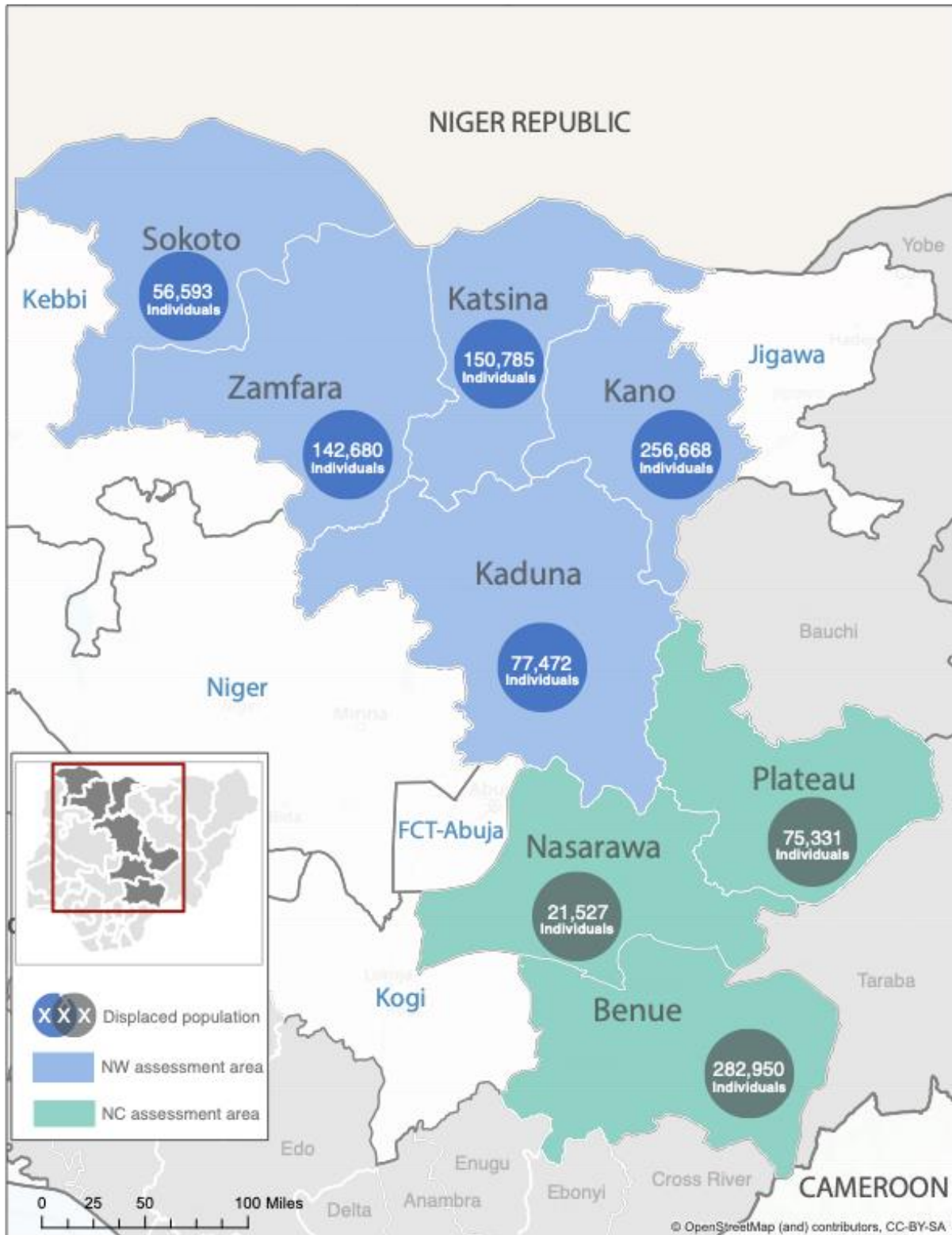


Figure 7: Map of the number of displaced people hosted in the assessed sites in North Central and North West Zones

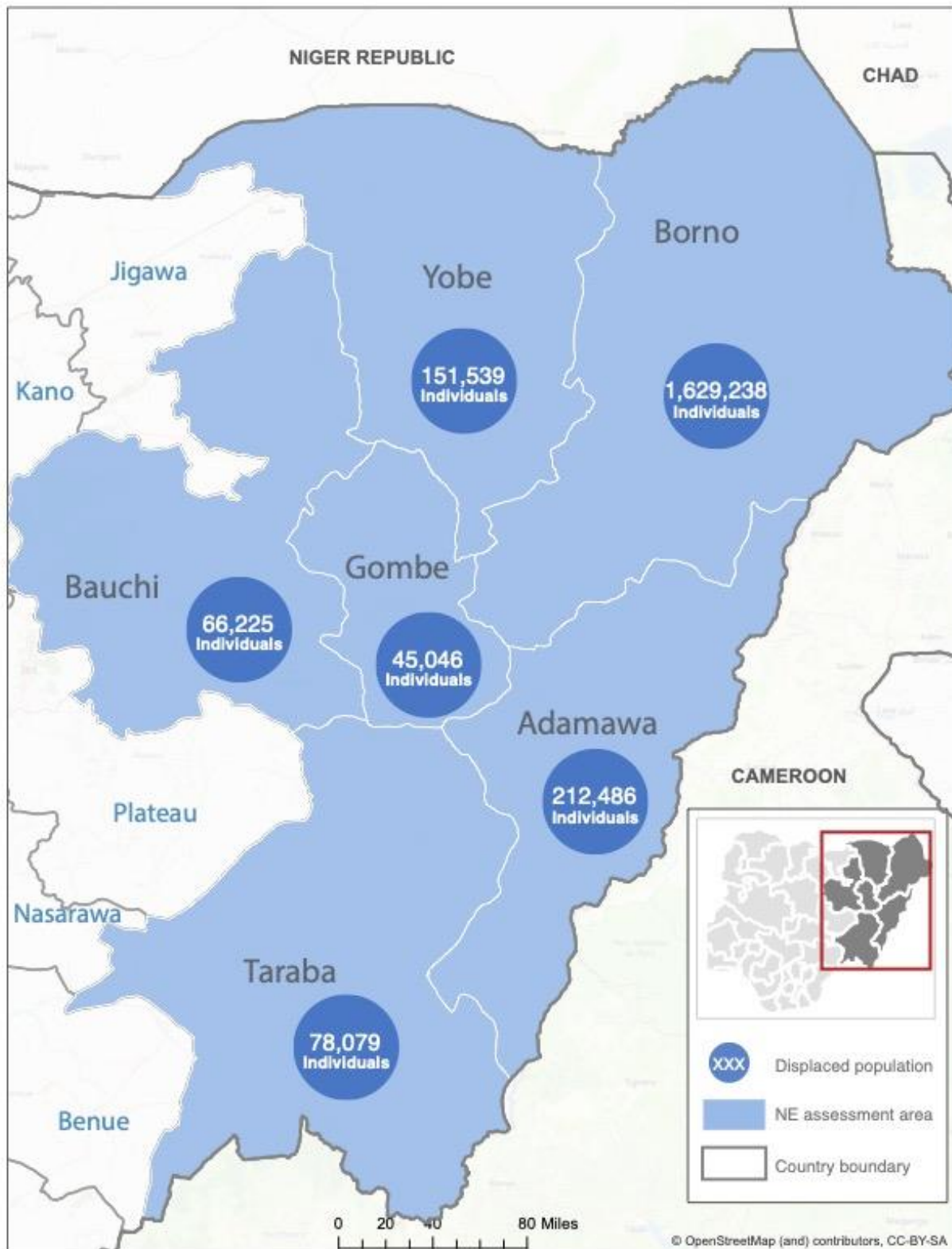


Figure 8: Map of the number of displaced people hosted in the assessed sites in North East Zone

3 PART I: NORTH CENTRAL AND NORTH WEST ZONE

3.1 HOUSEHOLD³ ENERGY ACCESS

In 97% of the locations assessed in the North West and North Central Zone, IDPs have access to a source of energy. For IDPs residing in host communities, the access to a source of energy is reported at 98%, while for IDPs hosted in camp/camp-like settings, the access is reported at 89%. In the majority of the locations assessed, these sources of energy are located on-site, meaning within the camp or camp-like setting or within the village for IDPs residing with host communities (87% for IDPs in host communities and 70% for IDPs in camps/camp-like settings). Figure 9 and Figure 10 show the breakdown per State. In 43% of the camps/camp-like settings in the state of Nasarawa for example, IDPs have no access to a source of energy, while in the States Kaduna and Plateau, all IDPs have access to a source of energy that can be found within the camp.

In sites with no access to energy (3%), the distance to electricity points was reported to be the main challenge in 76% of the locations assessed. The cost of electricity (too expensive) was reported to be the main challenge in 20% of the locations. Figure 12 and Figure 13 show the breakdown by State. In locations where IDPs reside among the host communities in Zamfara State, key informants in 50% of the locations reported that the residents and IDPs have to travel too far away to collect firewood. In camp/camp-like settings in Nasarawa State, a lack of electricity points (connection) was reported to be the main challenge in 17% of the locations.

In sites with no access to energy (3%), the preferred source of energy reported would be electricity (57%) and firewood (34%). **Error! Reference source not found.** shows the breakdown per State.

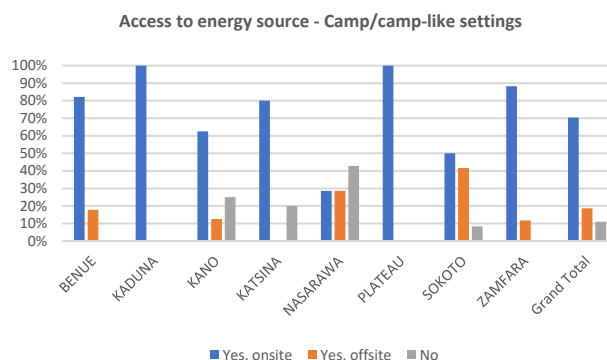


Figure 9: Access to energy source - Camp/camp-like settings

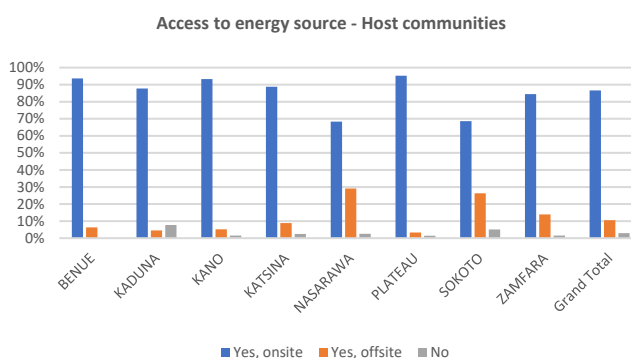


Figure 10: Access to energy source - Host communities

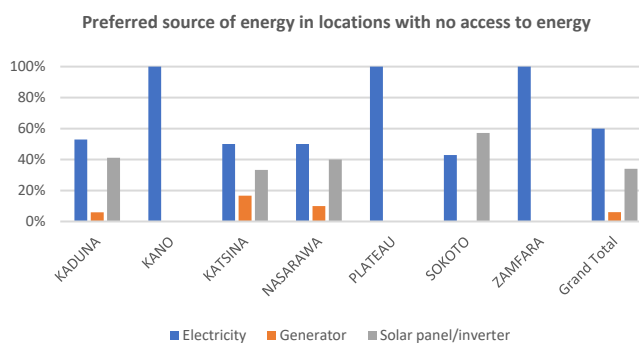


Figure 11: Preferred source of energy in locations with no access to energy

³ Data collection was done at location level through key informant interviews, but questions regarding energy access were related to households' energy practices.

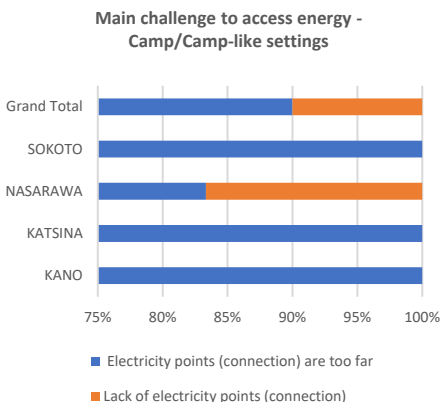


Figure 12: Main challenge to access energy - Camp/Camp-like settings

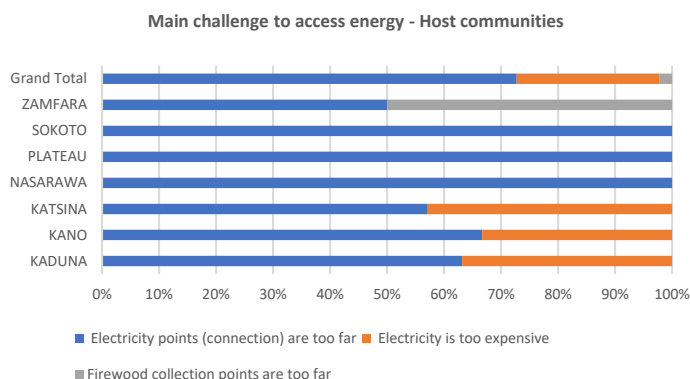


Figure 13: Main challenge to access energy - Host communities

3.1.1 MAIN PRIORITIES ASSOCIATED WITH ENERGY ACCESS

In the 1,604 locations assessed, the first priority in terms of energy services are: electricity for connectivity and entertainment (TV, computer, radio, internet) reported in 53% of locations, electricity for mobile phone charging in 32% of locations, energy sources for household lighting in 13% of locations and energy for streetlighting in 1% of locations. Figure 14 shows the breakdown per state in terms of the first priority in locations categorized as camp/camp-like settings where IDPs live (6% of locations assessed). Figure 15 below shows the breakdown per state in terms of the first priority in locations where IDPs reside among the host communities (94% of locations assessed).

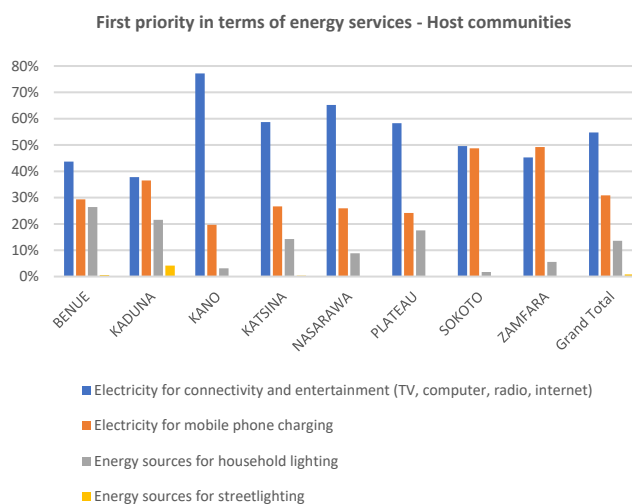


Figure 14: First priority in terms of energy services for IDPs in host communities

The findings show an inversed trend in host communities and camp/camp-like settings: 55% of the locations where IDPs reside among host communities identified electricity for connectivity and entertainment as their first priority compared to 34% of the locations where IDPs live in camp/camp-like setting. On the other hand, electricity for mobile phone charging was found to be a first priority in 31% of the locations where IDPs reside among host communities compared to in 53% of locations where IDPs live in camp/camp-like settings. This demonstrates that the main priority related to energy access shifts in accordance with the type of IDP location. Moreover, it is worth noting that in camp/camp-like settings in Katsina State, about 40% of the

locations assessed were reporting energy for household lighting as a first priority, which is relatively higher than in other states.

Figure 16 illustrates the second and third priorities in locations assessed. In locations where IDPs reside in camp/camp-like settings, the second priority is access to cooking fuel in 53% of cases and electricity for mobile phone charging in 18% of cases. Furthermore, the third priority is access to heating fuel (space heating) in 53% of cases and access to cooking fuel in 18% of cases. In locations where IDPs reside among host communities, the second priority is access to cooking fuel (31%) and electricity for mobile phone charging (31%). Moreover, the third priority is access to cooking fuel (31%) and access to heating fuel (space heating).

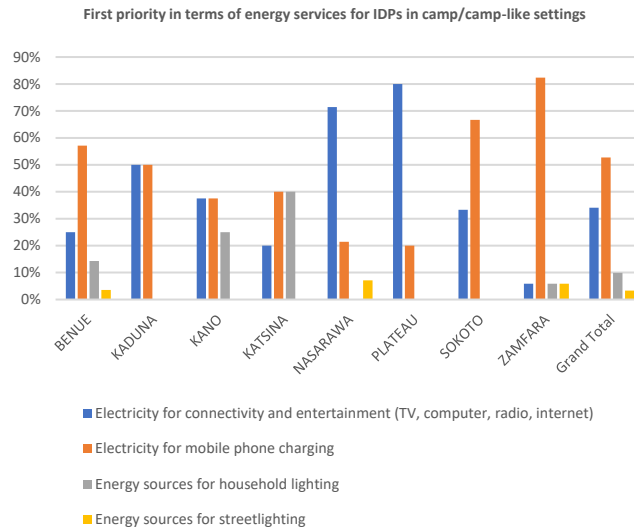


Figure 15: First priority in terms of energy services for IDPs in camp/camp-like settings

Overall, the three main priorities of IDPs across all locations assessed are 1) fuel for cooking and/or heating (space heating), 2) electricity for basic connectivity such as mobile phone charging, and entertainment (TV, radio, computer, internet) and 3) energy sources for household lighting. The second priority in camp/camp-like settings is access to cooking fuel (53%) whereas in locations where IDPs reside within the host community, the second priority is electricity for mobile phone charging (31%) and access to cooking fuel (31%). On the other hand, the third priority in camp/camp-like settings is access to heating fuel (53%) whereas in locations where IDPs reside within the host community, the second priority is access to heating fuel (31%) and access to cooking fuel (31%).

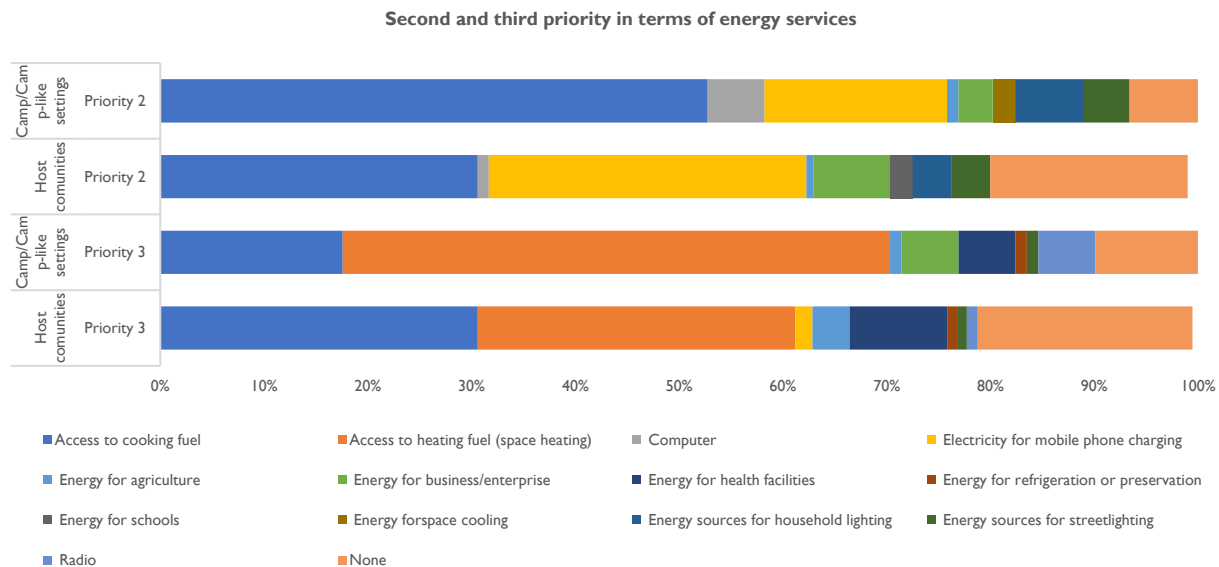


Figure 16: Second and third priority in terms of energy services

3.1.2 ENERGY FOR COOKING

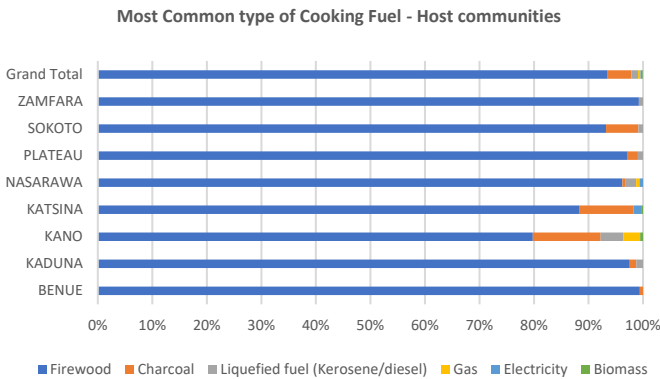


Figure 17: Most Common type of Cooking Fuel - Host communities

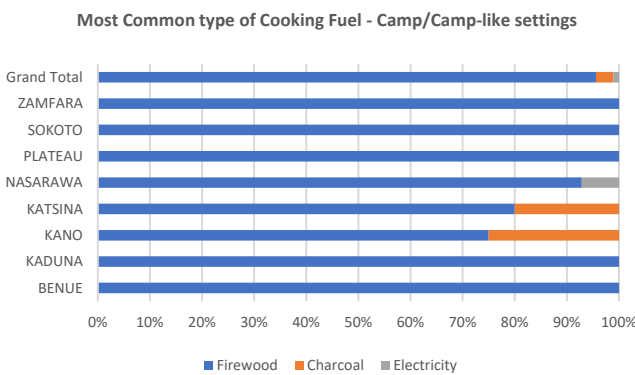


Figure 18: Most Common type of Cooking Fuel - Camp/Camp-like settings

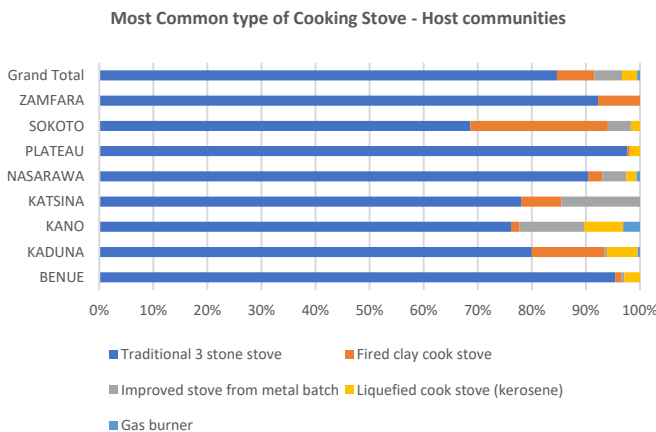


Figure 19: Most Common type of Cooking Stove - Host communities

In 94% of the locations assessed, firewood is reported to be the most common type of cooking fuel, while in 4% of the locations charcoal is the primary source of cooking fuel. Figure 17 and Figure 18 show the breakdown per state and type of settings.

This trend is observed both in locations where IDPs reside among the host communities and in camp/camp-like settings. Gas, biomass and liquefied fuel are the least common types of fuel used in host communities and not found to be used in camp/camp-like settings.

Three-stone/open fire cookstoves (85%), fired clay cookstoves (7%), and improved stoves from metal batch (5%) are the most commonly used cooking stoves in the locations assessed. Figure 19 and Figure 20 show the breakdown by state and type of setting.

One should note that cooking in overcrowded camp/camp-like settings often leads to fire outbreaks, destroying and damaging shelters and leaving households with no roof. This has been highlighted in multiple DTM flash reports.

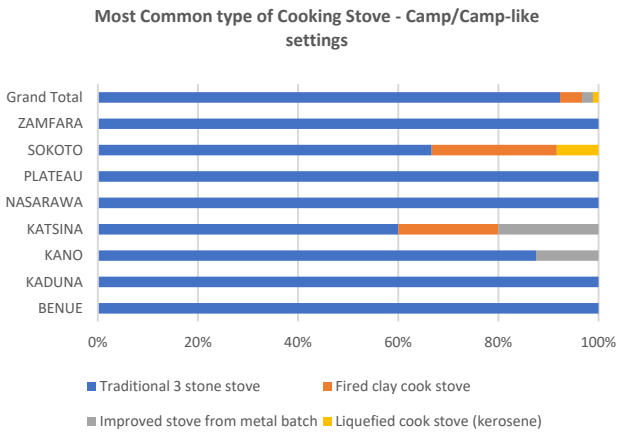


Figure 20: Most Common type of Cooking Stove - Camp/Camp-like settings

Moreover, in 57% of the locations assessed, more than 75% of the households have access to a source of cooking fuel, while in 19% of the locations between 51% and 75% of the households have access to a source of cooking fuel, in 11% of the locations between 25% and 50% of the households have access to a source of cooking fuel, in 9% of the locations <25% of the households have access to a source of cooking fuel and in 4% of the locations none of the households have access to a source of cooking fuel. Figure 21 shows the breakdown per state.

Finally, in 51% of the locations assessed, >75% of the households have a of cooking stove, in 20% of the locations between 51-75% of the households have a cooking stove, in 13% of the locations between 25-50% have a cooking stove, in 11% of the locations <25% have a cooking stove and in 4% of the locations none of the households have a cooking stove. Figure 22 shows the breakdown per state.

While in a majority of the locations assessed, >75% of the households have access to a source of cooking fuel and a cooking stove, the remaining share of households might have to share their cooking fuel and stoves with other families. These findings are consistent with the second and third priorities of the households in terms of energy services, which was found to be Access to cooking fuel (see Section 3.1.2).

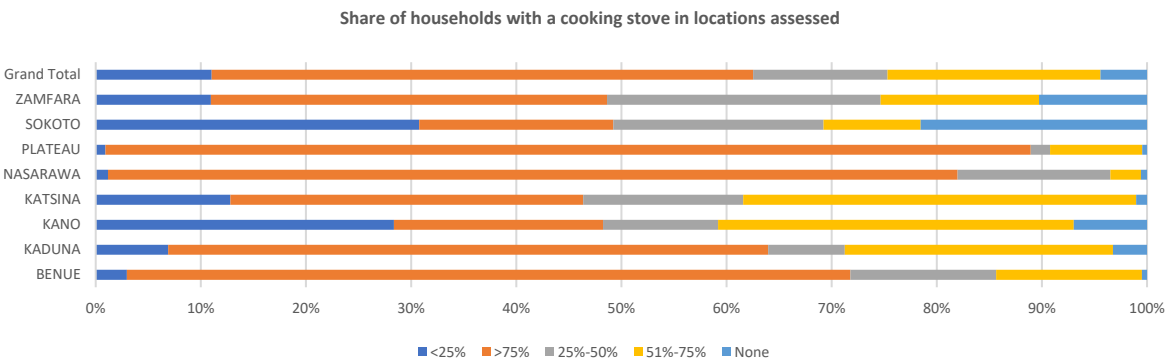


Figure 22: Share of households with a cooking stove in locations assessed

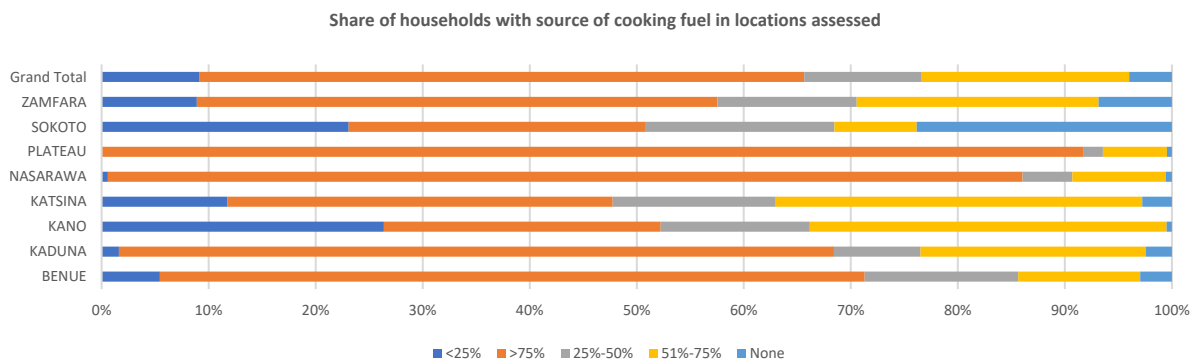


Figure 21: Share of households with source of cooking fuel in locations assessed

3.2 ELECTRICITY

In locations where IDPs are hosted by host communities where it was reported that electricity was the main source of energy support (52%), 74% of the locations assessed reported that people had access to electricity between 0-6 hours per day. In 22% of locations assessed, it was reported that people had access to electricity between 6-12 hours per day, while in 4% of the locations people reported 12-18 hours per day, and only 1% reported access of 18-24 hours per day. However, in camp/camp-like settings where it was reported that electricity was the main source of energy support (59%), 87% reported 0-6 hours of electricity access, 10% reported 6-12 hours, 2% reported 12-18 hours and 1% reported 18-24 hours per day. This shows that despite having some access to electricity, the duration of this access varies depending on the type of setting.

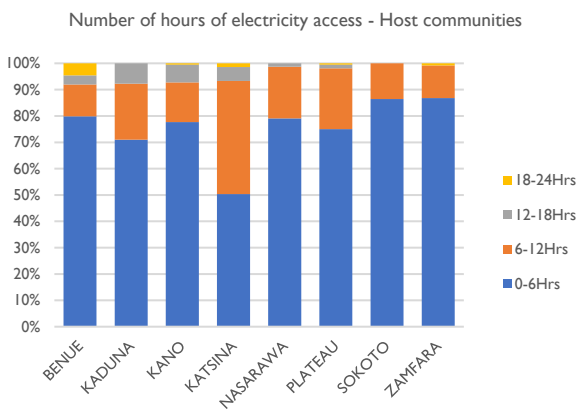


Figure 24: Number of hours of electricity access - Host communities

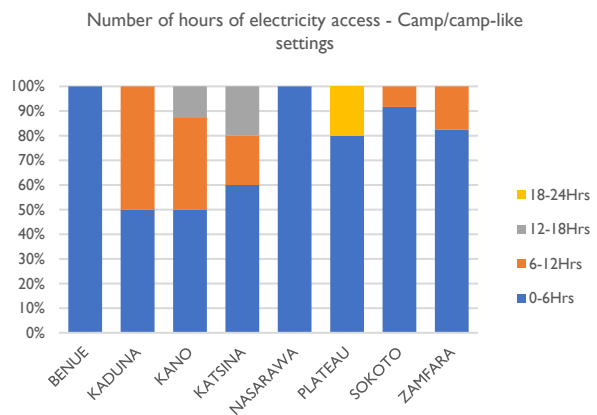


Figure 23: Number of hours of electricity access - Camp/camp-like settings

3.3 ENERGY ACCESS AT THE COMMUNITY LEVEL

3.3.1 Lighting

In 42% of the locations assessed, the most common source of lighting is electric bulbs. These are used in communal points, WASH facilities, residences and public spaces. In 32% of locations, lanterns are found to be the most common source while solar lamps are reported in 21% of the locations assessed. Liquefied fuel is reported in 4% of the locations assessed and candlelight in 1%. In camp/camp-like settings, lanterns are the most common source of lighting in 53% of the locations. In locations where IDPs are hosted among host communities, electric bulbs are the most common source of lighting in 43% of the locations. Figure 26 and Figure 25 show the breakdown per state for both types of displacement settings. Furthermore, a significant difference in the most common source of lighting can be observed in Benue and Kaduna States, where a large majority (86% of the locations) of IDPs in camp/camp-like settings use lanterns in Benue State as opposed to electric bulbs (100%) in Kaduna State.

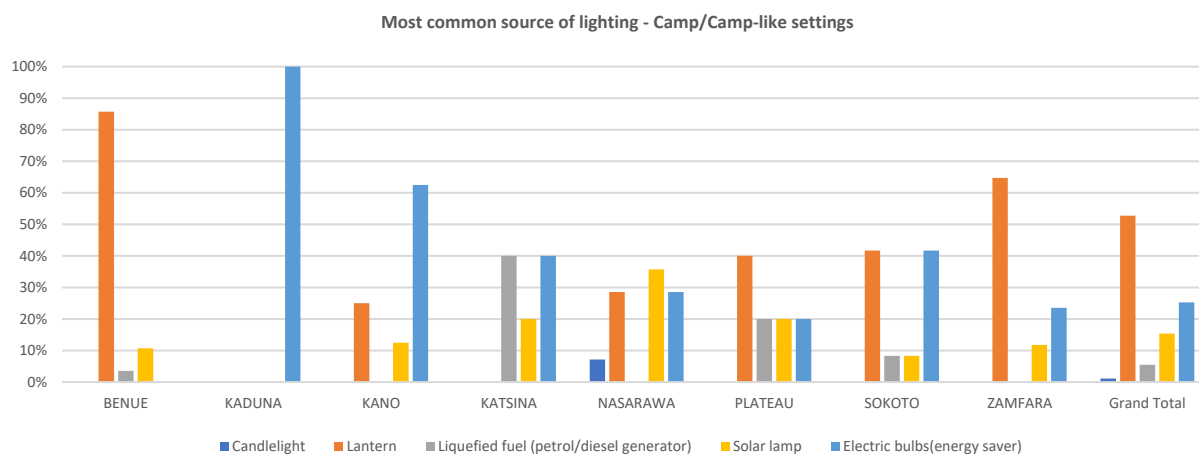


Figure 26: Most common source of lighting - Camp/Camp-like settings

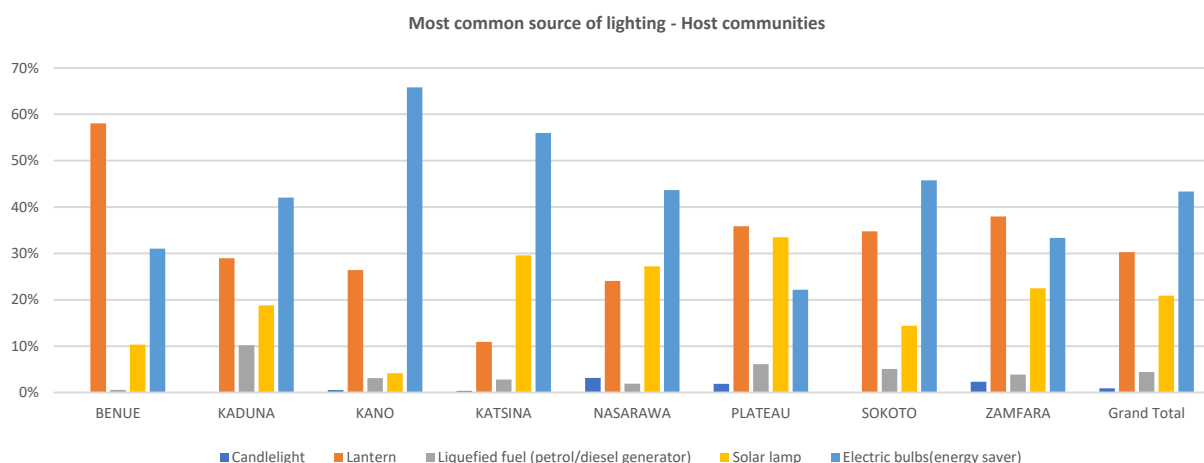


Figure 25: Most common source of lighting - Host communities

3.3.2 WASH

It was reported that in 70% of the locations assessed, manual (borehole) pumping is used as the main approach to power water supply. In 19% of the locations assessed, electricity from the national grid is used as the main technology to power water supply, while in solar energy and liquified fuel are used in respectively 7% and 4% of the locations assessed. For locations where IDPs are hosted among host communities, the same breakdown of the share of usage amongst different approaches can be observed, i.e. 70% of the locations mainly use manual (borehole), 19% electricity from the national grid, 7% solar, and 4% liquified fuel. For camp/camp-like settings, the breakdown is 69% of the locations mainly use manual (borehole), 12% electricity from the national grid, 11% solar, and 8% liquified fuel. Solar energy is more widely used in camp/camp-like settings (11%) than in host communities (7%). However, the share of non-manual (electrical) power supply approaches is similar in both types of displacement settings (approximately 70% of the locations).

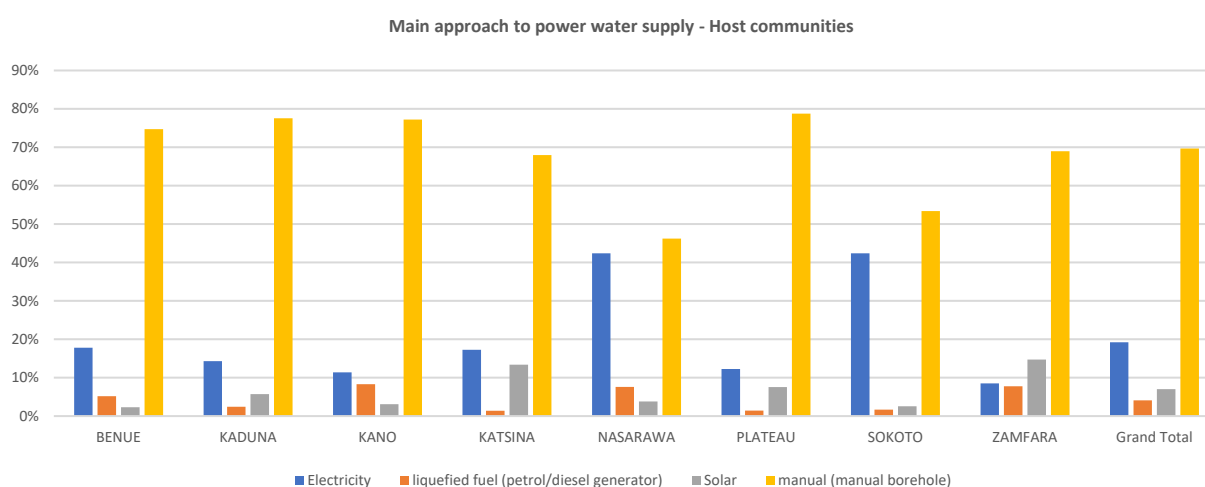


Figure 27: Main approach to power water supply – Host communities

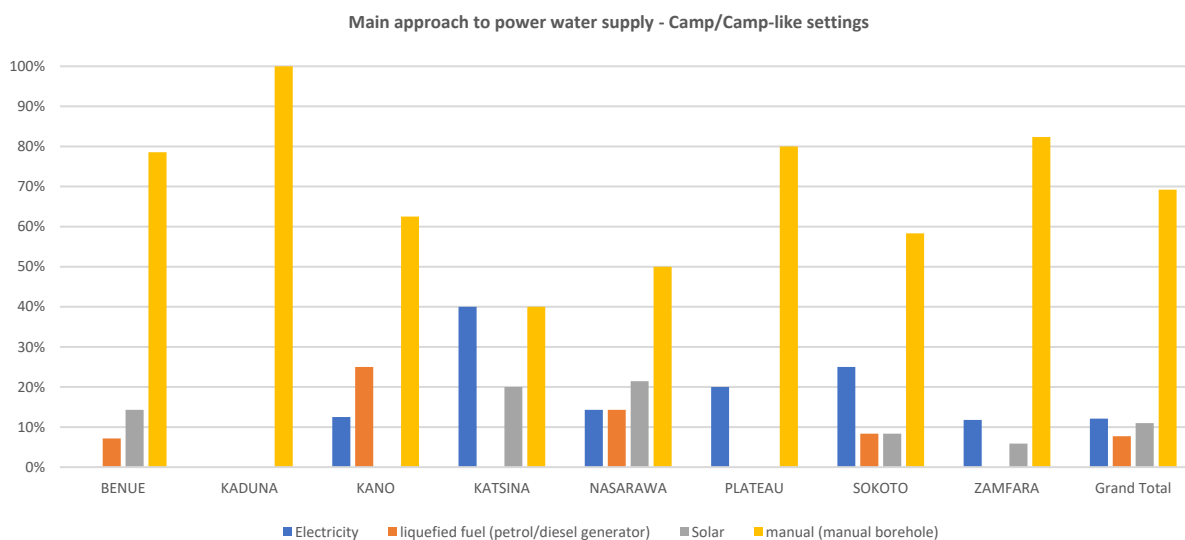


Figure 28: Main approach to power water supply - Camp/Camp-like settings

3.4 SITE LEVEL ANALYSIS – AVERAGE ENERGY PROFILE

Figure 29 below shows a summary of what the majority of the locations assessed have reported in terms of energy access. Regarding energy for cooking, a majority of the locations uses firewood and a three-stone/open fire cookstove. According to the Multi-Tier Framework (MTF) (see Section 2, Figure 6), the level of household energy level is estimated to be very low (Tier 0) since it relies on solid fuel (traditional biomass), which is not considered a modern cooking fuel, and three-stone/open fire, which is not considered to be an improved cooking stove. This has negative impacts on health (smoke inhalation) and safety (burns, fires). The level of electricity access in the majority of the locations is estimated to be Tier 2 or below, since people have access between 0-6 hours per day. However, the fact that the first priority is electricity for connectivity and entertainment such as TV, computer, radio, internet, indicates that the electricity services might be limited to task lighting and phone charging, which corresponds to a Tier 1

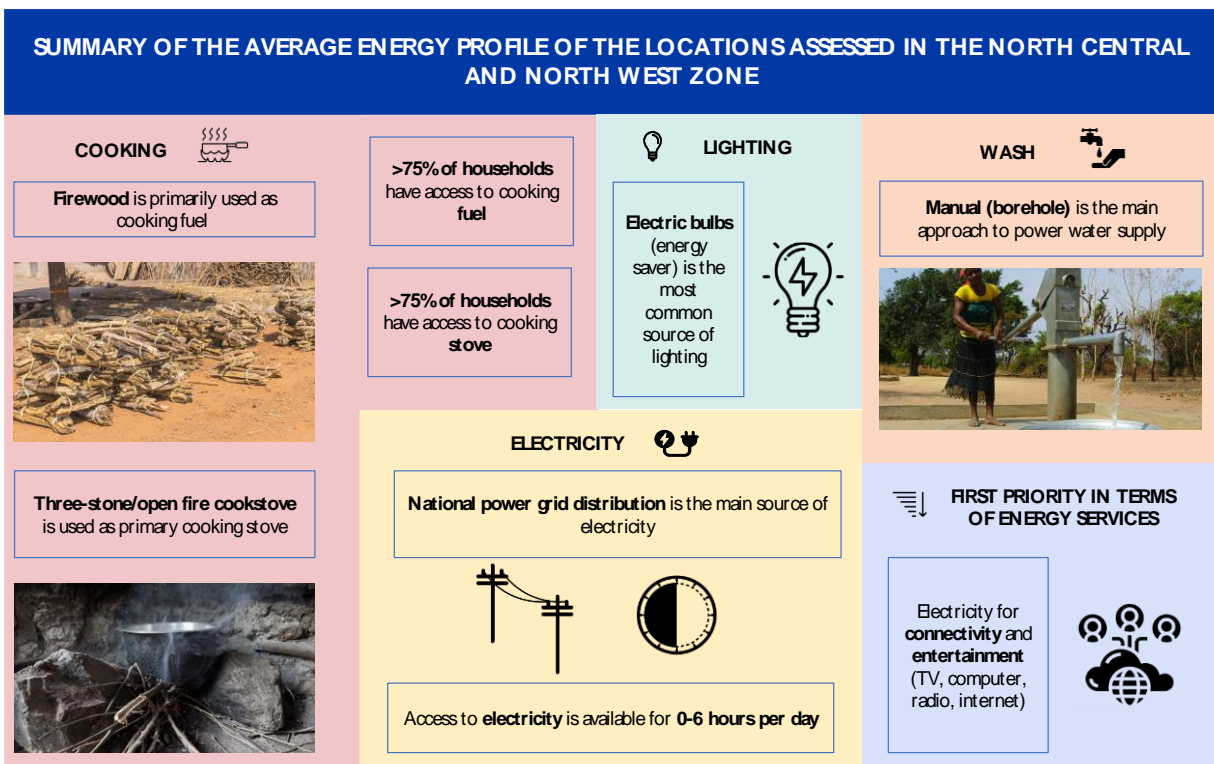


Figure 29: Summary of the average energy profile for the locations assessed in the North Central and North West Zone

level.

3.5 GENERAL RECOMMENDATIONS AND NEXT STEPS

3.5.1 Short-term recommendations

- Since 2013, Nigeria’s North Central and North West Geopolitical Zones have been affected by a multidimensional crisis — rooted in historic ethno-social cleavages — that rekindled in 2013 following the degradation of socioeconomic and environmental conditions, and which has displaced large numbers of populations. The crisis accelerated in January 2018 with the intensification of attacks, resulting in the displacement of hundreds of thousands of individuals. Humanitarian response and relief provision for the affected populations should continue with

Non-Food Items (NFI) distributions that deliver sustainable solutions and enable increased protection, health and safety of the IDP populations, while also safeguarding the surrounding natural and environmental resources. These critical items should include high-quality and certified⁴ solar lanterns and/or solar home systems (SHS), which could be used for lighting and connectivity. In general, the distribution of certified products with minimum standards will support a more sustainable approach and lead to better longer-term outcomes for the displaced population in terms of product life and usability. Additionally, this will lead to a more efficient use of donor funds, decreased waste (including problematic electronics waste) and the need for disposal of broken equipment.

- In addition to being certified, it is recommended that solar products distributed provide at least a Tier I level of electricity access based on the [Multi-Tier Framework \(MTF\) from ESMAP \(World Bank\)](#) (Tier I corresponds to a capacity to provide 4hrs of lighting and phone charging).
- Cooking solutions (including stoves and fuels) that are “cleaner” and more efficient should be prioritized when thinking of NFI distributions in order to limit health impacts (e.g. smoke inhalation), increase food security and minimize negative impacts to the immediate environment (e.g. deforestation, etc.).
- Ensure continued site planning, including the installation of adequate streetlighting for common areas as well as lighting around WASH service points and other critical locations in order to minimize risks of safety incidents and GBV.
- Prioritize sites that have been ranked very low on the site-level analysis for any interventions, and conduct further study if needed. Prioritize sites which have the highest relative populations in order to have a greater impact on a larger number of people.

3.5.2 Long-term recommendations

- In the longer term, coordinate with development and private sector actors to identify energy solutions for cooking, electricity, lighting, streetlighting, WASH, and productive uses of energy that are affordable, sustainable, safe and appropriate (in terms of policies, community acceptance, environmental impacts and technical feasibility) for the local context. Similarly, market-based approaches should be promoted wherever possible.

3.5.3 Further analysis

- Cross check the energy data collected against other data collected in this MSLA round that is related to other clusters (i.e. health, food security, shelter & NFI, protection, etc.), and examine any significant correlations or inconsistencies between these datasets.
- Conduct follow-up in-depth energy access studies and monitor changes through future MSLA rounds.

⁴ For example, the Lighting Global Quality Standards for [pico-PV](#) products and [solar home system kits](#) or the quality standards in [IEC TS 62257-9-8](#). See online data base here : <https://data.verasol.org/>

4 PART 2: NORTH EAST ZONE

4.1 HOUSEHOLD⁵ ENERGY ACCESS

In 91% of the locations assessed in the North East Zone, IDPs have access to a source of energy. For IDPs residing in host communities, the access to a source of energy is reported at 93%, while for IDPs hosted in camp/camp-like settings, the access is reported at 79%. In the majority of the locations assessed, these sources of energy are located on-site, meaning within the camp or camp-like setting or within the village for IDPs residing with host communities (73% for IDPs in host communities and 41% for IDPs in camps/camp-like settings). Figure 32 and Figure 31 show the breakdown per state. In 25% and 20% of the camps/camp-like settings in the state of Borno and Adamawa respectively, IDPs have no access to a source of energy, while in locations where IDPs reside among host communities in the States of Gombe and Bauchi, 93% and 92% respectively of IDPs have access to a source of energy that can be found within the camp. In sites with no access to energy (9%), key informants reported that the main challenge was that fetching fuelwood was a dangerous activity in 49% of the locations. In 22% of the locations, the price of electricity (too expensive) was reported to be the main challenge. Figure 33 and Figure 34 show the breakdown by State. In locations where IDPs reside among the host communities in Borno State, 71% of the key informants reported that fetching fuelwood was a dangerous activity while in camp/camp-like settings, it was reported in 56% of the locations.

In sites with no access to energy (3%), the preferred source of energy reported would be electricity (57%) and getting firewood (34%). Figure 30 shows the breakdown per State.

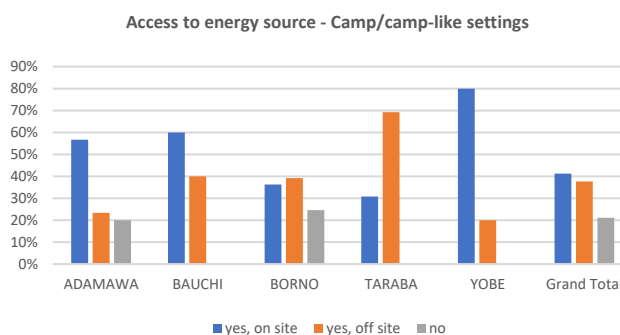


Figure 32: Access to energy source - Camp/camp-like settings

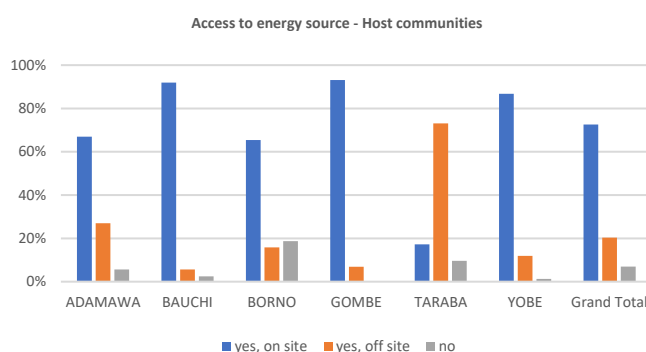


Figure 31: Access to energy source - Host communities

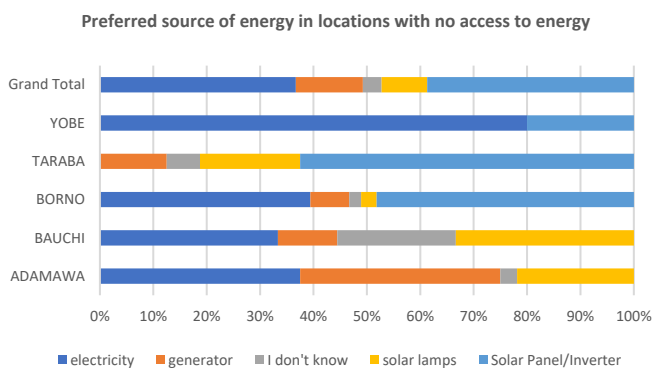


Figure 30: Preferred source of energy in locations with no access to energy

⁵ Data collection was done at location level through key informant interviews, but questions regarding energy access were related to households' energy practices.

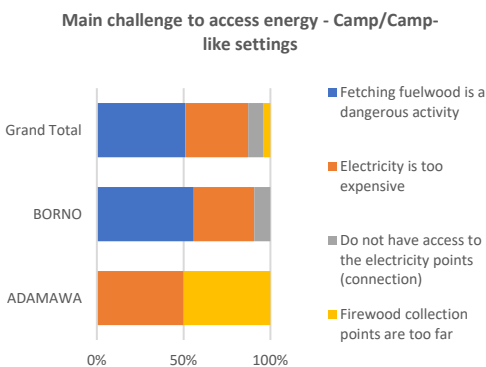


Figure 33: Main challenge to access energy - Camp/Camp-like settings

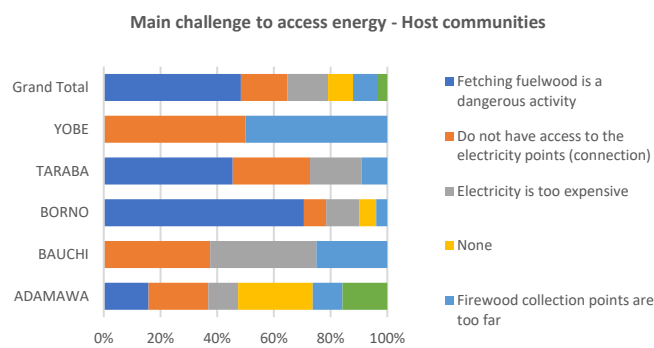


Figure 34: Main challenge to access energy - Host communities

4.1.1 MAIN PRIORITIES ASSOCIATED WITH ENERGY ACCESS

In the 2,379 locations assessed, the first priority in terms of energy services are: electricity for mobile phone charging in 47% of locations, electricity for connectivity and entertainment (TV, computer, radio, internet) in 39% of locations, energy sources for household lighting in 5% of locations, access to cooking fuel (5%), energy for business/ enterprise (2%) and energy for agriculture (1%). Figure 35 shows the breakdown per state in terms of the first priority in locations categorized as camp/camp-like settings where IDPs live (13% of locations assessed). Figure 36 shows the breakdown per state in terms of the first priority in locations where IDPs reside among the host communities (87% of locations assessed).

On the one hand, electricity for mobile phone charging was found to be a first priority in 45% of the locations where IDPs reside among host communities while it was the case in 58% of locations where IDPs live in camp/camp-like setting. On the other hand, 40% of the locations where IDPs reside among host communities identified electricity for connectivity and entertainment as their first priority, while it represented 32% of the locations where IDPs live in camp/camp-like setting. This highlights the difference in first priority depending on the type of setting where IDPs are established. Moreover, it is worth noting that in camp/camp-like settings in Bauchi State, about 80% of the locations assessed were reporting electricity for mobile phone charging as a first priority, which is relatively higher than in other States. A similar observation can be made for camp/camp-like settings in Taraba State where 77% of the locations reported Electricity for connectivity and entertainment as their first priority.

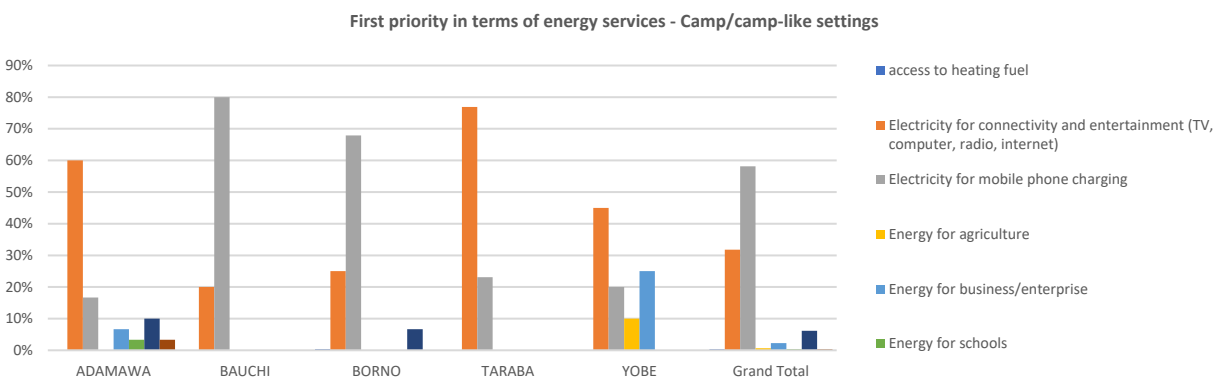


Figure 35: Main priority in terms of energy services for IDPs in camp/camp-like settings

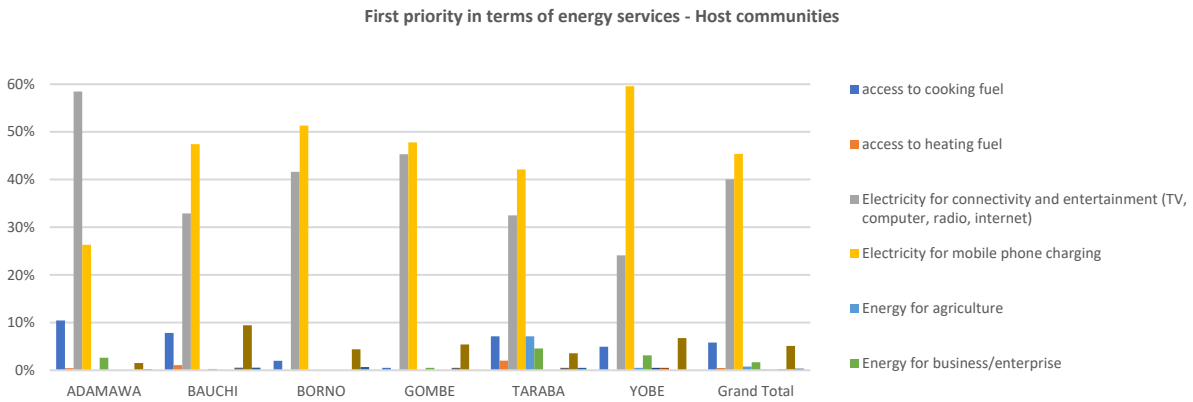


Figure 36: Main priority in terms of energy services for IDPs in host communities

Figure 37 shows the second and third priorities in locations assessed. In locations where IDPs reside in camp/camp-like settings, their second priority is energy sources for streetlighting (33%) and electricity for mobile phone charging (24%). Furthermore, the third priority is access to cooking fuel (24%). In locations where IDPs reside among host communities, the second priority is electricity for mobile phone charging (29%). Moreover, the third priority is access to cooking fuel (29%). Overall, the three main priorities of IDPs across all locations assessed are 1) Electricity for mobile phone charging, 2) Electricity for basic connectivity such as mobile phone charging, and 3) Access to cooking fuel. The second priority in camp/camp-like settings is energy sources for streetlighting (33%) whereas in locations where IDPs reside within the host community, the second priority is electricity for mobile phone charging (29%) and access to cooking fuel (31%).

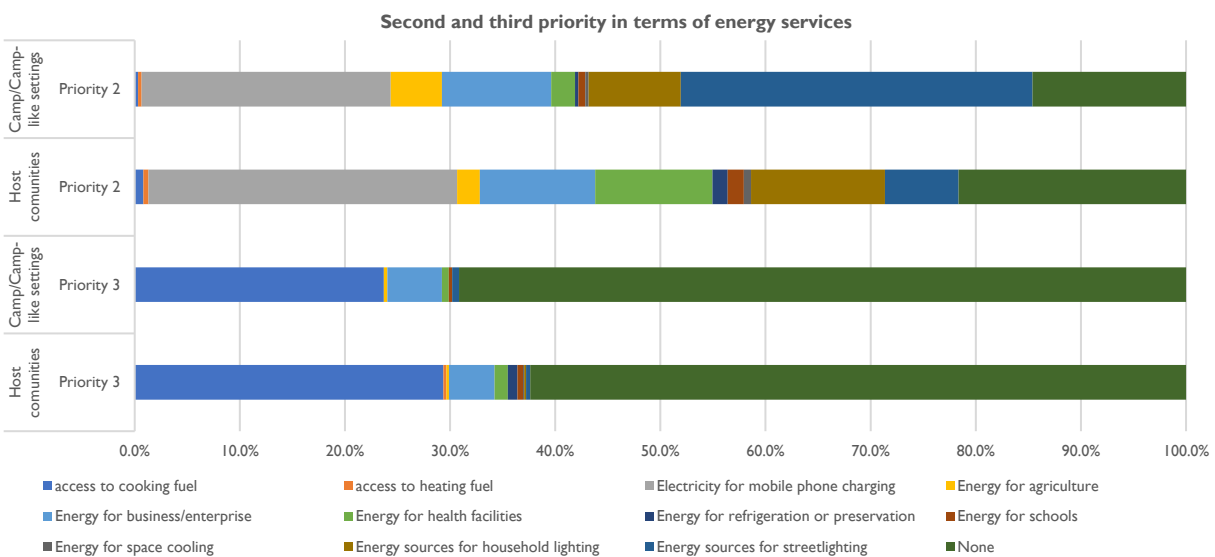


Figure 37: Second and third priority in terms of energy services

4.1.2 ENERGY FOR COOKING

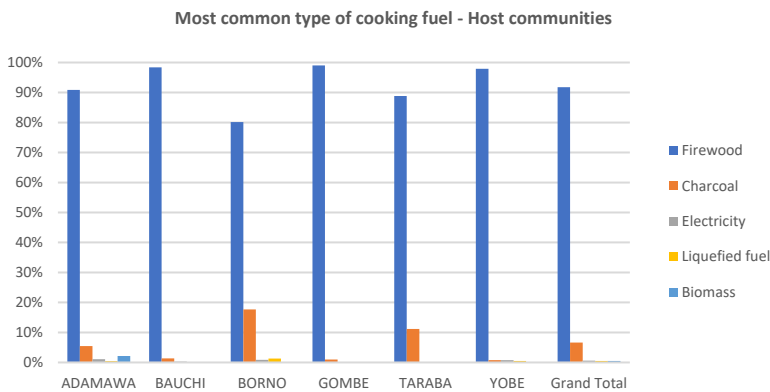


Figure 38: Most common type of cooking fuel - host communities

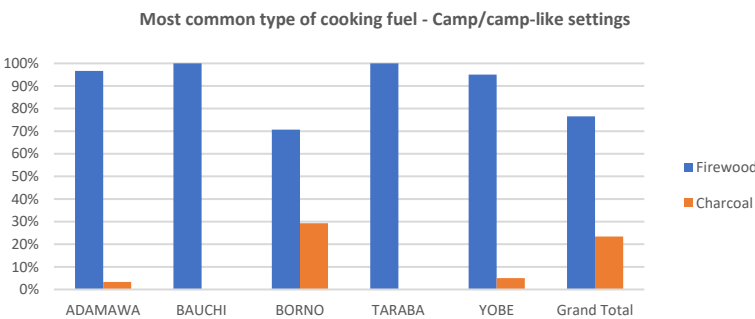


Figure 39: Most common type of cooking fuel - camp/camp-like settings

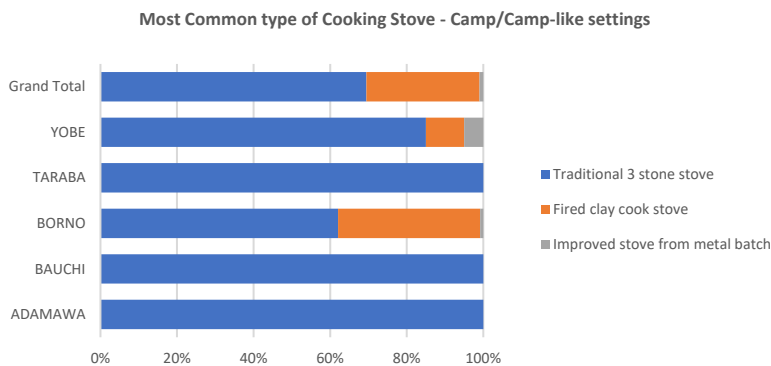


Figure 40: Most Common type of Cooking Stove - Camp/Camp-like settings

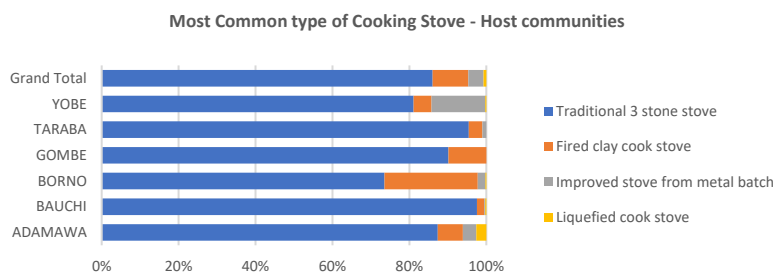


Figure 41: Most Common type of Cooking Stove - Host communities

In 90% of the locations assessed, firewood is the most commonly source of cooking fuel, while in 9% of the locations charcoal is the primary source of cooking fuel, and electricity in 1% of the locations. Figure 39 and Figure 38 show the breakdown per State and type of settings.

This trend is observed both in locations where IDPs reside among the host communities and in camp/camp-like settings. However, electricity, biomass and liquified fuel are not used as a common type of cooking fuel in camp/camp-like settings.

Three-stone/open fire cookstoves (84%), fired clay cookstoves (12%), improved stoves from metal batch (4%), and liquefied fuel cookstoves (1%) are most commonly used as cooking stoves in the locations assessed. Figure 40 and Figure 41 show the breakdown per State and type of settings. One should note that cooking in overcrowded camp/camp-like settings often leads to fire outbreaks, destroying and damaging shelters and leaving households with no roof. This has been highlighted in multiple DTM flash reports.

Moreover, in 30% of the locations assessed, >75% of the households have a source of cooking fuel, while in 30% of the locations between 51-75% of the households have a source of cooking fuel, in 18% of the locations between 25-50% of the households have a source of cooking fuel, in 15% of the locations <25% of the households have a source of cooking fuel, and in 7% of the locations the share of households having a source of cooking fuel is unknown. Figure 42 shows the breakdown per State.

Finally, in 33% of the locations assessed, >75% of the households have a of cooking stove, in 27% of the locations between 51-75% of the households have a cooking stove, in 13% of the locations between 25-50% have a cooking stove, in 19% of the locations <25% have a cooking stove and in 7% of the locations the share of the households having a cooking stove is unknown. Figure 43 shows the breakdown per State.

While in a majority of the locations assessed >75% of households have access to a source of cooking fuel and cooking stove, the remaining share of households might have to share their cooking fuel and stoves with other families. These findings are consistent with the second and third priorities of the households in terms of energy services, which was found to be Access to cooking fuel (see Section 4.1.1).

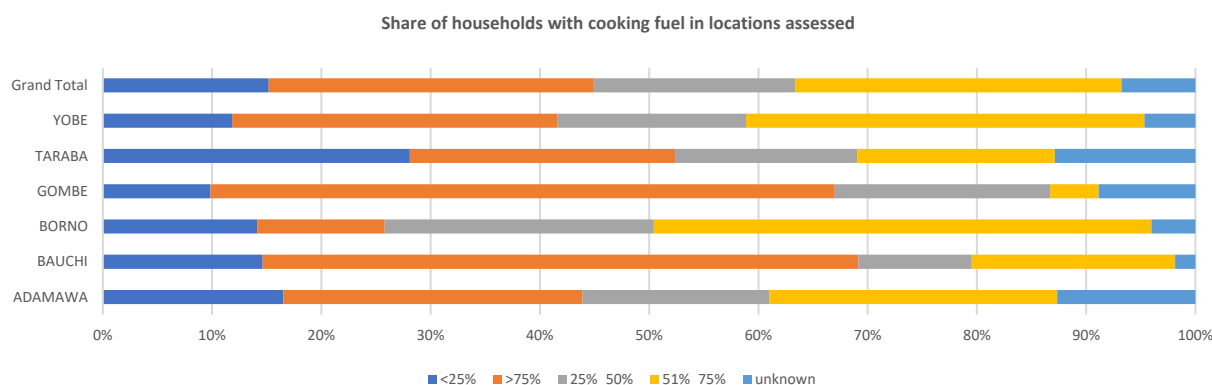


Figure 42: Share of households with cooking fuel in locations assessed

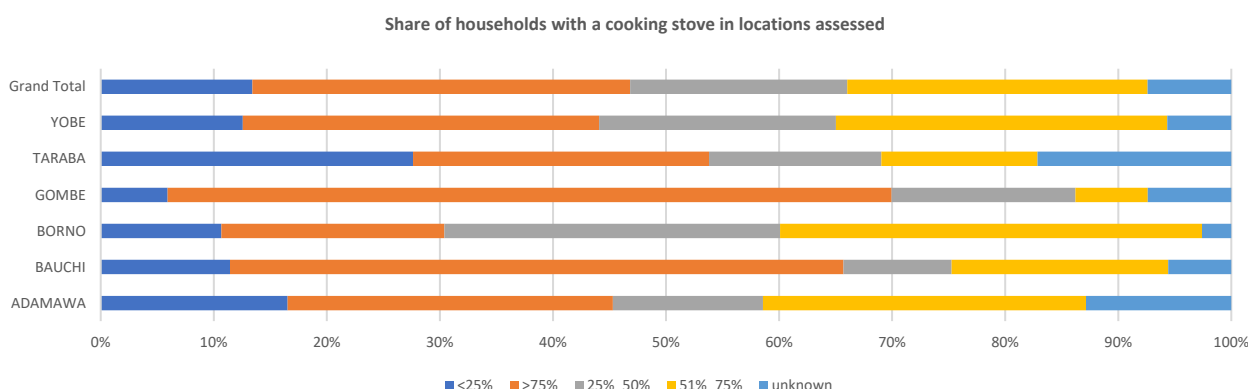


Figure 43: Share of households with a cooking stove in locations assessed

4.2 ELECTRICITY

In locations where it was reported that electricity was available as a source of energy (50%), in 53% of those locations, the main source of electricity was found to be liquified fuel (petrol/diesel generator), while the national power grid distribution was found to be the main source in 44% of the locations. Solar energy is the main source of electricity in only 4% of those locations. In locations where IDPs reside among the host communities and also have access to electricity (54%), 52% of locations use liquified fuel as their main

source of electricity, 44% of the locations use the national grid, and 4% use solar. In camp/camp-like settings having access to electricity (23%), 64% of the locations reported using liquefied fuel, 33% of the locations use the national power grid distribution as their main source of electricity, while only 3% use solar. It is worth highlighting that the access to the national grid is not widely available in the North East Zone, as opposed to the North West and North Central Zone where a high percentage of locations assessed are estimated to have access to it (see Section 3.2 for more details).

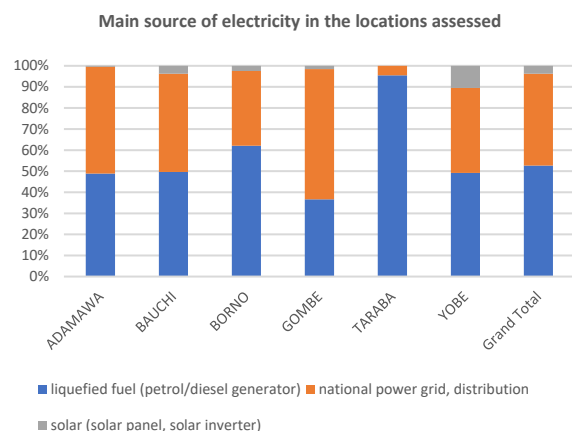


Figure 44: Main source of electricity in the locations assessed

(54%), it was reported that in 86% of those locations, the number of hours of electricity per day was unknown. In 7% of the locations, it was reported that electricity is available for 0-6 hours per day, 4% reported between 6-12 hours per day, 2% reported 12-18 hours per day, and 1% reported 18-24 hours. In in camp/camp-like settings having access to electricity 33%, it was reported that in 79% of the locations assessed, the number of hours of electricity per day was unknown. In 10% of the locations, it was reported that electricity is available for 6-12 hours of electricity per day, 9% reported between 0-6 hours per day, and 3% reported 12-18 hours per day.

In locations where it was reported that electricity was available as a source of energy (50%), in 86% of those locations, the number of hours of electricity per day was unknown. In 7% of the locations, people have access to electricity between 0-6 hours per day, in 5% of locations people have access to electricity between 6-12 hours per day, while in 1% of the locations people reported 12-18 hours per day, and 1% reported 18-24 hours per day.

In locations where IDPs are hosted by host communities and also have access to electricity

4.3 ENERGY ACCESS AT THE COMMUNITY LEVEL

4.3.1 Lighting

In 36% of the locations assessed, the most common source of lighting is lanterns, used in communal points, WASH facilities, residences and public spaces. In 32% of locations, electric bulbs were found to be the most common source while solar lamps were reported in 20% of the locations assessed. In 9% of the locations assessed, it was reported that no source of lighting was available. Liquefied fuel was reported as most common source in 6% of the locations assessed and candlelight in only 1%. In locations where IDPs are hosted among host communities, the breakdown of the most common is similar (35% lanterns, 30% electric bulbs, 18% solar lamps, 8% none, 7% liquefied fuel, 1% candlelight). However, in camp/camp-like settings, no source of lighting was reported in 19% of the locations, and electric bulbs in only 6% of the locations.

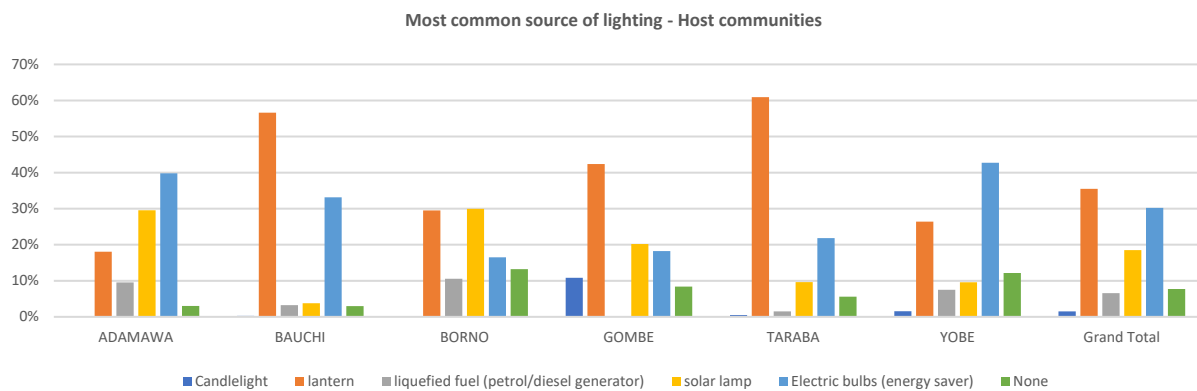


Figure 46: Most common source of lighting – Host communities

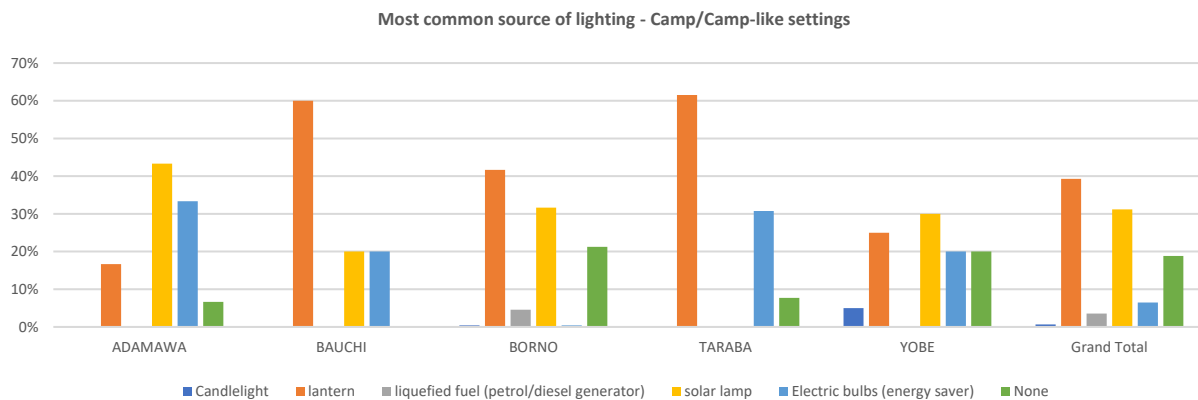


Figure 45: Most common source of lighting – Camp/Camp-like settings

4.3.2 WASH

It was reported that in 50% of the locations assessed, manual (borehole) pumping is used as the main approach to power water supply. In 19% of the locations assessed, electricity from the national grid and solar energy are used as the main technology to power water supply, while liquified fuel is used in 10% of the locations assessed. In 2% of the locations assessed, the energy source is unknown. For locations where IDPs are hosted among host communities, the same breakdown of the share of usage of different approach can be observed (54% of the locations mainly use manual (borehole) pumping, 21% electricity from the national grid, 14% solar, 9% liquified fuel, and 2% unknown). For camp/camp-like settings, the breakdown is relatively different: 50% of the locations mainly use solar energy, 26% manual (borehole) pumping, 13% liquified fuel, 7% electricity from the national grid, and 4% unknown. Solar energy is more widely used in camp/camp-like settings (50%) than in host communities (14%).

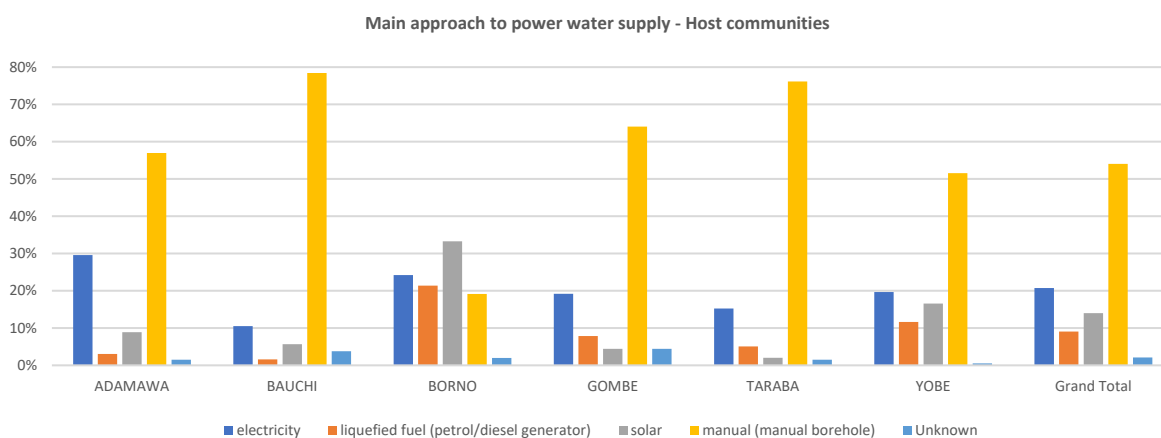


Figure 47: Main approach to power water supply - Host communities

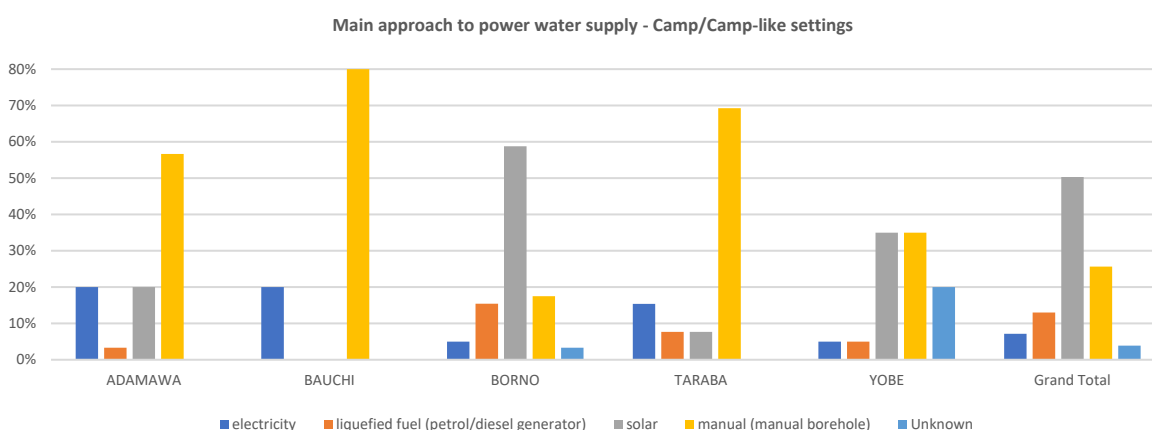


Figure 48: Main approach to power water supply – Camp/Camp-like settings

4.4 SITE LEVEL ANALYSIS – AVERAGE ENERGY PROFILE

Figure 49 below shows a summary of what the majority of the locations assessed have reported in terms of energy access. Regarding energy for cooking, a majority of the locations use firewood and a three-stone/open fire cookstove. According to the Multi-Tier Framework (MTF) (see Section 2, Figure 6), the level of household energy level is estimated to be very low (Tier 0) since it relies on solid fuel (traditional biomass), which is not considered a modern cooking fuel, and three-stone/open fire, which is not considered an improved cooking stove. This has negative impacts on health (smoke inhalation) and safety (burns, fires). The level of electricity access in the majority of the locations is difficult to estimate since the number of hours per day of electricity is unknown for most locations. However, the fact that the first priority is electricity for mobile phone charging indicates that the electricity services might be limited to task lighting and phone charging, which corresponds to a Tier I level.

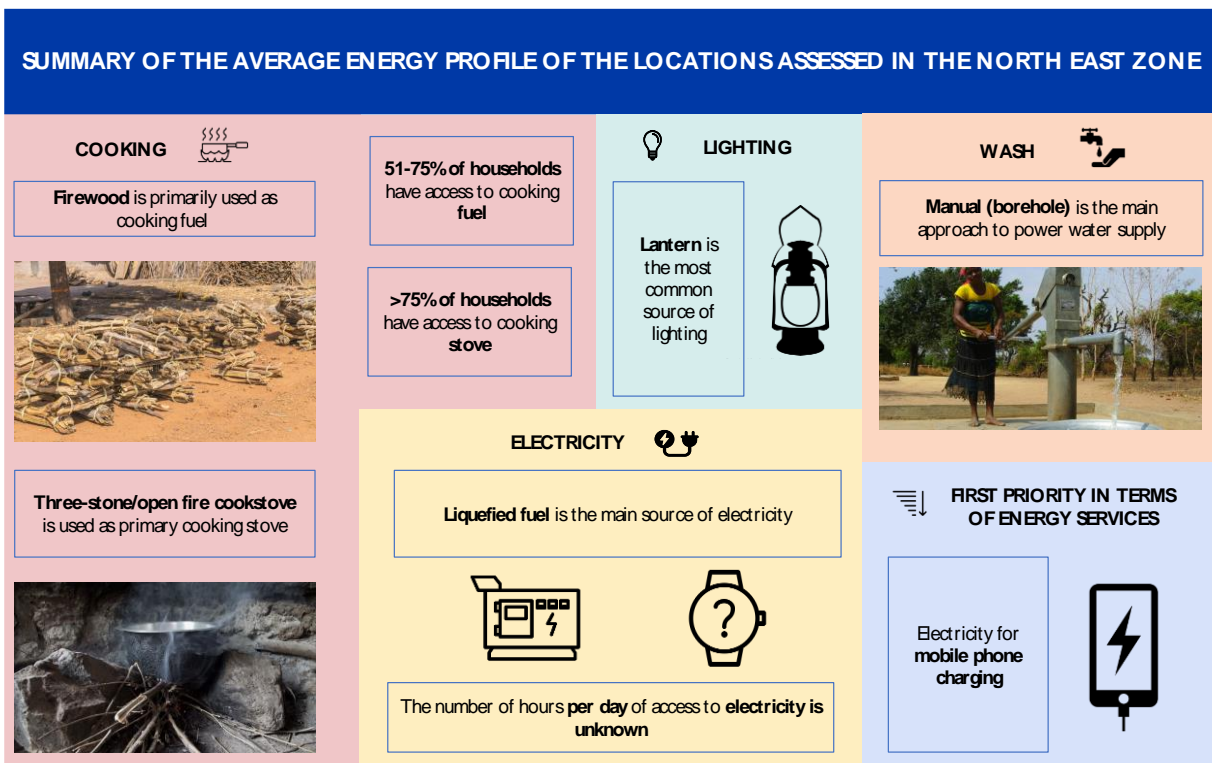


Figure 49: Summary of the average energy profile of the locations assessed in the North East Zone

4.5 GENERAL RECOMMENDATIONS AND NEXT STEPS

- Since the beginning of 2015, north-east Nigeria has witnessed an increase in violence perpetrated by Non-State Armed Groups (NSAGs), causing a major humanitarian crisis. The intensification of attacks has resulted in prolonged insecurity, exacerbating the plight of vulnerable civilians and triggered waves of forced displacement as well as violation of human rights. Humanitarian response and relief provision for the affected populations should continue with Non-Food Items (NFI) distributions that deliver sustainable solutions and enable increased protection, health and safety of the IDP populations, while also safeguarding the surrounding natural and environmental

resources. These critical items should include high-quality and certified⁶ solar lanterns and/or solar home systems (SHS), which could be used for lighting and connectivity. In general, the distribution of certified products with minimum standards will support a more sustainable approach and lead to better longer-term outcomes for the displaced population in terms of product life and usability. Additionally, this will lead to a more efficient use of donor funds, decreased waste (including problematic electronics waste) and the need for disposal of broken equipment.

- In addition to being certified, it is recommended that solar products distributed provide at least a Tier I level of electricity access, based on to the [Multi-Tier Framework \(MTF\) from ESMAP \(World Bank\)](#) (Tier I with a capacity to provide 4hrs of lighting and phone charging).
- Cooking solutions (including stoves and fuels) that are “cleaner” and more efficient should be prioritized when thinking of NFI distributions in order to limit health impacts (e.g. smoke inhalation), increase food security and minimize negative impacts to the immediate environment (e.g. deforestation, etc.).
- Ensure continued site planning, including the installation of adequate streetlighting for common areas as well as lighting around WASH service points and other critical locations in order to minimize risks of safety incidents and GBV.
- Prioritize sites that have been ranked very low on the site-level analysis for any interventions, and conduct further study if needed. Prioritize sites which have the highest relative populations in order to have a greater impact on a larger number of people.

4.5.1 Long-term recommendations

- In the longer term, coordinate with development and private sector actors to identify energy solutions for cooking, electricity, lighting, streetlighting, WASH, and productive uses of energy that are affordable, sustainable, safe and appropriate (in terms of policies, community acceptance, environmental impacts and technical feasibility) for the local context. Similarly, market-based approaches should be promoted wherever possible.

4.5.2 Further analysis

- Cross check the energy data collected against other data collected in this MSLA round that is related to other clusters (i.e. health, food security, shelter & NFI, protection, etc.), and examine any significant correlations or inconsistencies between these datasets.
- Conduct follow-up in-depth energy access studies and monitor changes through future MSLA rounds.

⁶ For example, the Lighting Global Quality Standards for [pico-PV](#) products and [solar home system kits](#) or the quality standards in [IEC TS 62257-9-8](#). See online data base here : <https://data.verasol.org/>

5 DATA COLLECTION METHODOLOGY

To ensure a more robust and targeted response for the humanitarian community, DTM provides key information and critical insights into the situation on displacement affected populations, including internally displaced populations (IDPs), returnees, and host communities. DTM Multi-Sectoral Location Assessment (MSLA) use Key informant interviews as a data collection method. DTM has an extensive network of trained enumerators that can be leveraged to acquire data in remote locations. These exercises provide in-depth information on mobility, needs, and vulnerabilities.

Limitations:

DTM MSLA is not an in-depth Sectoral Needs Assessment tool. It does not interview individuals or households, but rather key informants. Moreover, DTM enumerators and key informants are not sectoral experts. DTM MSLA questions are designed to be answered by non-sectoral experts, in a way that the results can be used by sectoral experts for analysis.

Definition:

For the purposes of this report, an Internally Displaced Person (IDP) is defined as “a person who has been forced or obliged to flee or to leave his or her home or place of habitual residence, in particular as a result of, or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who has not crossed an internationally recognized state border”⁷.

6 LESSONS LEARNT ABOUT THIS PILOT ASSESSMENT INCLUDING ENERGY DATA FOR THE FIRST TIME

- The question on the main source of energy was designed to accept only one answer. However, since energy covers different services, such as cooking, lighting, productive uses, etc., the answer captured only some part of the situation. In future assessments, it is recommended to ask about electricity access, lighting access and energy for cooking in distinct questions.
- Regarding lighting access, the question on the most common source of lighting in the majority of the sites (communal points, WASH facilities, residences and public spaces) gives limited information on where there is a gap or need that needs to be addressed to ensure safety and security. It is therefore recommended to ask separate questions for household level lighting and other communal points (e.g. WASH facilities).
- In some cases, the main fuel reported as a primary source used for cooking is not compatible with the primary type of cookstove used (and vice-versa). This might be due to some misunderstanding from the enumerator or the key informant (KI), or from the fact that displaced populations used “fuel stacking”, which consists in using multiple stove-and-fuel cooking combinations within the same household. This can potentially explain some unexpected answers for energy for cooking. Some additional clarification is recommended during the training of enumerators and interviews of KIs.
- The difference between the difference technology behind electricity access have sometimes been overlooked in some suggested answers in the questionnaire. For example, “electricity” alone was

⁷ Source: Guiding Principles on Internal Displacement, annexed to United Nations Commission on Human Rights, Report of the Representative of the Secretary-General, Mr Francis M. Deng, Submitted Pursuant to Commission Resolution 1997/39, Addendum (11 February 1998) UN Doc E/CN.4/1998/53/Add.2, 6.

usually referring to electricity from the national grid, as opposed to solar energy or diesel/petrol generators. Getting that type of information is useful to understand the share of renewable energy used by displaced populations, and is recommended to be included in future assessments.

- The term “lantern” was used in the suggested answers of the questionnaires without specifically defining the type of lantern (solar, kerosene, candlelight, etc.). For this reason, it is not possible to quantify the share of displaced population that uses renewable energy sources for lighting and basic connectivity (e.g. mobile phone charging). In the future, it is recommended to clarify and specify the different types to avoid confusion.

7 LIMITATIONS

7.1 North Central and North West Zone

- The security situation in some wards in North Central and North West Nigeria remains rather volatile and unstable. Therefore, not all locations in the covered states were accessible at the time of the assessment.
- The data used for this analysis are estimates obtained through key informant interviews, personal observation and focus group discussions. Thus, in order to ensure the reliability of these estimates, data collection was performed at the lowest administrative level: the site or the host community.
- Key informant fatigue. Some enumerators experienced reluctance from IDP populations to cooperate with the surveys as data is collected very regularly and assistance is rather limited.
- In some LGAs, the cost of transportation has increased significantly as a result of banditry and attacks on highways.
- As a result of the security issues, a ban on motorcycles and trucks was issued in the state of Benue. As motorcycles are the means of transportation of the data collectors, they had to come up with alternatives (hiring a keke napep or “tricycle”) which were less effective.
- Because of heavy rainstorms, certain locations became inaccessible as the roads were washed away. Diversion to reach the same locations were too lengthy or too risky.
- The poor network in remote locations are often causing delays in data sharing.

7.2 North East Zone

- The security situation in some wards in North East Nigeria remains unstable and as a result, accessibility is limited. In locations with limited accessibility, data was collected through telephone interviews with key informants.
- Linked to the. Security situation ,access is often limited as a result of movement restrictions imposed by the military.
- As the situation is volatile in some locations with displacements occurring frequently, it is challenging for the enumerators to build a network of trusted key informants. Additionally, due to the frequency of these movements, often due to attacks or the fear of attacks, regular updates of the sites or wards are necessary.
- Key informant fatigue. Many key informants are increasingly reluctant to cooperate due to perceived lack of response. In some cases, this has resulted in threats and intimidation of enumerators.
- In the state of Yobe, a communication mast was burnt down by a Non-State Armed Group. This caused considerable delays in data collection as key informants needed to travel to areas with network coverage to be able to share information with DTM enumerators.