

Research Methodology Note

From Response to Resilience in Maiduguri

PHASE 1 – Neighborhood Delineation

NGA1902a

Nigeria

October 2019

Version 2



1. Executive Summary

Country of intervention	Nigeria						
Type of Emergency	x	Natural disaster	x	Conflict			
Type of Crisis	x	Sudden onset	x	Slow onset	x	Protracted	
Mandating Body/ Agency	ECHO						
Project Code	TBD						
Overall Research Timeframe (from research design to final outputs / M&E)	30/10/2019 to 12/12/2019						
Research Timeframe Add planned deadlines (for the first cycle if more than 1)	1. Start collect data: 4/11/2019						
	2. Data collected: 29/11/2019			5. Outputs sent for validation: 12/12/2019			
	3. Data analyzed: 06/12/2019			6. Outputs published: 17/12/2019			
	4. Data sent for validation: 06/12/2019			7. Final presentation: 17/12/2019			
Number of assessments	x	Single assessment (one cycle) ¹					
	<input type="checkbox"/>	Multi assessment (more than one cycle) [Describe here the frequency of the cycle]					
Humanitarian milestones Specify what will the assessment information and when e.g., The shelter cluster will use this data to draft its Revised Flash Appeal;	Milestone			Deadline			
	<input type="checkbox"/>	Donor plan/strategy			__/__/__		
	<input type="checkbox"/>	Inter-cluster plan/strategy			__/__/__		
	<input type="checkbox"/>	Cluster plan/strategy			__/__/__		
	<input type="checkbox"/>	NGO platform plan/strategy			—		
	x	Other (Specify): Neighborhood Selection			15/12/2020		
	Audience type			Dissemination			

¹ This methodology note is for Phase 1 of a Multi-cycle research cycle. The research Terms of Reference for this overall research cycle is available upon request.

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Audience Type & Dissemination Specify <i>who</i> will the assessment inform and <i>how</i> you will disseminate to inform the audience	<input checked="" type="checkbox"/> Strategic <input checked="" type="checkbox"/> Programmatic <input checked="" type="checkbox"/> Operational <input type="checkbox"/> [Other, Specify]		<input checked="" type="checkbox"/> General Product Mailing (e.g., mail to NGO consortium; HCT participants; Donors) <input type="checkbox"/> Cluster Mailing (Education, Shelter, and WASH) and presentation of findings at the next cluster meeting <input checked="" type="checkbox"/> Presentation of findings (e.g., at HCT meeting; Cluster meeting) <input checked="" type="checkbox"/> Website Dissemination (Relief Web & REACH Resource Centre) <input type="checkbox"/> [Other, Specify]	
Detailed dissemination plan required	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
General Objective	The area-based assessments aim to inform the consortium partners' resilience planning and capacity building efforts in the neighborhoods of Maiduguri, Nigeria.			
Specific Objective(s)	1.0 To identify and select three vulnerable² pilot neighborhoods 1.1 To pre-identify settlement areas prone to natural & man-made hazards and with a high IDP density in Maiduguri. 1.2 To identify neighborhood boundaries perceived by the local population within the pre-identified settlement areas of the city of Maiduguri. 1.3 To identify the critical service locations, service gaps, general demographics, and hazard exposure in the neighborhoods within the pre-identified settlement areas of the city of Maiduguri.			
Research Questions	1. Which settlement areas in Maiduguri are facing challenges in relation to high IDP density and hazards? Main criteria for selection: 1.1. Which settlement areas are facing challenges concerning natural hazards & man-made hazards in Maiduguri? 1.2. What challenges are the settlement areas facing in relation to natural hazards & man-made hazards in Maiduguri? 1.3. Which settlements are facing a lack of access to basic services in Maiduguri? 1.4. Which settlements areas have a high density of IDPs in out of camp settings in Maiduguri? Sub criteria for selection: 1.5. Which settlements areas are priority areas of interventions for NGOs and development agencies (national and international) in Maiduguri? 1.6. Which urban communities in the pre-selected settlement areas are accessible, diverse, and willing to engage in the project ³ ? 1.7. Which settlement areas are priority areas for knowledge generation and interventions for local governments (LGAs, State Ministries such as RRR Ministry)? 2.0 What are three suitable⁴ pilot neighborhoods for the actions of the consortium within the identified settlement areas of Maiduguri, Nigeria?			

² For this study, hazard vulnerability is described as the uncertainty about the occurrence of a specific hazard and which consequences this natural or man-made hazard event could have on the population in the selected neighborhoods. On one hand vulnerability is influenced by environmental, cultural, political, social, physical and economic factors but on the other hand it is determined by the coping capacities of individuals, organizations, service providers, local authorities and the entire community (Per Becker, 2014:140-142). Thus, this research aims to determine the vulnerabilities of the targeted population, based on an comprehensive analysis of the complex interaction of different profiles (e.g. physical, political, environmental and social) and the coping capacities of the population, the local authorities, service providers and individuals in the targeted neighborhoods. These factors in coherence with hazard exposure lead to the actual vulnerability of a society. Hence, for an comprehensive understanding of vulnerabilities one has to develop a understand about these societal profiles (Coppola, 2011:178)., hazard exposure and coping capacities.

³ This entails: diversity in neighborhood typology, demographic composition, and level of engagement from traditional authorities and other local actors in the communities

⁴ The selection criteria for the three most suitable neighborhoods are: Essential services able to meet needs of population, IDP density and Hazard exposure

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	2.1 What are the perceived neighborhood boundaries by the population within the identified settlement areas of Maiduguri, Nigeria? 2.2 Where are essential service locations of the neighborhoods within the identified settlement areas of Maiduguri, Nigeria? 2.3 Which essential services in the neighborhoods meet the needs of the neighborhood population within the identified settlement areas of Maiduguri, Nigeria? 2.4 Which hazards are existing for the population in the neighborhoods within the identified settlement areas of Maiduguri, Nigeria? 2.5 What are the key characteristics and demographics of the neighborhood population within the identified settlement areas of Maiduguri, Nigeria?			
Geographic Coverage	<i>Maiduguri, Borno State, Nigeria</i>			
Secondary data sources	NEMA Nigeria (National Emergency Management Agency), IOM Displacement Tracking Matrix (DTM), Multi-Sector Needs Assessment (MSNA), Reliefweb, EM-DAT (international disasters database)			
Population(s) <i>Select all that apply</i>	<input checked="" type="checkbox"/>	IDPs in camp	<input checked="" type="checkbox"/>	IDPs in informal sites
	<input checked="" type="checkbox"/>	IDPs in host communities	<input type="checkbox"/>	IDPs [Other, Specify]
	<input type="checkbox"/>	Refugees in camp	<input type="checkbox"/>	Refugees in informal sites
	<input type="checkbox"/>	Refugees in host communities	<input type="checkbox"/>	Refugees [Other, Specify]
	<input checked="" type="checkbox"/>	Host communities	<input type="checkbox"/>	[Other, Specify]
Stratification <i>Select the type(s) and enter the number of strata</i>	<input checked="" type="checkbox"/>	Geographical #: hazard-prone areas with high densities of IDPs within Maiduguri Population size per strata is known? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/>	Group #: IDP ___ Population size per strata is known? <input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/>	[Other Specify] #: __ Population size per strata is known? <input type="checkbox"/> Yes <input type="checkbox"/> No
Data collection tool(s)	<input checked="" type="checkbox"/>	Structured (Quantitative)	<input checked="" type="checkbox"/>	Semi-structured (Qualitative)
	Sampling method		Data collection method	
Data collection tool (s) # 1 Mapping Key Informant Tools (structured) <i>Select sampling and data collection method and specify target # interviews</i>	<input checked="" type="checkbox"/> Purposive <input checked="" type="checkbox"/> Snowballing <input type="checkbox"/> [Other, Specify]		<input checked="" type="checkbox"/> Key informant interview (Target #): 1 per neighborhood, for up to 150 neighborhoods <input type="checkbox"/> Individual interview (Target #): _____ <input type="checkbox"/> Focus group discussion (Target #): _____ <input type="checkbox"/> [Other, Specify] (Target #): _____	
Data collection tool (s) # 2 Mapping FGDs – Area identification (Semi-structured) <i>Select sampling and data collection method and specify target # interviews</i>	<input checked="" type="checkbox"/> Purposive <input type="checkbox"/> Probability / Simple random <input type="checkbox"/> Probability / Stratified simple random <input type="checkbox"/> Probability / Cluster sampling <input type="checkbox"/> Probability / Stratified cluster sampling <input type="checkbox"/> [Other, Specify]		<input type="checkbox"/> Key informant interview (Target #): _____ <input checked="" type="checkbox"/> Group discussion (Target #): 2 per pre-selected neighborhood (between 5 and 15 based on data from Mapping Key Informant) <input type="checkbox"/> Household interview (Target #): _____ <input type="checkbox"/> Individual interview (Target #): _____ <input type="checkbox"/> Direct observations (Target #): _____ <input type="checkbox"/> [Other, Specify] (Target #): _____	
Target level of precision if probability sampling	N/A		N/A	

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Data management platform(s)	<input checked="" type="checkbox"/>	IMPACT	<input type="checkbox"/>	UNHCR
	<input type="checkbox"/>	[Other, Specify]		
Expected output type(s)	<input type="checkbox"/>	Situation overview #:	Report#:	Profile #:
	<input type="checkbox"/>	Presentation (Preliminary findings) #: _ _	<input checked="" type="checkbox"/> Presentation (Final) : 1 - Presentation of findings for delineated neighborhoods (Phase 1)	<input checked="" type="checkbox"/> Factsheet #: 1 Compendium of factsheets containing 1 factsheet for each delineated neighborhood (Phase 1 – neighborhood delineation)
	<input type="checkbox"/>	Interactive dashboard #: _	<input checked="" type="checkbox"/> Web map #: Open Street Maps	<input checked="" type="checkbox"/> Map #: One Heat map of Maiduguri The maps for the three selected neighborhoods will be updated throughout the project cycles
	<input type="checkbox"/>	[Other, Specify] #: _ _		
Access	<input checked="" type="checkbox"/>	Public (available on REACH resource center and other humanitarian platforms)		
	<input type="checkbox"/>	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)		
Visibility Specify which logos should be on outputs	ACTED IRC IMPACT AGORA ECHO			

Methodology

2. Rationale

General Context

The Boko Haram insurgency in Northeast Nigeria started ten years ago, leading to thousands of victims and millions of displaced persons in the last decade (CFR, 2018). In May 2019, about 252,217 IDPs lived in Maiduguri LGA (IOM DTM Nigeria, 2019). Because of the rapid growth of the city, today, the urban settlement areas are not only located in the original Maiduguri LGA but also Jere LGA and Konduga LGA. With violence across the northeast of Borno State and resulting displacement spiking in late 2018 (UNHCR, 2019) and continuing throughout 2019 (The Guardian, 2019), this trend shows no sign of abating. This displacement exacerbated pre-existing vulnerabilities including high risks to acute shocks (e.g., flood, fire, and violence) and chronic stresses (e.g., youth unemployment, limited local authority capacity, lack of social accountability) (IOM DTM Nigeria, 2019). While there has been an influx of humanitarian actors to address immediate needs, the response has yet to transition from humanitarian to focus on the longer-term challenges Maiduguri faces in urban development and resilience.

Problem statement

Within this context, the project “From Response to Resilience in Maiduguri” led by the International Rescue Committee (IRC) in a consortium with ACTED and IMPACT seeks to address three interlinked problems: (1) the need for state and local authorities to plan for and manage urban risk, (2) the lack of community structures and civil society coordination to engage state and local authorities and hold them to account, and (3) the need to link up neighbourhood-grounded and data-driven initiatives which are inclusive of urban displaced communities with community engagement strategies and city-wide capacities for resilience. The projected timeline for this project is May 2019 until September 2021. These three problems are discussed in more detail below:

- 1. the need for state and local authorities to plan for and manage urban risk.** The Borno State government is demonstrating commitments to further develop and strengthen capacities for disaster preparedness and response and for inclusive participatory planning, including the Borno State's ability to coordinate with sub-state actors. The scale, frequency and intensity of displacement inflows combined with hazard-driven emergencies are exceeding Borno State Emergency Management Agency's (SEMA) capacities for planning, implementing, and managing multi-sectoral responses to humanitarian needs in camp-settings, and is insufficient in vulnerable urban neighborhoods.

. As the influx of IDPs from conflict-affected areas in Borno converge with rural-urban migrants, the city has suffered from an increased strain on resources and heightened congestion. In this context, risks such as outbreaks of disease, fire, and rising communal tensions and violence are becoming more acute, along with flooding risks induced by rapid and unplanned urban growth in certain areas. Moreover, while the humanitarian crisis has seen an increase in national and international emergency actors in Maiduguri, there is a lack of area-based, locally-led coordination mechanisms reuniting humanitarian, civil society, local and development actors intervening in the same neighborhood.⁵ An area-based approach is important to ensure that interventions in Maiduguri's neighbourhoods most vulnerable to hazards and impacted by displacement are impactful, well planned and integrated and contribute towards long-term disaster preparedness and resilience objectives of the city. International NGOs working in Maiduguri's urban area engage primarily in 'sector' coordination, often led by UN agencies and relevant line ministries. This sectoral approach focuses on bringing together expertise from different agencies to share lessons

⁵“A geographically targeted, multi-sectoral, and participatory approach which may be applied in both urban and rural settings” (Impact, 2018)

learned but can lead to segregation of activities and actors working with different mandates. This silo approach limits effective coordination, particularly between international and local actors, and provides no opportunity to leverage synergies between projects to maximize longer-term progress towards core development and resilience objectives. One of the essential resilience objectives is to enable the communities to develop interconnected and multi-level abilities to anticipate, recognize, adapt to, and learn from disruptions and disasters (Per Becker, 2014). Currently, the lacking capacities of local authority leadership (LGA and Ward officials) result in the majority of disaster response work being led by international actors or state-level authorities.

2. **The lack of community structures and civil society coordination to engage state and local authorities and hold them to account.** A second critical problem is the lack of community engagement and trust to support bottom-up planning. There is a lack of agency of Maiduguri's residents and social accountability between local authorities and their constituents. These results in a general lack of trust between duty bearers and rights holders. That is exacerbated by the lack of local elections since the crisis with residents often unable to identify their local ward councilor. Current channels for community engagement reside mainly with traditional leaders, who are often aligned to a particular religion and are predominantly men. Within this context, it is particularly difficult for women, children, and new arrivals to raise their voices through this traditional structure and there are few alternatives for them to communicate their needs and preferences as rights holders. Key institutional actors such as the Reconstruction Rehabilitation and Resettlement Ministry, Maiduguri's Metropolitan Council (MMC) and the State Ministry of Local Government and Emirates Affairs are demonstrating increasing interest in participatory and inclusive community planning, and address the lack of community engagement mechanisms. It is worth noting that the GIZ, as part of a large-scale Resilience program across the State of Borno, has been implementing a community development program since 2015 in all wards of MMC, and established Community Development Follow Up Committees that require further support. Even among international service providers, community engagement is fractured due to the sectoral nature of the humanitarian response, as previously mentioned. Each sector has created sub-groups in communities about their particular issue area; there may be women groups, community action groups, child protection committees, mother's groups, and WASH committees all active in the same community with limited coordination. That means that specific shared problems across these groups cannot be jointly addressed, hindering the community's ability to problem-solve across and it prevents the ability to aggregate concerns across community structures to be able to then raise their voice to local authorities.
3. **The need to link up neighbourhood-grounded and data-driven initiatives which are inclusive of urban displaced communities with community engagement strategies and city-wide capacities for resilience.** The crucial third problem is the absence of neighborhood-level disaster preparedness and resilience planning. The National Plan of Action (2017) had proposed the development of 'Local Emergency Management Committees' to lead on grassroots planning and participation in disaster management, but their establishment has not been implemented in Maiduguri, at least not with a clear DRR lens. The resilience and development-oriented planning and interventions led by the Borno State Ministry of Reconstruction, Rehabilitation, and Resettlement with the support of the UNDP have predominantly targeted rural LGAs. However, MMC is about to issue ward-level community development plans, developed with the support of a GIZ program. Although these planning pieces were informed by primary data collection, neither designed concrete urban resilience projects, they stand out as a key initiative from where to build research and community planning efforts. There have been limited actions that intentionally link short-term humanitarian assistance in urban Maiduguri to longer-term disaster preparedness and resilience plan. There is limited publicly available data on urban Maiduguri to support a planning process to ensure that investments being made are strategic and address the needs of the most vulnerable.

Information Gaps

To enable the consortium partner to run their activities and tackle the above-described problems successfully, AGORA seeks to close several information gaps. Because the area-based approach is focusing on the perceived neighborhood boundaries within an urban settlement area by the local population, the first information gap is to identify suitable areas for the neighborhood delineation based on the hazard exposure and population density of IDPs. Moreover, the consortium partners need detailed knowledge about key infrastructure, general demographics in terms of IDP and host populations, hazard exposure, and key characteristics of all neighborhoods in the pre-identified areas. The selection of the three target neighborhoods will be done based on hazard exposure, IDP density, ability of the essential services within the identified neighborhoods to meet the population's needs, and presence of assistance and service improvement initiatives provided by international organisations, private sector actors or public agencies. Following the selection of the three pilot neighborhoods more detailed information regarding humanitarian, service-related needs and vulnerabilities of the neighborhood population to various hazards have to be collected. Moreover, service and capacity gaps of the critical services & infrastructure have to be identified. Given the scale and prolonged nature of urban displacement patterns in the metropolitan area of Maiduguri, there is a increasing need to understand IDPs' movement intentions and opportunities to benefit from durable solutions either in terms of return or local integration. Thus, AGORA will realize a durable solution analysis for IDPs in the selected neighborhoods. Additionally, AGORA will monitor the relevance and efficiency of the project's area-based approach throughout the course of its undertakings, to inform the consortium partners about potential gaps and adaptations to meet the neighbourhoods' communities needs.

All of this information will inform the consortium's design of multi-level coordination platforms, neighborhood forums, capacity development, training activities, and participatory community resilience plans. Moreover, it should inform and trigger the south-south learning on durable solutions for state and local authorities with other cities in crisis. Finally, AGORA has to answer the question if the area-based approach is suitable for other areas in Nigeria.

AGORA Project activities

AGORA will close the information gaps by conducting four research cycle phases:

This methodology note will deal with Phase 1 out of four research cycle phases. The phase 1 will identify neighborhoods and their features across pre-identified hazard-prone and IDP-dense areas by FGDs, participatory mapping, and quantitative surveys. With this, it will enable the consortium to select the three most suitable neighborhoods for their following activities.

3. Methodology

Neighborhood delineation (Phase 1)

The main target of Phase 1 is to identify perceived neighborhood boundaries across the urban area of Maiduguri.

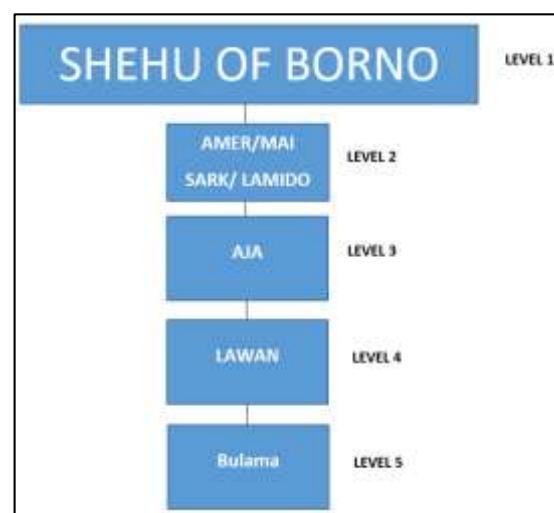
In the beginning of this phase, based on availability of secondary geospatial data on urban risks and IDP locations, GIS Heat mapping will pre-identify hazard-prone settlement areas with high IDP density in Maiduguri. Up to 200 neighborhoods will be covered by this phase. Next, the limits of these pre-identified settlements will be identified by undertaking a guided GPS-tracked walk around the neighbourhood boundaries with traditional leaders, to reflect

the communities's perceived area boundaries rather than administrative ward boundaries within Maiduguri⁶. Indeed, evidence from around the world has shown that neighborhoods within perceived boundaries by the population share commonly "an own history and culture shaped by shared customs, interests, values, and identity" (IMPACT, 2019). Those neighborhood boundaries tend to represent the settlement areas and their population better than formal administrative boundaries. Additionally, AGORA will use a structured questionnaire to collect information on basic neighborhood characteristics with the same traditional leaders. The data from the area delineation will be analyzed so as to select the neighborhoods which present relevant features with regards to the selection criteria detailed above. AGORA reserves the possibility to organize participatory mapping focus group discussions with community members of some of the neighborhoods suitable for selection, so as to gather additional information and inform the final selection. This step will pre-identify critical infrastructure, service locations & gaps, general demographics, and hazard exposure in the corresponding neighborhoods of urban Maiduguri. Both the KI and mapping FGD tools will inform area-based 5Ws mapping exercise, which will seek to provide information on humanitarian interventions, private investments and public undertakings in these areas. The use of secondary data will complete the methodology for neighborhood selection.. Furthermore, the secondary data review will inform the tool development and assessment methodology. Finally, it will help to triangulate the findings of the primary data collection & analysis. Hence, the team performs a secondary data review throughout the entire project cycle. Technically the review will be supported by the DEEP analysis tool provided by UNOCHA.

The final products of this phase will support the consortium in the selection of the three pilot areas.

The population of interest

For the delineation of the neighborhood boundaries, the team will approach traditional leaders to administer a key informant interview and undertake a guided walk around the target neighborhood. This will allow to establish a solid knowledge about these neighborhood areas. The Bulamas, who are the traditional leaders that are most representative of communities, will be the preferred key informants to take part in the mapping key informant interview. Data will reveal which neighborhoods are the most relevant for further analysis and potential selection will be prioritized and targeted for mapping focus group discussions (MFGDs). Participants to MFGDs will mostly be community members..



Secondary data review (outline key bibliography/sources you will use and for what).

Secondary data will be used throughout all stages of the research cycle to identify the areas of interest and to support the design of tools and triangulation with primary data.

- Mapping of neighborhood areas:** Geospatial data about the entire urban area of Maiduguri will be reviewed. The sources of the secondary data review include the databases of several sectoral information management departments. Hence, it consists of the sectors: Health, WASH, (Child) Protection, CCCM (Shelter), Education, Nutrition, ETS, Food Security, and Early Recovery and Livelihoods. Moreover, data available for OpenStreetMap will be included in the review, as well as

Figure 1 Traditional Leadership structure in Borno Emirate

⁶ AGORA is focusing on the perceived neighbourhood boundaries, which do not exist as administrative entities. The lowest level of administrative area in Maiduguri are wards, which surface area differ greatly from one to another and do not appear to be a suitable unit of intervention for community engagement. Indeed, ward councillors are reported as not being representative of the population and neighbourhood of varied typologies can lay into the same ward.

data on flooding from researchers on the University of Maiduguri. Finally, the reviewed geospatial data will be triangulated with primary data.

- **Analysis by the appliance of “DEEP”:** *“DEEP is an intelligent web-based platform offering a suite of collaborative tools tailored towards humanitarian crisis responses.”* It can be used for the efficient review of secondary data, especially while collaborating with a larger team. <https://beta.thedeep.io/>
- **Tool development & assessment methodology:** The secondary data review will also inform the development of quantitative and qualitative tools. The focus will be on the social and cultural background but as well on possibly available historical data about hazards & disasters in the studied areas.
- **Triangulation:** Existing Secondary data sources of other partners (WFP, UNOCHA, etc.) will be used to triangulate and complement the outcomes of the primary data collection.

➤ Eventually, about 150 neighborhoods will be pre-identified for this phase

Primary Data Collection

Sampling

Area	Data collection	Sample size	Sampling Method	Description
Urban Maiduguri	Mapping Key Informant Tools (General & Geo)	160	Purposive Sampling	Based on the previous GIS hazard mapping and Criteria FGDs, priority areas for the neighborhood delineation will be selected. For the actual tools, the respected traditional leaders will be approached for further participatory mapping of the neighborhoods existing in the pre-identified hazard-prone areas. Thus, the final sample size will be identified after GIS hazard mapping.
About 10 neighborhoods pre-selected based upon data from mapping KI	MFGDs	2 pre-selected neighborhood for about 10 neighborhoods	Purposive Sampling	The AGORA team will use mapping FGD FGDs targeting and civilians (sex disaggregated, involving both IDPs and hosts).

Tools

Mapping Key Informant Tools

To support the mapping of the neighborhood, two Kobo tools, and a paper-based tool are being used – the neighborhood guided walk tool (Paper-based), the mapping checklist tool – general (Kobo) and the mapping checklist tool- geo (Kobo). These three tools will be used to identify the pilot areas for the interventions of the consortium partners. The “general” tool will explore more aspects of the neighborhood in regards to general demographics, needs, and hazard exposure. The geo tool will help to locate as much as possible critical infrastructure and critical service locations within the identified neighborhood. An underlying secondary data review supports tool development. Before the data collection, the tool will be discussed with the consortium partners and liaison officers to ensure validity.

Mapping FGDs – Area identification

The mapping FGDs will support the selection of target areas for the subsequent neighborhood selection. Only a few neighborhoods which profile meets most of the selection criteria will be retained for MFGDS. The questioning route includes questions about vulnerabilities and exposure to hazards (Natural & Man-Made Hazards), community boundaries, and location of critical service delivery locations. It will allow to do a deep-dive into neighborhood features and further inform the selection of the 3 neighborhoods that are most suitable for the action according to the selection criteria.

Additional technical aspects for Kobo tools

The dual control principle will be used for the technical pilot test. The coder will code the questionnaire and then forward the tool to a second person. The second person will pilot test the tool in Kobo collect and check for potential errors. The Kobo Tool will be available in Hausa and English. At the end of each data collection day, the forms are uploaded to the Kobo server, after which the datasets are merged, cleaned, and uploaded to the REACH/IMPACT server daily. Data is collected by enumerators who are supervised by Field Offices (FOs) and Field Assistants (FAs) who in turn are managed by a Senior Field Officer (SFO), a Field Manager (FM) and Assessment Officers (AOs). Enumerators will be trained for two days before the quantitative data collection.

The Mapping Key Informant Tools will be piloted with one Key informant. Notes will be taken during the pilot and the results will be used to adapt the tools if necessary.

Moreover, Enumerators will be briefed every day before the data collection starts. The debrief will take place after the end of each data collection day to identify potential errors. The assessment officer will be accountable to monitor the incoming data together with the corresponding FO/data cleaning officer. The monitoring of the incoming data is an ongoing activity throughout the entire data collection process.

2.5. Data Processing & Analysis

Quantitative data quality and cleaning

Every day, at the end of data collection, the surveys are uploaded on the REACH/IMPACT Kobo-server and downloaded in .xls format as one dataset for a specific site. During the data collection, daily data check will be conducted and if necessary ad-hoc tool adjustments will be performed. The dataset is cleaned throughout the data collection, logging deleted entries and value changes, while the raw dataset is also stored. The Assessment Officer (AO) and Field Manager (FM) oversees Senior/Field Officers S/FOs, who are in turn responsible for data quality assurance and the supervision of field teams. The following protocols are in place to ensure the quality of data collected:

- Weekly spot checks of enumerators conducting interviews
- Daily data checks during data collection periods by S/FOs, who pre-identify outliers, abnormalities, and logical inconsistencies and give regular feedback to enumerators through monthly & ad-hoc training, during spot checks as well as the daily morning brief during data collection periods. Data points which cannot be resolved through the discussions with enumerators are deleted during the subsequent data cleaning.
- The GIS officer is responsible for processing the GPS related data in the evening of each data collection day to pre-analyse and evaluate potential shortcomings and grey areas.
- AOs will support the data checks and if necessary, will adjust the underlying tools.

- Final data aggregation and cleaning by GIS/Database Officers in Maiduguri, who provides feedback on outliers, abnormalities, and logical inconsistencies, which informs the design of general debriefs and enumerator training.

After all, the dataset is cleaned, the raw and cleaned dataset, along with the data cleaning log, will be saved and stored in a clearly labeled folder (see data management plan).

The Geodata collected by the participatory mapping tools will be combined with the GEO data provided by the mapping components of the qualitative tools (e.g. Mapping FGDs) and result in comprehensive maps of the neighborhoods.

Quantitative Data Analysis

For quantitative data gathered, the analysis will be conducted using either R, Excel, STATA, or SPSS, depending on the technical capacities of the team. Please see the data analysis matrix in the appendix for more information about the actual questionnaires.

Qualitative data quality and cleaning

All qualitative data will result in notes based on audio recordings. FGD will be transcribed in both English and in the language in which the FGD was initially conducted (usually Hausa) and uploaded to a clearly labeled Dropbox folder. OTranscribe, a free transcription software, will be used to produce the required transcripts in time. Subsequently, the Assessment officer will conduct a qualitative analysis using the software NVIVO. A data saturation tracking table will be utilized to ensure enough focus group discussions are conducted to reach saturation and saved on Dropbox.

The geodata collected by the participatory mapping components of the different tools will be combined with data collected by the quantitative tools. This combined data is processed into map products by ArcGIS for a further better understanding of the neighborhoods. So will the maps reclarify the prior selected neighborhood boundaries? Moreover, those maps will contain information about the locations of the different critical services and infrastructures in the neighborhoods.

Qualitative Data Validity and Analysis

Thematic analysis will be used to code and analyze FGD transcripts from semi-structured data collection by using the software NVIVO.

English-language transcripts will be uploaded to allow for multiple users to code, compare, and analyze results.

The AO will develop a preliminary coding scheme for the different qualitative tools based on the first transcripts & notes available of each data collection round. This preliminary scheme will be discussed with the CFP/Assessment Manager for a plausibility & bias check. The target is to develop a reliable codebook with up to 12 codes for each qualitative tool used.

Process for the selection of the 3 target neighborhoods

IMPACT will facilitate a working session with consortium partners to review findings from Phase 1 and select 3 neighborhoods that meet the selection criteria and appear to be the most suitable for the project's intervention. IRC and ACTEd will then convey a meeting with key institutional stakeholder to consult them on the relevance of the neighborhoods proposed for selection, to ensure the final decision accounts for local governments preferences.

4. Roles and responsibilities

Table 3: Description of roles and responsibilities

<i>Task Description</i>	<i>Responsible</i>	<i>Accountable</i>	<i>Consulted</i>	<i>Informed</i>
<i>Research design</i>	Assessment Officer (AO), Regional Assessment Manager	GIS Officer	GIS Team, Country Focal Point (CFP), Geneva Research Department (GRD)	Consortium partner (IRC, ACTED, REACH), relevant Clusters, relevant partners
<i>Supervising data collection</i>	Senior/Field Officer (S/FO)	Assessment Officer	Senior GIS Officer	CFP
<i>Data processing (checking, cleaning)</i>	S/FO	Data Base Officer	GIS Team, GIS Specialist, Regional Assessment Manager	CFP
<i>Data analysis</i>	AO, GIS Team	Senior GIS Officer	GIS Team, GRD	CFP
<i>Mapping</i>	GIS Team	GIS Specialist	GIS Specialist, GRD	CFP
<i>Output production</i>	GIS Team	GIS Specialist	GIS Team, CFP, GRD, AO	IMPACT HQ, ACTED, IRC
<i>Dissemination</i>	AO	CFP	GIS Specialist, Regional Assessment Manager	IMPACT HQ, ACTED, IRC
<i>Monitoring & Evaluation</i>	AO, GIS Team	CFP	GIS Specialist	IMPACT HQ, ACTED, IRC
<i>Lessons learned</i>	AO, GIS Team	CFP	GIS Specialist	IMPACT HQ, ACTED, IRC

Responsible: the person(s) who executes the task

Accountable: the person who validates the completion of the task and is accountable for the final output or milestone

Consulted: the person(s) who must be consulted when the task is implemented

Informed: the person(s) who need to be informed when the task is completed

NB: Only one person can be Accountable; the only scenario when the same person is listed twice for a task is when the same person is both Responsible and Accountable.

5. Data Analysis Plan

https://www.impact-repository.org/document/impact/c50bfa95/AGORA_NGA_DAP_Phase1_Maiduguri_October_2019.pdf

6. Data Management Plan

Detailed Data Management Plan is available upon request