BETTER ASSISTANCE IN CRISES RESEARCH

Targeting in Protracted Crises: Nigeria Case Study

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Summary

This country case study focuses on Nigeria and the specific challenge of conflict, violence, and insecurity. Using four waves of General Household Survey data covering the period 2010 to 2019, we analyse trends in poverty, food insecurity, shocks, and coping strategies among different population groups, differentiated according to where they reside in the country and the degree to which those areas are affected by violence, in particular as a result of the militant Islamist Boko Haram insurgency and conflicts between herders and farmers. The survey data is then used to model the notional performance of different potential targeting approaches across a range of targeting performance indicators, to indicate the types of choices and trade-offs entailed when selecting different targeting criteria for either routine or humanitarian social assistance programmes in the context of Nigeria. We also consider the status of enabling conditions for implementing different targeting approaches in the form of key infrastructure. We conclude with a discussion of the interrelated considerations social assistance programmes have to contend with when selecting appropriate targeting criteria.

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Executive summary

Introduction

The Better Assistance in Crises (BASIC) Research 'systems for design and delivery' theme includes a targeting workstream to look at how the design and delivery of social assistance programmes can be made more effective and responsive in crisis contexts. The findings from this workstream are intended to help inform global learning, as well as helping decision makers involved in the design and delivery of social assistance programmes in situations of protracted crises.

This country case study focuses on Nigeria. In it, we concentrate on the specific crises of conflict, violence, and insecurity that have increasingly afflicted the country over the past decade or more, with the main focus being on the militant Islamist Boko Haram insurgency, and conflict between herders and farmers in various parts of the country.

Conflict, violence, and insecurity in Nigeria

Nigeria faces multiple, prolonged security challenges, including the Boko Haram insurgency in the northeast of the country, and conflicts between nomadic pastoralists and farming communities across north-western and north-central states. Violence has resulted in more than 100,000 fatalities since 2006, displaced millions of people, destroyed public and private infrastructure, disrupted livelihoods, prevented access to basic social services, and contributed to widespread food insecurity and chronic poverty.

The vast majority of fatal violent incidents have taken place in the north of the country, with over half occurring in the North East zone, more than a third in the North West and North Central zones, and just over one-tenth occurring in the southern zones. A few states account for a disproportionate share of all violent incidents, with Borno state, at the epicentre of the Boko Haram insurgency, standing out with the highest number of recorded deaths.

A number of structural dynamics underpin this situation of ongoing conflict and insecurity. An oil-dependent economy has cultivated a rent-seeking elite who preside over an exclusive political settlement that has fuelled corruption and delegitimised the political system, as well as producing high levels of economic inequality. Ethnic, religious, regional, and communal identities are the fault lines along which political claims are made. Gender and youth identities also contribute to social friction, while politicians exploit Nigeria's diversity for electoral gain, exacerbating sectional tensions. Climate vulnerability adds yet another layer to Nigeria's challenges, negatively impacting livelihoods, and exacerbating food insecurity and poverty.

Nigeria is a decentralised state, with a three-tier government structure comprising federal, state, and local governments. While the federal government is responsible for designing policy, subnational governments have autonomy to interpret, fund, and implement those policies, resulting in considerable variation in the coverage and quality of social protection. A range of social assistance initiatives exist across states, but Nigeria still faces a major shortfall in social assistance coverage and expenditure. The National Social Safety Net Project endeavours to provide the fundaments of a national safety net system, including establishing a National Social Register.

Affected populations and welfare trends

According to national statistics, the poverty rate in Nigeria remained basically static between 2010 and 2019, which, with population growth, implies that the absolute numbers of poor people actually rose during that period. The observed trends show that poverty declined slightly between 2010 and 2015, but then rose again following the recession of 2016. Poverty is higher in rural areas and across northern parts of the country compared to urban areas and across southern parts. Nigeria's wealth distribution is also highly unequal, with a large proportion of the population consuming relatively little, alongside a very small proportion consuming much higher amounts. The Covid-19 pandemic and recent global price shocks are predicted to have negatively impacted poverty trends since 2019.

To consider the impacts of the Boko Haram insurgency and herder-farmer conflict, the two most significant sources of violence and insecurity in the country, we break down the Nigeria General Household Survey (GHS) sample across four waves into a number of discrete analysis groups. These analysis groups are constructed based on the zone in which populations reside, and comprise the North East, North Central, North West, and the southern zones taken together. In addition, we also disaggregate the GHS sample between people **directly** affected by violence (those who directly report suffering a violent event) and those **indirectly** affected (i.e. everyone else).

Examining the welfare trends of these various groups, we find that populations affected by violence and insecurity tend to have lower welfare compared to the rest of the country, and also worsening trends in terms of welfare across the four waves. Similarly, we find rising trends in terms of food insecurity, albeit here the overall trend across the period covered is also upwards for the population living in zones that are less affected by violence, or which are only indirectly affected – for these groups, the trend is likely to have been driven by the food price shocks that started to impact the whole of the country from 2015/16 onwards. Our multidimensional poverty measure also shows a rising trend across all analysis groups.

We also find that living conditions among our highly conflict-affected analysis groups tend to be lower than those found in other parts of the country, or among those not directly impacted by violence, in terms of access to safe drinking water, improved sanitation, and electricity, and use of charcoal as the main source of cooking fuel. Moreover, there are no clear trends regarding these characteristics, meaning that households' living conditions are not generally improving over time.

The shocks that households often face are an important factor contributing to these welfare dynamics. Large parts of the population are exposed to shocks of various types, with those in our highly conflict-affected analysis groups being even more exposed than the rest of the country. Although households deploy different kinds of coping strategies to try to mitigate the impact of these shocks on their welfare, GHS data indicates that communities' ability to respond to shocks through such strategies may well be diminishing over time.

Despite the high levels of poverty and vulnerability households exhibit across our conflict-affected analysis groups, only a small proportion of the population receives social assistance, albeit that proportion has grown in recent years. What assistance does exist is characterised by humanitarian aid in the states most affected by the Boko Haram insurgency, and school feeding (i.e. by more development-focused objectives) in those states most affected by the herder-farmer conflict. Parts of the country remain completely inaccessible to humanitarian aid, let alone more routine forms of social assistance.

Targeting simulations

The context of low welfare and high vulnerability among the majority of the population poses two inherent challenges for poverty targeting. One is that it will likely be difficult to accurately distinguish between poor and non-poor households at any given moment in time using proxy means testing. Another is that, because households that are not poor at one moment in time will often find themselves poor in the next moment (and vice-versa), without frequent retargeting (which may be difficult to sustain on a cost basis) it is difficult to provide an ethical justification for selecting one set of poor households in one moment in the full knowledge you will be excluding another set with those very same characteristics in the next.

Another implication of the Nigeria context is that, by itself, social assistance is unlikely to be able to play anything other than a purely protective role. This is because structural problems with the labour market (i.e. the dearth of adequately paid waged employment) mean that most poor Nigerians cannot translate their hard work into an escape from poverty. This challenge is exacerbated by weak social services provision, which hinders human capital development. Furthermore, while the need for social assistance is high, in some areas not only social assistance but even humanitarian aid is not possible due to conflict. This implies that coordinated investment across multiple policy domains (up to and including peacebuilding) is required before social assistance can do anything more than mitigate the worst effects of low welfare for the majority of households.

These challenges mean that there is a strong need to clearly articulate the specific policy objective any given social assistance intervention is aimed at and to match the targeting criteria to that objective. As social assistance cannot, by itself, solve the myriad problems households in Nigeria face, which prevent them from escaping poverty, it must necessarily be directed at specific risks and deficits (e.g. food security and malnutrition, or risks associated with particular stages of the life cycle). Therefore, questions as to who to target with social assistance and how need to be explicitly situated in relation to their stated policy objectives, including whether these are developmental or humanitarian in nature.

To illustrate these challenges, and to indicate the types of choices and trade-offs that may be necessary to make when selecting appropriate targeting criteria for particular policy objectives, we use GHS data to model the notional performance of a number of different targeting approaches. The approaches selected for the modelling exercise include ‘categorical’ approaches (e.g. based on age or disability status of recipients) and formula-based approaches (e.g. using a simple proxy means test). The results of the modelling show that, when trying to identify households living in extreme poverty, inclusion and exclusion errors tend to be high no matter which selection method is adopted. In addition, none of the chosen selection methods are especially good at identifying the food-insecure households, and their performance in relation to multidimensional poverty tends to be similar or worse. Adding a geographic component to the targeting criteria can make a difference to targeting performance, but this is dependent on both the metric being used and the underlying characteristics of the targeted population.

The results of the modelling point to the fact that clear and viable policy objectives are vital to appropriately measure targeting performance. However, even where these are present, a number of ethical considerations still need to be grappled with. These include the distributional effect of policy choices (e.g. when providing a flat rate benefit to households of different sizes), as well as equality of treatment of target populations (e.g. when geographic targeting is used). These ethical considerations have vital implications for the actual and perceived legitimacy of any given social assistance policy. From the perspective of communities, of clear importance is the degree to which selected targeting approaches tally with both local redistribution mechanisms and accepted understanding of the distribution of need among the population.

Community-based targeting

Targeting approaches used by the social assistance response to the crises of violence and insecurity in Nigeria include the use of existing data from the National Social Register and incorporate community-based targeting (CBT) approaches, participatory assessments of poverty, vulnerability ranking, and formula-based approaches. While it is not possible to replicate the results of CBT selection methods in the data – as we have no way of knowing who communities would select in practice – studies from neighbouring countries and elsewhere indicate that CBT is likely to incorporate similar levels of inclusion and exclusion errors to the categorical and formula-based approaches we can model.

While it may be expected that the participatory nature of CBT would render it comparatively legitimate as a targeting approach, evidence from similar contexts suggest that formula-based or categorical eligibility criteria may also garner high levels of legitimacy, perhaps even more so than CBT. For example, researchers have found that populations perceived formula-based methods to be more legitimate than CBT due to perceived manipulation by CBT committee members and information imperfections affecting the implementation of CBT. The limited evidence that is available from Nigeria on perceptions of social assistance targeting suggest that political influence over targeting processes and outcomes is a major concern.

Operational context

Beyond the policy objective, the operating environment necessarily conditions the choice of targeting mechanism. Social assistance delivery systems rely on underpinning infrastructure such as roads, electricity, communications infrastructure, financial services infrastructure, and civil registration systems, alongside human capital infrastructure as embodied in the skill levels of implementing agents and educational levels of the population. In northern parts of Nigeria, these underpinning infrastructures are not highly developed: fewer people are literate in the north compared to other parts of the country, and more children are out of school. Fewer people reside in households that have a mobile phone compared to households in the south and this pattern is repeated in relation to access to formal financial services.

Other crucial infrastructure is also lacking. Without a reliable way of proving one's identity, exercising basic rights, claiming entitlements, accessing government services, and conducting many daily activities can be hampered. Unfortunately, Nigeria has long wrestled with the challenge of establishing robust civil registrations systems, including for national identities, and the current system is highly fragmented. No single identity registry of necessary forms of identification has yet reached full scale and much work is still required before there is anything like comprehensive coverage.

Effective targeting also depends on physical access to and for communities. Connectivity by road is an essential part of the enabling environment for social and economic development and poverty reduction. However, only about 15 per cent of the federal road network is estimated to be in good to fair condition, with significant variation in rural accessibility across states: southern states tend to have relatively high accessibility, whereas northern states tend to have relatively low accessibility. The North East zone, in particular, is lagging behind. These conditions of poor underpinning infrastructure only add to the challenge of targeting social assistance across the country, both in routine and emergency situations.

Conclusions

Households in Nigeria are highly vulnerable to multiple security challenges, alongside other types of shocks, which severely reduces their resilience and exacerbates the challenge of combating high rates of poverty. Social assistance programming therefore has to contend with several different dimensions when selecting an appropriate approach to targeting.

Poverty targeting in Nigeria presents two inherent challenges. Proxy means testing struggles to accurately distinguish between poor and non-poor households at any given point in time, and the constant flux of households between these groups means that without frequent retargeting (which is hard to sustain on a programme cost basis), it is difficult to provide an ethical justification for poverty targeting. Inclusion and exclusion errors tend to be high when trying to select people in poverty no matter which targeting mechanism is adopted.

Accurately identifying food insecure households and populations with any single targeting mechanism is even more challenging than trying to select poor households and populations. This implies that it may well be more appropriate to geographically target food aid using food security surveillance systems and then provide that aid universally in targeted areas.

Geographic targeting can be an effective mechanism to focus resources on the areas where need is highest, but is not without complexity. Applying a geographic targeting component introduces an ethical trade-off in terms of equality of treatment – households or individuals with the same characteristics will not be treated equally as a result of where they live – but may be temporarily justified on the basis of necessity if accompanied by a policy commitment to expand to all areas as soon as fiscally possible. Geographic targeting also requires the existence of credible data to assess needs alongside strong governance structures to ensure resource allocation is fair and accepted by all key stakeholders.

Targeting criteria should be aligned to specified policy objectives. There are important differences between routine social assistance and emergency response, particularly in terms of objective (mitigating poverty and risks associated with the lifecycle vs addressing immediate extreme deprivations and/or life-threatening risks). Nevertheless, there are overlaps between the two policy domains, especially in Nigeria where chronic vulnerability to shocks such as violence and conflict can produce protracted exposure to emergency conditions. In these circumstances, social assistance policies and emergency response policies need to be clearly delineated and play complementary roles. The targeting criteria for any given social assistance or emergency response policy needs to be clearly aligned with explicit policy objectives. An important consideration in the selection of targeting criteria for emergency response is the speed at which it can be delivered.

Communities need to clearly understand and accept targeting criteria and their rationale. Targeting approaches are more likely to be perceived as legitimate – and therefore not negated by informal redistribution mechanisms – when the policy objectives of the support are well understood by the population and the rationale for eligibility criteria align well with those objectives. Ensuring these conditions also reduces scope for political interference. Populations therefore need to be adequately primed on the purposes of the policy through accessible consultations and information, with the link between the objectives and the targeting criteria clearly explained.

Social assistance needs to be coordinated with other policy domains. The number of complex, interrelated factors determining welfare dynamics in Nigeria mean that to reduce poverty and inequality, and thereby support the reduction of violence and insecurity in the country, social assistance policies have to work in tandem with policies in other domains such as health and education, labour market formalisation, agricultural and/or industrial policy, and peacebuilding and governance.

Developing underpinning infrastructure will facilitate more efficient targeting and prevent fraud and manipulation. The underpinning infrastructure required to maximise the efficiency of targeting processes, and minimise the degree to which these can be fraudulently manipulated, extends across a diverse array of domains. These include early warning systems, civil registration systems, and infrastructure such as roads, electricity, and telecommunications.

Accounting for costs. Delivering any given targeting mechanism requires a minimal level of service quality to ensure it is effectively and equitably implemented, which in turn requires operational capacity in the organisations involved in implementing it. This capacity includes collecting and managing the necessary data, as well as managing required monitoring and grievance redress mechanisms. The costs associated with achieving a minimal required level of service delivery need to be accounted for in programme design and budgeting, whatever the preferred targeting mechanism.

List of acronyms and abbreviations

ACLED	Armed Conflict Location & Event Data Project
BASIC	Better Assistance in Crises
CBT	community-based targeting
CI	confidence interval
CIDT	Centre for International Development and Training
FEWS NET	Famine Early Warning System Network
EA	enumeration area
GDP	gross domestic product
GHS	General Household Survey
IDP	internally displaced person
LGA	local government area
MPI	multidimensional poverty index
NBS	National Bureau of Statistics
NGO	non-governmental organisation
NLSS	Nigeria Living Standards Survey
NSR	National Social Register
PMT	proxy means test
RAI	Rural Access Index
URB	Unified Registry of Beneficiaries
YESSO	Youth Empowerment and Social Support Operations

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1. Introduction

Targeting social assistance in situations of protracted crises, displacement, or recurrent climate shocks to reach those most in need in a timely and effective manner, and without doing further harm, is a complex technical and political challenge for both development and humanitarian actors across government and non-governmental sectors. Trade-offs involving costs beyond the economic – such as risk of exclusion and concerns over protection and social cohesion – raise key questions about who to target, how to target them, or whether to target at all (i.e. through universal coverage or lotteries). Predicting which targeting approaches will lead to optimal impacts in contexts where welfare conditions are dynamic, and different population groups are affected by different shocks in different ways, and/or where systems of state provision may be damaged, compromised, or non-existent, is difficult, especially under conditions of time pressure, limited information, and/or inadequate resources. The multiplicity of actors involved in delivering social assistance in crisis situations, each with their own targeting cultures and mandates, presents yet a further challenge, often resulting in uncoordinated, patchy and limited assistance, creating confusion among the population and raising key questions about equity of treatment.

While targeting effectiveness is fairly well researched in stable development contexts, there is much less understanding and evidence about what works best in protracted crisis settings. This gap stems from a combination of factors. First, such settings (e.g. fragile and conflict-affected settings) often provide more complicated and dynamic underlying contexts, with larger gaps in understanding what affected populations' needs may be (including how to define those needs; e.g. in terms of consumption or food security measures), who is most 'in need' and how to identify them, and how distribution of needs changes as a result of climate or other shocks (such as conflict), including due to population displacement. Second, protracted crisis settings are often characterised by a plethora of different actors and interventions, often with little harmonisation or transparency of targeting approaches between them. Finally, while there have been some empirical and qualitative studies of targeting performance in crisis settings, much humanitarian programming, in particular, lacks robust evaluation of targeting effectiveness on the ground.

While these evidence and research gaps need to be addressed, it is important to comprehend targeting in a holistic way. This means not just in terms of the performance of different targeting approaches according to singular measures such as inclusion and exclusion errors, but how a programme's design is necessarily influenced by social and political considerations, and the ways in which contextual and implementation conditions also shape targeting performance. As choice of targeting approach is as much a political as a technical decision,[1] crucial to targeting performance is the degree to which programme objectives are clear and explicit, and/or understood and accepted by different stakeholders, including both beneficiary and non-beneficiary population groups, programme implementers, political actors, and humanitarian or development partners, with targeting mechanisms aligned with those objectives according to a clear rationale.

To try to address some of these gaps in understanding and evidence around targeting in protracted crisis contexts, the Better Assistance in Crises (BASIC) Research targeting workstream centres on four broad areas of enquiry:

1. **Who** are the shock-affected populations?
2. **How** are they affected?
3. **Which** targeting approaches are most effective in identifying them?
4. **What** infrastructure or conditions does the data provide information on to potentially help or hinder implementation of selected targeting approaches?

[1] For example, Lind and Harvey (2022) suggest that the attitudes and understanding of national and subnational elites regarding poverty, dependency, and the role of social assistance shape policies, including notions of eligibility and approaches to targeting. They also highlight how implementation of social assistance policy can itself become a political process of negotiation and recalibration as delivery is adapted to suit local realities and power relations between central and local levels of government (Lind and Harvey 2022: 2).

Cutting across these questions is the theme of gender equality and social inclusion. As far as possible, in what follows we seek to comprehend the extent to which women and other groups with particular needs or vulnerabilities (e.g. people living with disabilities, ethnic minorities, etc.) are included in different targeting approaches, the gendered nature of targeting criteria, and the design and outreach of different selection and identification processes, including factors related to self-selection and the appropriateness of programme objectives and design for women's or particular vulnerable groups' needs.

To address these areas of enquiry we aim to conduct three country case studies – covering Ethiopia, Niger, and Nigeria – and a synthesis paper that will bring the findings from the case studies together to draw out general lessons for targeting social assistance in crisis contexts. The findings from these outputs are intended to help inform global learning, as well as helping decision makers involved in the design and delivery of social assistance programmes in situations of protracted crises, be they development or humanitarian focused, including governments, development partners, international financial institutions, and humanitarian actors.

Each country case study focuses on a specific period or event to demonstrate how the challenge of targeting might be approached in situations of protracted crisis based on an actual historical example. The objective of this approach is to generate insights around the topic of targeting in a comparative way and by considering vulnerability to such crises as a dynamic condition. The purpose is to consider the choices and trade-offs social assistance actors may encounter when designing and implementing their programmes, and what these imply for social assistance policies.

This country case study report focuses on Nigeria. In it, we concentrate on the specific crises of conflict, violence, and insecurity that have increasingly afflicted the country over the past decade or more, with the emergence of the militant Islamist Boko Haram insurgency in the North East zone, and the intensification of conflict over land and natural resources in the North West and North Central zones, between herders, mainly from the Fulani ethnic group, and farmers of other ethnicities. Such insecurity spills over into criminality and also affects other regions of the country, functioning as both the cause and consequence of acute shocks to the population, and contributing to already challenging underlying poverty dynamics and protracted population displacements, as well as fully blown humanitarian crises. This analytic choice is driven by the objectives of the BASIC targeting workstream, which seeks to analyse conflict as one major type of shock, as well as the availability of national survey data for the period 2011–19, which affords us a rich insight into welfare trends within the population of Nigeria around a peak period of violence in 2014–15.

The primary intention of this paper is to inform global learning and practice, rather than specifically addressing the question of how social assistance should be directed in Nigeria today. Although the findings may be useful with regard to that question, its answer can only be the outcome of legitimate negotiation between relevant country stakeholders.

2. Data and methods

For this country case study we rely on two primary sources of data: the Armed Conflict Location & Event Data Project (ACLED) and Nigeria General Household Survey (GHS) panel data.

ACLED provides information on the dates, actors, locations, fatalities, and types of all reported political violence and protest events around the world, including in Nigeria (ACLED n.d.). We use this data to understand and analyse the distribution of violent events associated with conflict and insecurity across the country, including a specific focus on the Boko Haram insurgency and the herder-farmer conflict (see section 3). The ACLED data used in this study covers the period 2009–22.

The Nigeria GHS provides detailed information on household living conditions and livelihood activities for a nationally representative sample across four survey waves covering the period 2010/11–2018/19.[2] Each survey wave comprised two visits to capture seasonal fluctuations: a post-planting season visit and a post-harvest season visit the following year. Around 5,000 households were interviewed in each survey wave, giving a total panel dataset of close to 20,000 observations. The survey covered six administrative zones in each round and is representative at zonal level. After cleaning the datasets for our purposes, the final GHS sample distribution used for this analysis is detailed in Table 2.1; 1,468 households are panelled across all four waves of the survey.

Table 2.1: Nigeria GHS sample distribution (by year and zone)

Zone	2010/11	2012/13	2015/16	2018/19	Total
North Central	795	789	792	842	3,218
North East	798	742	640	824	3,004
North West	898	874	880	845	3,497
South East	794	762	753	824	3,133
South South	778	761	744	818	3,101
South West	876	788	772	823	3,259
Total	4,939	4,716	4,581	4,976	19,212

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11, 2012/13, 2015/16 and 2018/19 (NBS 2023).

2.1 Defining analysis groups

To address the first key area of enquiry – 'Who are the shock-affected populations?' – we define a number of analysis groups, drawing on both ACLED and GHS data.

2.1.1 Primary analysis groups

The ACLED data clearly shows how violent events, and fatalities from violent events, including those associated with particular conflicts such as the Boko Haram insurgency and the herder-farmer conflict, are heavily concentrated in certain states and zones (see section 3). As the GHS data is representative at zonal level, we use this as a key disaggregation of interest. To construct our primary analysis groups, we thus distinguish between the three northern zones individually while combining the three southern zones into a single group to act as a comparator. We thus end up with four primary analysis groups: North East, North Central, North West, and southern zones.

Although the GHS provides representative estimates at the zonal level for each wave, it is important to note that the sample did evolve over time. This can be observed by comparing the population estimates derived from the GHS with United Nations (UN) population projections derived from the most recent completed national population census in 2006. The population estimates from GHS wave 1 (2010/11) and wave 2 (2012/13) are within 2–3 percentage points of UN population projections for those years. However, the

[2] The Nigeria GHS data can be accessed via the World Bank Microdata Library (NBS 2023).

population estimates for GHS wave 3 (2015/16) and wave 4 (2018/19) are significantly below UN population projections for those years. In wave 3, the GHS estimates a total population of around 168 million, compared to a UN projection of 189 million (11 per cent lower). In wave 4, the GHS estimates a total population of around 152 million, compared to a UN projection of 203 million (25 per cent lower). There are several possible reasons for these differences.

Sample attrition is one potential explanation (e.g. if sample weights are not adjusted for respondent attrition, then the population is likely to be underestimated), but according to the GHS basic information documents, weights are adjusted for attrition, so this should not be part of the reason. However, although the sample weights are adjusted for non-response, they are also calibrated to reflect the underlying population in wave 1, so do not account for population growth, which likely is part of the explanation.

Another partial explanation could stem from changes to the sample frame: while the refreshed GHS 2018/19 sample maintains both national and zonal representativeness of the original (2010/11) GHS panel sample, the security situation prevented full coverage of the North East zone. Due to security concerns, rural areas of Borno state were fully excluded from the refreshed sample and inaccessible urban areas were also excluded. Security concerns also prevented interviewers from visiting communities in other parts of the country where conflict events were occurring. Enumeration areas (EAs) that could not be accessed were replaced with other 'randomly selected' EAs in each zone so as not to compromise the sample size (NBS 2016, 2021). As a result, the wave 4 sample is representative of areas of Nigeria that were accessible during 2018/19. Similarly, in wave 3, the majority of attrition from the previous wave is accounted for by the poor security situation in the North East zone, whereby 14 EAs could not be visited across Borno and Yobe states (*ibid*.). If the population size was not taken into account when replacing the EAs (e.g. by selecting replacements using probability proportional to size), then it could be that, by chance, the replacement EAs comprised a smaller population than those they replaced, which would negatively impact the total population estimate.[3]

While we have not been able to conduct extensive analysis to try to determine which of these factors explains the differences in total population estimates observed, we do consider the calibration of sampling weights to not take population growth into account as likely to explain a good proportion of it. More importantly for our analysis, however, is the implication of the changes in the sample frame in the final wave of the survey. The fact that the security situation in the North East zone meant that all rural areas of Borno were excluded, plus some inaccessible urban areas, means that estimates for the North East zone (and indeed some other conflict-affected parts of the country) are likely to be biased in favour of higher-welfare populations. This is because poverty tends to be higher in rural areas compared to urban areas (see section 4) and because analysis has shown that conflict has a positive relationship to poverty (Diwakar and Brzezinska 2023). This means that poverty, or low-welfare rates (see section 2.2), as well as other indicators of wellbeing such as food security, are likely to be underestimated for these zones, especially in wave 4, and to a lesser extent in wave 3.

2.1.2 Secondary analysis groups

The GHS contains data on the different kinds of shocks that directly affect households. In wave 1 (2010/11) and wave 2 (2012/13), modules 15a and 15b covered shocks faced by the household in the past five years, and deaths of household members experienced in the past 12 months, respectively. In wave 3 (2015/16), a new module (15c) was added, which gathered information on experience of conflict affecting the household in the period 2010–16. In wave 4, modules 15b and 15c were dropped, and the shock module asked about shocks experienced since 2017 (i.e. around either one or two years before that round of the survey, depending on the date of the survey visit).

[3] A further contributing factor to the differences in population estimates could be population displacement. For example, if internally displaced people and/or refugees fleeing Nigeria are accounted for in the EA population data, but not in the UN population projections. We consider this possibility unlikely.

Although the GHS shocks module has changed over time, using this data we can construct an indicator of whether a household reports being 'directly' affected by violence across each survey wave and thereby classify the sampled population into two distinct groups: those 'directly' affected by violence and those 'indirectly' affected (i.e. everyone else). Our indicator is constructed based on data from all relevant shock modules (i.e. 15a, 15b, and 15c), using the given recall periods to identify whether households in each wave reported experiencing any kind of violence-related shocks. All those reporting that they experienced a violent shock, violent event, or violent death in the given recall period preceding the survey round are classified as directly affected by violence.

It should be noted that owing to the reduced information on shocks and deaths contained in the wave 4 dataset, the estimate for this round is not comparable to that of previous rounds and likely underestimates the size of the population directly affected by violence in wave 4.

2.2 Welfare analysis

To address the second key area of enquiry for this study – 'How are shock-affected populations impacted?' – we compare our analysis groups across various measures of welfare using information from the GHS. These include measures of welfare based on consumption expenditure data, measures of welfare based on food security data, and measures of welfare based on a bespoke multidimensional poverty index (MPI). We also consider information detailing the number and types of shock that households report experiencing, as well as the coping strategies they deploy to mitigate the impact of those shocks, on the basis that shocks and coping strategies can be key determinants of welfare.

2.2.1 Measures of welfare deriving from consumption expenditure data

Poverty in Nigeria is measured using consumption expenditure data from the Nigeria Living Standards Survey (NLSS), the most recent two rounds of which were conducted in 2009/10 and 2018/19. However, direct comparison of consumption expenditure data between these two rounds is not possible due to changes in the way the data was collected. Neither is the NLSS consumption aggregate comparable to the consumption aggregate derived from the GHS due to differences in the way the data was gathered across the two surveys.

To assess trends in poverty over this period, therefore, the World Bank deploys two techniques: back-casting and survey-to-survey imputation. Back-casting involves taking the consumption distribution for 2018/19, then applying past sector-specific real gross domestic product (GDP) and population growth rates to a simple micro-macro model to estimate what the consumption distribution – and hence poverty – would have been in previous years. Survey-to-survey imputations, on the other hand, construct a model for the relationship between monetary consumption and a series of non-monetary variables using the 2018/19 NLSS, then use this to impute the level of monetary consumption in a previous survey that contains the same non-monetary variables, namely the 2010/11, 2012/13, 2015/16, and 2018/19 GHS. The two techniques are found to produce consistent results, which are that poverty reduction in Nigeria stalled in the middle of the past decade, declining marginally between 2010 and 2015, before rising marginally up to 2019 (World Bank 2022a). Further details on these methods can be found in Lain, Schoch and Vishwanath (2022).

Although imputed poverty rates for the GHS across all survey rounds are thus available, we do not use these when defining the consumption-based welfare indicators used in this study. Instead, we follow Diwakar and Brzezinska (2023) and focus on a welfare line constituted by a relative poverty measure given by the consumption expenditure level at the 40th percentile in the national welfare distribution, which delineates the bottom two national consumption quintiles. This measure was selected because it is almost identical to the national poverty rate in 2019, as well as being very close to the imputed poverty rates for all GHS waves using the international poverty line of US$1.90 per person per day, which ranged from 43.5 per cent in 2010/11 to 41.9 per cent in 2018/19.[4]

[4] In addition, the World Bank's analysis (World Bank, 2022a; Lain *et al.* 2022), as well as discussions between the authors of this case study and Diwakar and Brzezinska (2023), reveal data quality concerns around the GHS consumption aggregate. While these issues do not undermine the quality of the overall aggregate, they bolster the decision to focus on a relative measure of consumption expenditure rather than an absolute measure.

Using this relative measure of consumption falling within the bottom two quintiles we can thus determine a threshold to analyse welfare trends in our analysis groups using standard measures of poverty analysis, such as the 'poverty rate' (the proportion of the population that falls below a given consumption expenditure threshold), depth of poverty (the average consumption gap between households falling below the given welfare threshold and the threshold itself), and severity of poverty (which equates to the average of the squared poverty gap; severity of poverty thus provides a measure that gives greater emphasis to households that fall further below the given welfare threshold). To avoid confusing our measure of welfare with the way poverty is officially measured nationally, we refer to the low-welfare line, low-welfare households, and so on.

2.2.2 Food security welfare measures

The GHS provides a variety of information on household food security, including food consumption expenditure from the consumption module (from which one can derive the share of food in total consumption, alongside other measures such as dietary diversity), as well as specific measures derived from a bespoke GHS module on food security. The bespoke module provides two main measures of food security that we use: one that looks at the immediate food security situation (whether a household reports eating less food, or less healthy/non-preferred food, or skipping entire meals, in the past seven days); and one that considers a more general food security situation (whether a household reports having insufficient food to feed its members at any points over the past 12 months). As the GHS is gathered in two visits to account for seasonality (post-harvest and post-planting), we take the two food security measures described above from the post-planting visit data, as this is the time of highest food insecurity.

It should be noted that the food security module changed in wave 4, meaning that our immediate food insecurity indicator in wave 4 is not strictly comparable to that of previous waves. The key difference relates to the recall period, which in wave 4 changes from seven days to 30 days. Caution thus has to be exercised when interpreting the trend for this indicator post-wave 3.

2.2.3 Multidimensional poverty

The global MPI for Nigeria was constructed using multi-indicator cluster survey data from 2016–17 (OPHI 2018). The national MPI was constructed using a bespoke survey conducted between November 2021 and February 2022 (NBS 2022).[5] Both the global and national MPIs include ten indicators covering three dimensions of health, education, and living standards. As not all of these indicators (or the variables underpinning them) are available in the GHS, we constructed a bespoke MPI to examine trends in multidimensional poverty among our analysis groups and provide an indication of how different selection criteria perform in terms of targeting multidimensionally poor households.

Following the global and national MPIs, our MPI is based on three domains of deprivation: health, education, and living standards. It was created using the method of Alkire and Foster (2011) and following the procedure provided by Pacifico and Poege (2017). Each domain is weighted equally, as is each indicator within each domain. A cut-off value of 33.33 per cent was used, in line with the global MPI. Indicators were selected based on information available within the GHS. The indicators are:

- Health domain: household reports having had insufficient food at any time in the 12 months prior to the post-planting season; household reports eating less, or less preferred, food, or skipping meals in the past seven days in the post-planting season.
- Education domain: household contains out-of-school children; household head is not literate.
- Living standards domain: inadequate housing (dwelling floor, walls, or roof are made of rudimentary/natural materials); no access to improved sanitation; no access to safe drinking water (piped water, public tap, borehole or pump, protected well, protected spring or rainwater, within 30 minutes' walk, round trip).

[5] The 2022 national MPI built on the 2018 national MPI, which was constructed using data collected via the Human Development Indices Survey, a study commissioned as part of the production of the Nigeria Human Development Report.

2.2.4 Asset index

Another indicator of welfare we develop for our analysis is an asset index. This is constructed using the principle component analysis command in Stata software, taking as components all household assets recorded in the GHS and disaggregating between urban and rural locations. The raw asset score is then indexed by sorting the score distribution into quintiles.

2.3 Targeting analysis

To address the third key area of enquiry for this study – 'Which targeting approaches are most effective in identifying the target populations?' – we simulate the performance of various different targeting approaches potentially applicable for social assistance programming in Nigeria using the Nigeria GHS. By exploiting this data, we are able to consider dimensions of targeting performance such as coverage, inclusion and exclusion errors, and the ratios of different measures of welfare between the nominal beneficiary and non-beneficiary population groups. Details on the targeting approaches modelled and the precise measures of targeting performance deployed are given in section 5 as we consider it more helpful to the reader to explain those closer to and as part of that analysis.

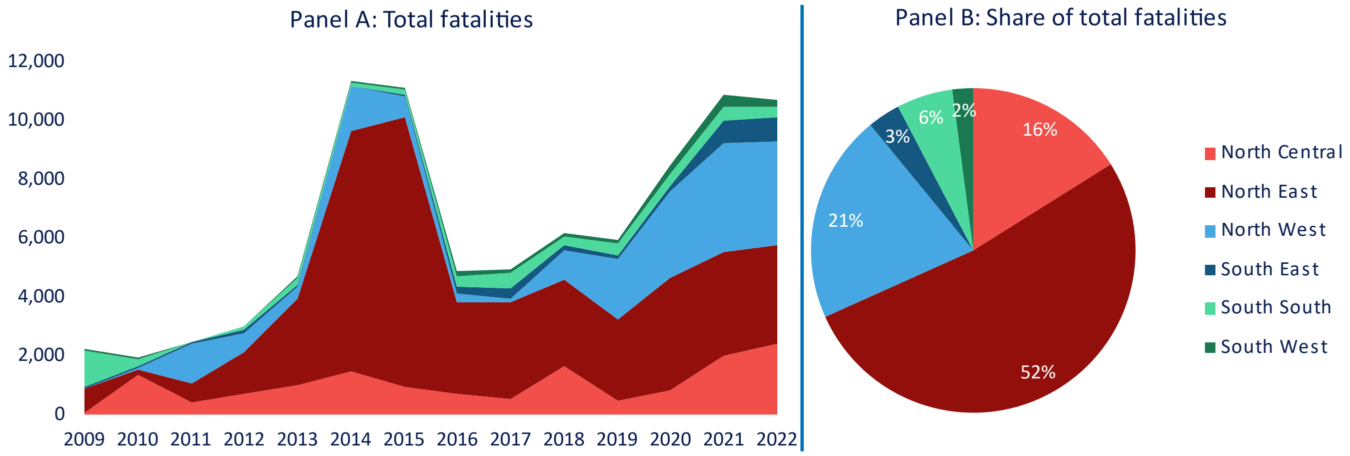
2.4 Enabling conditions

To address the last key area of enquiry for this analysis – 'What infrastructure or conditions does the data provide information on to potentially help or hinder implementation of selected targeting approaches?' – we again exploit the GHS using simple descriptive statistics to look at the prevalence of key physical and human capital infrastructure such as ownership of mobile phones, access to formal financial services, access to education, literacy, and dwelling characteristics such as access to electricity and improved sanitation. In addition, we draw on secondary data regarding the status of civil registrations and the road transport network. The sources of the secondary data are given in the main text of the analysis (see section 6).

3. Conflict, violence, and insecurity in Nigeria

Nigeria faces multiple, prolonged security challenges. These include the Boko Haram insurgency in the north-east of the country, conflicts between nomadic pastoralists and farming communities in north-western and north-central states, ongoing militancy in the Niger Delta, and sporadic violent attacks related to Biafran secessionist claims in south-eastern states. The violence has resulted in more than 100,000 fatalities since 2006, displaced millions of people, destroyed public and private infrastructure, disrupted livelihoods, prevented access to basic social services such as education and health, and contributed to widespread food insecurity and chronic poverty (Herbert and Husaini 2018; Sabbagh 2018). ACLED (2019) indicates that the number of fatalities related to conflict, violence and insecurity events across the country started to rise from 2009–10, peaked in 2014–15, then rose rapidly again in the years following Covid-19 (Figure 3.1, Panel A).

Figure 3.1: Number and share of fatalities from conflict, violence, and insecurity (2009–22)



Source: Authors' own. Created using data from ACLED (2019).

The vast majority of fatal violent incidents took place in the north of the country, with over half (52 per cent) occurring in the North East, 21 per cent in the North West, and 16 per cent in the North Central zones. The southern zones together account for 11 per cent of all fatalities (Figure 3.1, Panel B).

A few states account for a disproportionate share of these violent incidents. Borno, in the North East zone, at the centre of the Boko Haram insurgency, has by far the highest number, with over 36,000 recorded deaths (41 per cent of the total) between 2009 and 2022; while the neighbouring states of Adamawa and Yobe together account for around 6,500 recorded deaths (4 per cent and 3 per cent, respectively). In the North West and North Central zones, Benue (4 per cent), Kaduna (8 per cent), Katsina (3 per cent), Nassarawa (1 per cent), Niger (3 per cent), Plateau (5 per cent), Taraba (2 per cent), and Zamfara (7 per cent) together account for 31,000 recorded deaths (35 per cent).Taken altogether, these 11 states account for over four-fifths (83 per cent) of fatalities from violent conflict and insecurity over the period.[6]

While each of the different conflicts and intercommunal tensions in Nigeria have their own particular logic and context, various structural dynamics cut across and shape them. These include social, economic, cultural, political, and environmental drivers of conflict and instability:

- An oil-dependent economy has cultivated a rent-seeking elite that presides over an exclusive political settlement, which has fuelled corruption and delegitimised the political system, as well as producing high levels of economic inequality. Distributional injustices and exclusive growth mean that inequality, poverty, and lack of access to basic services underlie many grievances across the country, as well as restraining development for large parts of the population. Economic disparities between north and south are stark.
- A large and heterogeneous population with overlapping ethnic, religious, regional, and subethnic (communal) identities provides the fault lines along which political claims are made. Rooted in the country's colonial history, these fissures have deepened in subsequent years.

[6] Note: totals have been rounded.

- Gender and youth have also emerged as delineators of identity, albeit often superseded by ethnicity. Gender inequality is both a cause and a consequence of social tensions.
- Politicians often exploit Nigeria's diversity, using chauvinistic appeals based on ethnicity, religion, and regionalism to secure electoral support. Numerous elections over the past quarter of a century have been plagued by sectional tensions and violence.
- Contests over increasingly scarce land and water resources threaten peace and stability in many states, particularly in the north. Such conflicts intersect with ethnicity and other cultural issues, and have the potential to escalate quickly (Herbert and Husaini 2018).

These determinants of violent crises are further exacerbated by Nigeria's exposure to climate hazards. USAID (2019) estimated that more than 41 million people, nearly a quarter of the Nigerian population, lived in areas vulnerable to climatic shocks. In the southern states, these include storms, ocean surges, and recurrent drought. In northern and central states, desertification caused by climate change results in recurrent drought and wildfires, with severe flooding experienced every few years. These climatic shocks disrupt livelihoods and further contribute to the destruction and loss of property and assets, as well as food insecurity and poverty. In addition, there is evidence to suggest that climate-induced shocks provoke violence. For example, adverse climatic conditions result in lower yields and thus reduced incomes for farmers, which may lower the opportunity cost of engaging in violence. At the same time, violence and instability limit the ability of the Nigerian government to undertake climate mitigation measures (Granguillhome *et al*. 2021), potentially fuelling further discontent over a history of geographically and socially inequitable development.

Below, we briefly discuss the two major conflicts that we focus on in this study – the Boko Haram insurgency and the herder-farmer conflict – which together accounted for almost half (46 per cent) of all recorded fatalities from conflict, insecurity and violence in the country between 2009 and 2022. We then outline the various social assistance responses to these violent crises.

3.1 The Boko Haram insurgency

The insurgency started in earnest in 2009 when Boko Haram announced its intention to create an Islamic state in north-eastern Nigeria and launched an armed rebellion against the Nigerian government. However, the government only designated Boko Haram a terrorist organisation in 2013, declaring a state of emergency in the affected states and launching a counter-offensive through the military and police (Stoddard *et al*. 2020).

The Boko Haram insurgency is the deadliest conflict in Nigeria. Violence is concentrated in Borno state, in Nigeria's north-east, but has spilled over into Adamawa and Yobe, plus other states. The conflict has been ongoing since 2009, with the group conducting almost daily attacks in 2014 and 2015 at the height of the crisis.[7] Boko Haram has deployed brutal tactics during the conflict including, among others, use of suicide bombings, abductions, kidnapping for ransom, sexual violence, mass slaughter of entire villages, and looting. While incidents of violence are severely underreported, OCHA (2018) estimates that more than 4,000 women and girls have been abducted. At the same time, violence and fatalities have also occurred as a result of Nigerian security forces' involvement in the conflict. The military has reportedly committed war crimes including acts of sexual violence, arbitrary detention, and razing of villages (Amnesty International 2020).

The number of fatalities attributed to the conflict differs between sources, and many fatalities go unreported. The Nigeria Watch database indicates that between 2006 and 2016, the Boko Haram conflict caused approximately 33,000 fatalities, of which roughly the same number of deaths have been attributed to the insurgents (16,666) as to Nigerian security forces (16,000) (Herbert and Husaini 2018). The insurgency is responsible for almost one-third of the 101,000 deaths related to public violence recorded in Nigeria during this period. Meanwhile, ACLED records some 31,203 deaths from the conflict between 2009 and 2022, representing some 35 per cent of total fatalities from violence across the country during this period.

The crisis has contributed to high poverty rates, displaced millions of people, and caused widespread food insecurity in Borno, Yobe, and Adamawa states. Poverty rates in north-eastern Nigeria are significantly higher than the national average, with 77 per cent of people living in poverty in the north-east in 2018 compared to 46 per cent of people nationally (OCHA 2018). This is attributed to the effects of the conflict –

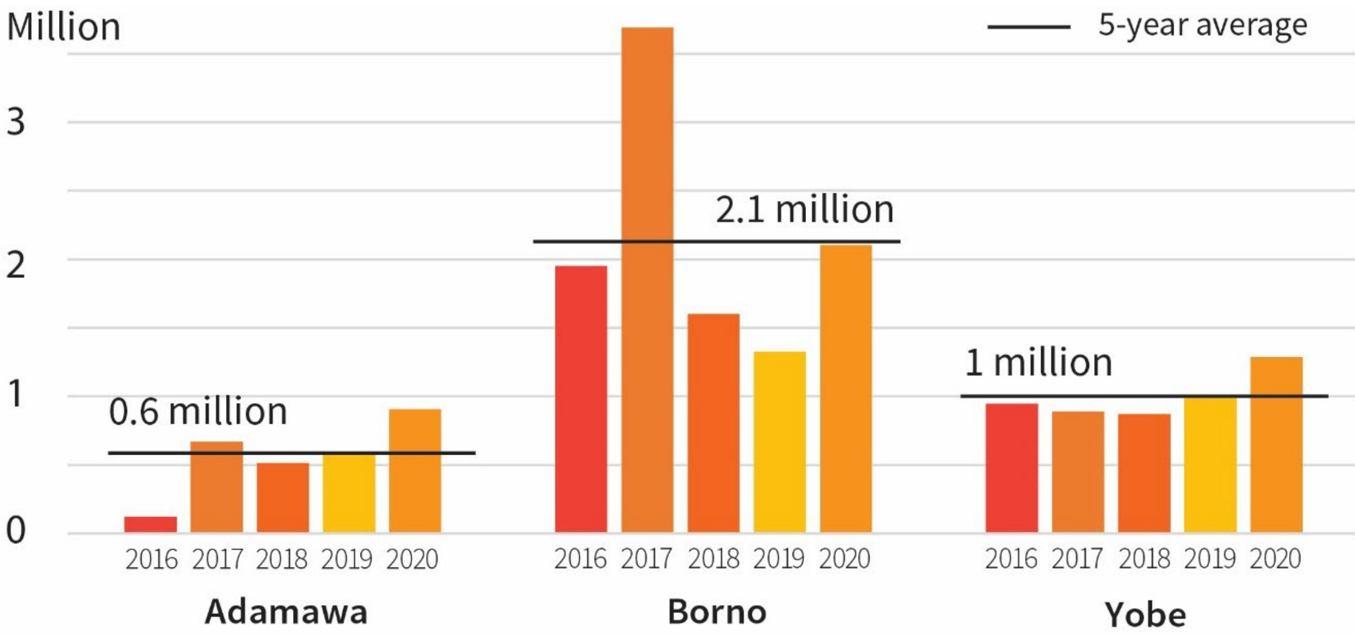
[7] A peak of 456 incidents were recorded in 2015 alone, with an average of 325 incidents per year between 2016 and 2017 (ACLED 2019).

through displacement, and loss of livelihoods and assets – as well as the impact of climatic shocks on household incomes, as the predominant livelihoods in the north are agriculture and animal husbandry. Structural factors, such as low economic density, poor infrastructure and accessibility, and ethnic division have also been cited as contributing factors to these welfare dynamics (Granguillhome *et al*. 2021).

The insurgency has also provoked significant population displacement. By 2016, more than 2 million people had been displaced as a result of the conflict. Most of these remain in Nigeria and live in host communities, either in affected or neighbouring states, or camps for internally displaced people (IDPs) within garrison towns established by the Nigerian military. Among those displaced, more than 800,000 IDPs live in insurgent-controlled areas, which are much harder for humanitarian actors to reach. Some 226,000 displaced people have fled to neighbouring countries including Niger, Cameroon, and Chad (Sabbagh 2018). At the same time, between August 2015 and December 2018, approximately 1.6 million people either returned or moved closer to their homes.[8] However, concerns have been raised over returnees' safety, as well as access to basic services and infrastructure in affected areas (*ibid*.).

North-eastern states have suffered widespread and persistent food insecurity since mid-2012. Initially, the conflict negatively affected crop production, trade, and markets, which resulted in higher food prices than usual. As a result, between June 2012 and June 2013, it was estimated that about 20 per cent of the population in Borno and Yobe faced moderate food insecurity (FEWS NET 2012). However, violence has continued to disrupt food production, reduced income-generating opportunities, and caused widespread displacement, pushing poor and conflict-affected households in these states into crisis levels of food insecurity. By July 2015, areas most affected by the conflict – especially local government areas (LGAs) with high numbers of IDPs – faced emergency conditions, characterised by large consumption gaps and the use of extreme coping strategies. For example, households consumed less food as well as less preferred foods, incurred debt, sold livestock and other assets, or begged (WFP 2022). In June 2016, the Nigerian Ministry of Health declared a 'nutrition emergency' in Borno, with evidence to suggest that famine conditions were likely in areas most affected by the conflict (FEWS NET 2016). Although there was an increase in humanitarian assistance to conflict-affected households from 2017, crisis and emergency food security conditions have remained, with households in inaccessible areas continuing to face famine conditions. As shown in Figure 3.2, more than 3 million people faced severe food insecurity between 2016 and 2020.

Figure 3.2: Number of people facing 'crisis' or worse levels of food insecurity in north-eastern Nigeria (2016–20)



Source: SWAC/OECD (2020). Reproduced under Terms and Conditions.
Note: Food insecurity measures for June–August each year.

[8] Some 750,000 people have returned to Adamawa and 650,000 to Borno.

As a result of this food insecurity, more than a million children are suffering from moderate or severe acute malnutrition across Borno, Adamawa, and Yobe.[9] Evidence suggests that newly displaced households are likely to be more food insecure than others, while more than 50 per cent of children arriving in camps from inaccessible areas are found to be malnourished (Sabbagh 2018).[10]

The conflict has also significantly disrupted provision of and access to basic services. In Borno, less than one-third of health facilities are functional, with malaria and cholera severely affecting the health of the population. The conflict has also destroyed infrastructure in the affected states, including 500,000 homes, 1,200 schools, 800 health facilities, and 1,600 water supply points (OCHA 2018). As a result of the crisis, an estimated 900,000 children have lost access to learning. This is especially severe in IDP camps, where 75 per cent of children do not attend school. In Borno, 70 per cent of primary school-aged girls were out of school in December 2018 (Sabbagh 2018).

Overall, the scale of need for humanitarian assistance in north-eastern Nigeria is great, with appeals for support for 7.1 million people in Borno, Adamawa, and Yobe, and a further 3.1 million people requiring support in neighbouring states including Gombe, Bauchi, and Taraba (OHCA 2018; Sabbagh 2018).

3.2 Herder-farmer conflict

Contests over land between transhumant pastoralists (herders) and farming communities is another serious cause of conflict in Nigeria's North West and North Central zones.[11] Although sporadic violence between pastoralists and farmers has taken place for decades, the two groups have largely co-existed in Nigeria for many years, with tracts of land dedicated to both grazing and farming. However, since 2014 attacks have become more frequent (ICG 2018). Climate change, causing drought and the increasing desertification of Nigeria's northern states, has caused herders and farmers to change their practices. As a result, pastoralists have migrated south in search of pasture and water, with some pastoralists permanently settling in the North Central zone, causing tension between settlers and host communities. In some communities, destruction of crops due to animals grazing on farmlands has provoked violence. At the same time, urbanisation and population growth in farming communities (including due to migration out of the north-eastern states affected by the Boko Haram insurgency – see section 3.1), coupled with the commercialisation of agriculture, has resulted in the expansion of farms into reserves previously gazetted for grazing, thereby obstructing migration routes (Herbert and Husaini 2018; Amnesty International 2018). Furthermore, new laws banning open grazing, enacted across several states in November 2017, contributed to a rapid escalation of violence from 2018 (ICG 2018).[12]

Alongside environmental and economic causes, the conflict has also become politicised along ethnic and religious lines. Most pastoralists are Muslim and from the Fulani ethnic group, whereas farmers tend to be Christian and of other ethnicities. Stereotyping by politicians in the media has served to reinforce anti-Fulani sentiments and in some cases provoked violent outbreaks. Minor disagreements between herders and farmers can quickly lead to misinformation and fake news, provoking further tensions and more violent outbursts (Adigun 2022).

Prior to 2018, the government response to the outbreaks of violence was limited and few perpetrators of violence faced justice (ICG 2017). In the absence of a legal response, petty crime, such as livestock theft or destruction of crops, has triggered retaliatory attacks and broader violence, which has spilled over into neighbouring communities that are ethnically connected with targeted communities (Herbert and Husaini 2018; Amnesty International 2018). However, in response to the escalation of violence the federal

[9] Acute malnutrition among children under five years of age was above emergency thresholds in many parts of the affected states in December 2018 (Sabbagh 2018).

[10] Among new arrivals of children, 34 per cent were suffering from severe acute malnutrition and 55 per cent from moderate acute malnutrition (*ibid.*).

[11] States particularly badly affected include Benue, Kaduna, Katsina, Nassarawa, Plateau, and Taraba, though violent attacks take place across the country.

[12] ACLED show that states in the North West and North Central zones accounted for almost half (49 per cent) of all deaths from conflict, violence, and insecurity between 2018 and 2022, trumping even the share of fatalities in the North East zone (39 per cent), which largely result from the Boko Haram insurgency.

government deployed the police and army, as well as launching two military operations to curb violence in affected states including Benue, Kaduna, Nasarawa, Taraba, Kogi, Adamawa, and Plateau (ICG 2018).

The ongoing conflict has in some years caused more fatalities than the Boko Haram insurgency. Violence is widespread and tends to flare up across states at different times. In 2016 alone, 2,500 people were killed in violent incidents (ICG 2017). With the escalation of violence in 2018, ICG (2018) estimated that at least 300,000 people were displaced between September 2017 and June 2018. Most IDPs took refuge in IDP camps, which were overcrowded and had inadequate access to shelter, sanitation, food, and water.

Affected households have lost assets, face reduced income, and have a greater chance of being food insecure. A direct impact of the conflict is the loss of crops or livestock, which directly impacts livelihoods. Initially, the conflict between herders and farmers was not found to increase food insecurity in affected states (Raleigh 2017). However, more recently, as the violence has escalated, food security has deteriorated. From early 2018, households in affected states faced stressed or crisis conditions (FEWS NET 2018).[13] Nnaji *et al.* (2022) find that incidents of conflict between pastoralists and farmers have an impact on food insecurity, with the severity of the conflict influencing the size of the effect. The incidence of violence tends to increase the number of days households eat reduced varieties of food, while more severe instances of violence increase the number of months households face insufficient food supply. Children also suffer as a result of the conflict, with an estimated 300,000 children out of school in Benue alone (ICG 2018).

3.3 Social assistance response to violence

Nigeria is a decentralised state with a three-tiered government structure comprising federal, state, and local governments. While the federal government is responsible for designing policy, subnational governments have autonomy to interpret, allocate funding to, and implement policies. Given the variation in size, capacity and resources of each state and LGA, the degree to which social protection programmes are implemented varies considerably (Holmes 2011).[14] Moreover, the impact of existing social protection programmes is either minimal or unknown (Ochogwu 2024).

The 2016 National Social Protection Policy is explicitly aligned with the United Nations Social Protection Floor and aims to ensure a universal minimum package of support (MoBP 2016). In practice, however, social assistance in Nigeria is limited by low levels of expenditure and programme coverage. A range of programmes have been implemented across states, including conditional and unconditional cash transfers, public works programmes, and school feeding programmes, but spending and coverage are low. In 2016, only 0.3 per cent of GDP was spent on safety net programmes; in 2018, safety nets covered 17 per cent of households, of which less than 1 per cent received cash transfers (World Bank 2021). By 2020 (the most recent year for which we could find data), total spending on social protection (excluding health) had risen to 0.7 per cent of GDP, around a third of average spending across sub-Saharan Africa (2.1 per cent) and closer to a quarter of spending among lower-middle-income countries (2.5 per cent) (ILO 2021).[15] One key intervention is the National Social Safety Net Project, implemented by the Government of Nigeria with World Bank financing. The project seeks to establish the foundations for a national safety net system, while implementing a national cash transfer programme.

[13] The intensity of herder-farmer conflict varies over time in affected states; as a result, the food security situation in affected states fluctuates. However, populations in the following states faced stressed food security conditions between January 2018 and December 2019: Kebbi, Sokoto, Zamfara, Katsina, Kano, Jigawa, Bauchi, Plateau, Nasarawa, Benue, and Taraba.

[14] See also Ochogwu (2024: 23–24): 'Nigeria's federal structure allows for substantial variation in social programs across sub-national entities, encouraging state governments to customize initiatives to align with local nuances and populations.'

[15] Similarly, coverage by at least one social protection benefit (excluding health) in Nigeria was estimated at 11 per cent of the total population, compared to 13.7 per cent across all of sub-Saharan Africa, and 24.9 per cent across all lower-middle-income countries. Average spending on social protection is lower in Nigeria even than in low-income countries (0.7 per cent vs 1.1 per cent, respectively), as is coverage (11.0 per cent vs 13.4 per cent, respectively) (ILO 2021).

A social registry has been developed to form part of these foundations. The National Social Register (NSR) brings together state-specific registries as well as data from beneficiaries of the national cash transfer programme. In September 2021, the NSR contained data on 10.1 million households (comprising 42.7 million individuals) across almost all LGAs (World Bank 2021).[16] The NSR combines geographic targeting, using poverty data to identify vulnerable LGAs, with community-based targeting (CBT) and verification using proxy means tests (PMTs) to identify poor and vulnerable households (Sterk and Issaka 2019). However, harmonisation across constituent registers is a challenge as people use different names to enrol across registers and humanitarian organisations do not always use national registers during responses, instead supplementing the registers after the fact (Mohamed *et al*. 2021).

Box 3.1: The NSR and its sub-components

The NSR has two sub-components, developed since 2020:

- The Rapid Response Register was developed in response to the Covid-19 pandemic and contains details of 6.8 million people residing in urban areas. Satellite imagery was used to identify vulnerable urban areas or LGAs where potential beneficiaries lived, with SMS text message 'blasts' used to solicit registration.
- The Unified Registry of Beneficiaries brings together existing data on more than 1 million IDPs and vulnerable groups across humanitarian programmes. The registry uses host community-based identification to target eligible households. It was compiled by combining and harmonising existing registers in the north-eastern states held by donors, international non-governmental organisations, and government departments and agencies. Data is validated by visiting communities and speaking to village and community heads.

Source: Authors' own.

The social assistance response to violence in Nigeria is primarily focused on the Boko Haram insurgency. The response in the north-east has evolved over time in terms of its scale and reach. Humanitarian operations were limited prior to 2016, but have rapidly scaled up since then. As of the end of 2019, there were over 80 local and international organisations and an estimated 4,000 aid workers in the region (Stoddard *et al*. 2020). In collaboration with the government, these organisations provided emergency food assistance to those affected by the crisis, as well as shelter and non-food items to displaced populations (items included tents, blankets, and hygiene kits). Organisations such as the United Nations Children's Fund and the International Organization for Migration provided support in the form of educational materials and services for children in conflict-affected areas, and programmes aimed at building the resilience of affected communities through livelihood support such as skills training, agricultural assistance, and cash-for-work initiatives (Ochogwu 2024).

Beyond immediate relief, efforts in the region subsequently evolved to focus on longer-term recovery and development. They included rehabilitating infrastructure, rebuilding communities, and reintegrating displaced people into society. The Presidential Initiative in the Northeast and the Northeast Development Commission are two such initiatives intended to foster rebuilding and recovery. The Presidential Initiative in the Northeast was established in 2016, designed to coordinate rehabilitation and reconstruction efforts in the northeast, focusing on critical sectors such as infrastructure, education, healthcare, and agriculture. The Northeast Development Commission was established in 2017 in response to the north-east's dire humanitarian and developmental needs. The commission operates as a statutory body with the mandate to oversee regional coordination and implementation of sustainable development projects. Its main goals are to promote economic growth, enhance infrastructure, and improve living conditions (*ibid*.).

Despite these efforts, humanitarian access to parts of the north-eastern states remains constrained, with more than 800,000 people who require humanitarian support living in areas outside of government control. These populations are very difficult to reach with social assistance due to insecurity and actors' requirements not to inadvertently benefit insurgents through humanitarian operations (Stoddard *et al*. 2020; Sabbagh 2018).

[16] By 2021, the NSR covered all states in Nigeria and contained data on 20 per cent of the population (31 per cent in rural areas, 10 per cent in urban areas), with greater coverage in areas vulnerable to climatic shocks. Data from Borno state was only incorporated after 2019 (World Bank 2021).

In the states of the North West and North Central zones that are highly affected by the herder-farmer conflict, responses tend to be limited to providing support to IDPs residing in formal camps, including periodic provision of food by state governments or humanitarian actors.

In the current context, social assistance is largely delivered by humanitarian actors. The 2019–21 Humanitarian Response Strategy (Box 3.2) required US$848m, with 70 per cent of the response delivered by UN agencies and a further 27 per cent delivered by international non-governmental organisations (NGOs). This is because the scale of need and complexity of delivering assistance are greater than the government's response capacity. Many actors are delivering assistance to those affected by conflict, with over 50 humanitarian cash transfer programmes being implemented in Borno state alone (Sterk and Issaka 2019). These programmes are coordinated by a national emergency management agency, as well as federal-, state-, and local-level cash working groups. There have been efforts to integrate and coordinate humanitarian assistance with social protection programmes through these groups at federal and state levels. However, coordination between and among UN agencies, NGOs, and the government is a challenge (Stoddard *et al*. 2020).

Box 3.2: Humanitarian Response Strategy 2019–21

The Humanitarian Response Strategy 2019–21, developed by the UN and partners in support of the Government of Nigeria, is a multi-year strategy designed to respond to the needs of the most vulnerable people, including IDPs, returnees, and host communities in Borno, Adamawa, and Yobe states. The strategy articulates a collective vision for humanitarian action and represents the first time that humanitarian actors in Nigeria have adopted a multi-year approach. It aims to enhance coherence between programmes and to foster synergies between government, development, and humanitarian responses to jointly deliver basic services to those affected by crises. The strategy covers responses related to food security, protection, nutrition, and access to education and other basic services, with the aim of reaching 6.2 million people (or 87 per cent of the population estimated to need support).

Source: Sabbagh (2018).

There is much variation in terms of targeting across social assistance and humanitarian programming. Targeting approaches include using existing data (from the NSR or the Unified Registry of Beneficiaries (URB)), CBT approaches, participatory assessments of poverty, vulnerability ranking, and formula-based approaches (Sterk and Issaka 2019). An overview of selected social assistance and humanitarian responses to the crises is presented by Table A.1.

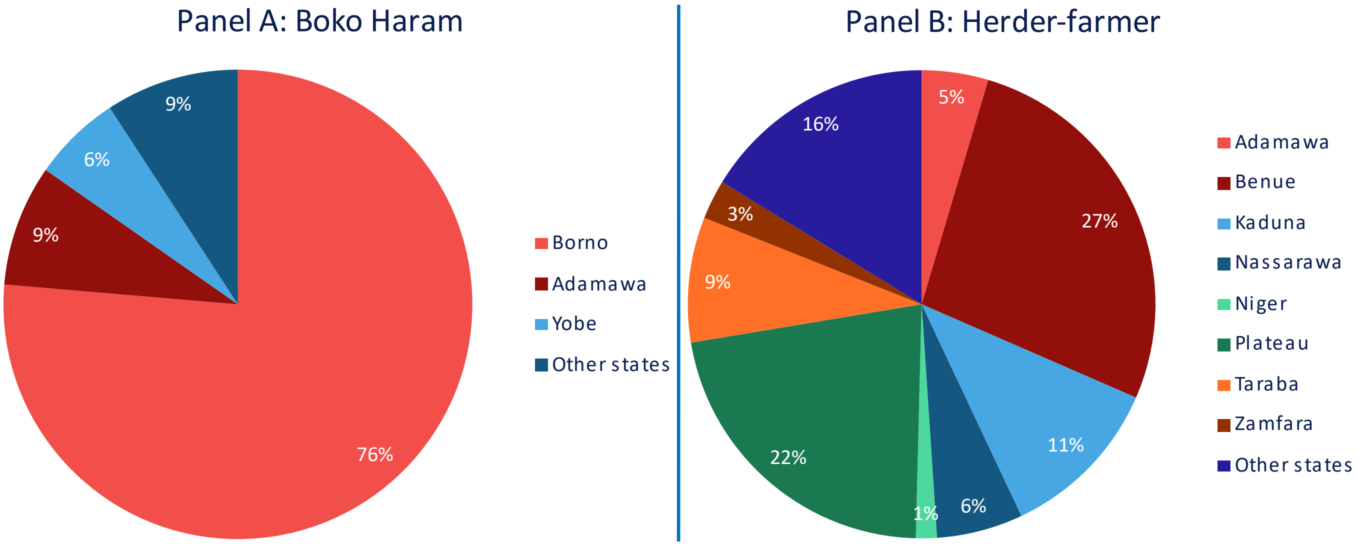
4. Affected populations and welfare trends

4.1 Affected populations

According to the literature discussed in section 3, the vast majority of fatal incidents of conflict, violence, and insecurity are concentrated in the north of the country, with over half (52 per cent) occurring in the North East, 21 per cent in the North West, and 16 per cent in the North Central zones. The three southern zones together account for just 11 per cent.

Furthermore, a few states account for significant shares of the violence. In relation to the Boko Haram insurgency, Borno, Adamawa, and Yobe account for 91 per cent of all fatal incidents associated with the conflict between 2010 and 2019 (Figure 4.1, Panel A). In relation to the herder-farmer conflict, Adamawa, Benue, Kaduna, Nassarawa, Niger, Plateau, Taraba, and Zamfara account for 84 per cent of fatal incidents in that period (Figure 4.1, Panel B).

Figure 4.1: Share of fatalities associated with Boko Haram and herder-farmer conflicts (2010–19), by selected states



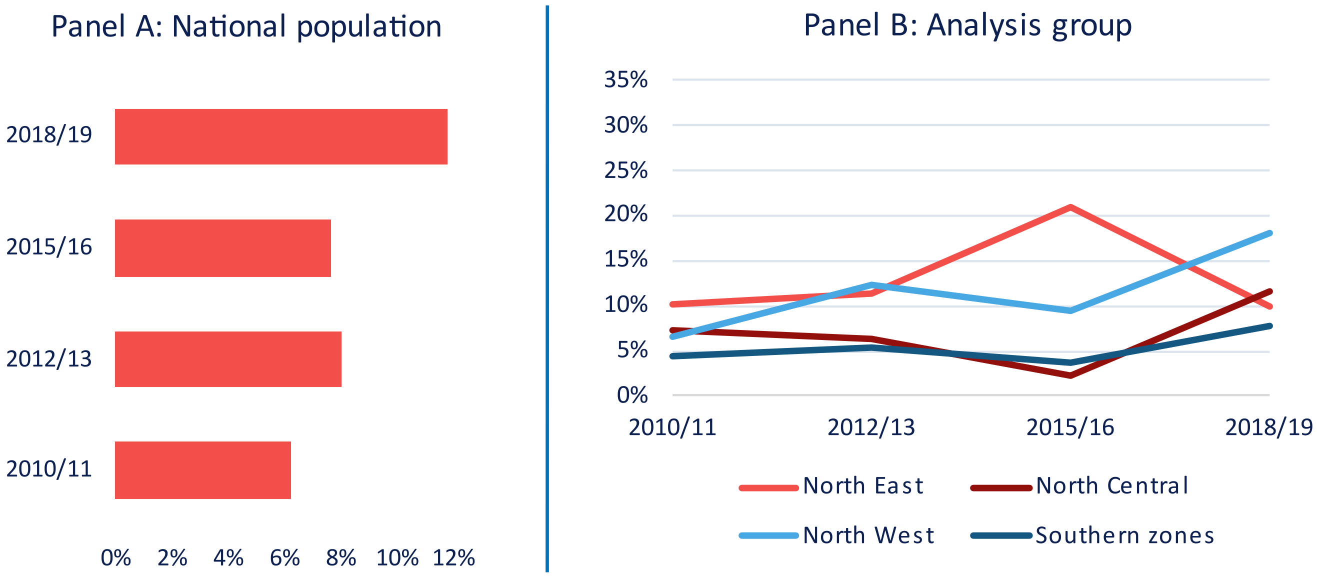
Source: Authors' own. Created using data from ACLED (2019).

Nevertheless, as the GHS is not representative at state level, and because both the incidence and impacts of violence associated with Boko Haram and the herder-farmer conflict extend across zones, to consider how violence affects populations we use as our primary mechanism of analysis four groups defined according to administrative zone. These are: the North East, North Central, and North West zones; and the southern zones taken as a whole (see section 2.1). These groups are compared across a number of different indicators of welfare and other characteristics of wellbeing to look at trends over time.

In addition, while the incidence of violence associated with the Boko Haram and herder-farmer conflicts is high in the period covered by this study, and the indirect effect of this kind of violence and insecurity profound across multiple dimensions of wellbeing, from livelihoods to social relations to physical and mental health, not every household is directly affected by death or other impacts of violent events. As the GHS contains data on the different kinds of shocks that households report experiencing, we construct an indicator of whether households report being 'directly' affected by violence across each survey wave. We can thereby classify the population into two secondary analysis groups: those 'directly' affected by violence, and those 'indirectly' affected (i.e. everyone else). All those reporting that they experienced a violent shock, violent event, or violent death in the given recall periods preceding the survey round are classified as directly affected by violence. Details on how the secondary analysis groups are constructed are provided in section 2.1.2.

Using this indicator, we see that around 8 per cent of the population across all four survey rounds report being directly affected by violence. This rate is highest in 2018/19 (12 per cent) and lowest in 2010/11 (6 per cent); in 2012/13 and 2015/16, around 8 per cent of the population report being directly affected by violence (Figure 4.2, Panel A).

Figure 4.2: Share of population directly affected by violence, by survey wave and analysis group



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

It should be noted that the experience of being directly affected by violence in waves 3 and 4 is likely to be significantly under-reported in relation to previous waves, both due to the restricted information gathered on this topic in wave 4 (see section 2.1.2), and due to insecure parts of the country being excluded from the sample frame for both waves 3 and 4 (see section 2). This is especially the case in wave 4, and for households located in the North East, but also likely affects households in zones highly affected by the herder-farmer conflict.

Despite this caveat, when we look at the prevalence of being directly affected by violence across our primary analysis groups (Figure 4.2, Panel B), we see that it is generally highest in the North East and North West zones (13 per cent and 12 per cent, respectively, across all waves, bearing in mind that the figures for the North East are likely to be underestimates for wave 3 and wave 4, in particular), compared to the North Central and southern zones (7 per cent and 5 per cent, respectively, across all waves).

In what follows, we examine welfare trends and other pertinent characteristics of wellbeing among both primary and secondary analysis groups.

4.2 Welfare trends

To address the question of how conflict, violence, and insecurity impact our population groups of interest, we consider trends across different dimensions of welfare, as well as other pertinent characteristics such as the type and prevalence of shocks households face, and coping strategies households deploy to mitigate the negative impacts of shocks. We also consider households' access to social assistance.

To look at the welfare dimension, we consider three different measures comprising consumption expenditure, food security, and multidimensional poverty. These measures are selected on the basis that they cover three dimensions of express interest to social assistance policy, be they development focused or part of the humanitarian/emergency response to crises. The consumption-based measure of monetary welfare identifies groups of primary interest for routine social protection, while food insecurity represents a measure of immediate need relevant to emergency response. Meanwhile, the MPI provides a composite measure of various deprivations other than monetary poverty, taking into consideration human capital, through the domains of education and health (in this case, proxied by nutrition by two measures of food security), as well as living standards via quality of housing and access to the essential amenities of water and sanitation. Experience of shocks and use of coping strategies, plus receipt of social assistance, are analysed as these can be key drivers of welfare.

To provide context before examining the trends in these indicators for our analysis groups, we first consider the welfare dynamics over the period covered at national level.

4.2.1 National poverty dynamics

According to Nigeria's national statistics, poverty trends remained basically static in the decade between 2010 and 2019. With population growth, this implies that the absolute number of poor people rose during that period (World Bank 2022a).[17]

The poverty rate in 2019, as measured in the NLSS using the national poverty line of US$1.93 per person per day, was 40 per cent. This is just higher than the rate measured using the international poverty line of US$1.90 per person per day, which stood at 39 per cent. Comparing this rate to the US$1.90 per person per day international poverty line measure imputed into the GHS indicates that poverty reduced by less than two percentage points over the ten-year period, from 43.5 per cent in 2010/11 to 41.9 per cent in 2018/19.

The observed trends thus show that poverty declined slightly between 2010 and 2015, but then rose following the recession of 2016. The observed dynamic is largely driven by the non-poor part of the welfare distribution, which more closely aligns to macro-economic trends. The data also shows various important disparities in terms of the welfare situation across different population groups, which are worth mentioning given our focus on targeting of social assistance policy in section 5.

In geographic terms, in 2019 both the poverty rate and the depth and severity of poverty are higher in rural areas compared to urban areas.[18] Similarly, poverty across the northern part of the country is much higher than across the south (58 per cent vs 20 per cent).

Poverty is also unevenly distributed across age groups, with 48 per cent of children aged under 15 years classified as being poor, compared to 35 per cent of working-age adults (aged 15–64) and 27 per cent of older people (aged 65 or above).

There is no difference between poverty rates among men and women in aggregate, but this masks important disparities at different stages of the life cycle. Women of peak reproductive age (20–44 years) are more likely to be poor than men in the same age group, suggesting gender norms around childcare and other household responsibilities (among other things) may significantly constrain women's economic opportunities. Equally, divorced and widowed women are more likely to be poor than divorced and widowed men.

Education levels also affect poverty status, with 58 per cent of adults aged 16 years and over without education living in poor households, compared with just 10 per cent of those with tertiary education.

Finally, poverty is heavily determined by sector of work. Some 57 per cent of Nigerians who live in a household where the head engages primarily in agriculture are poor, compared to 24 per cent of those in a household where the head engages primarily in wage work, and 32 per cent of those in a household where the head is engaged primarily in non-farm enterprise work.

Poverty rates for states heavily affected by the Boko Haram insurgency and herder-farmer conflict are given in Table 4.1. It shows that many of these states tend to be among the poorest in the country.

The GHS data we use to analyse welfare in this study does not provide a comparable consumption aggregate to that which underpins the national poverty estimate (see section 2.2). Nevertheless, it does provide a crucial source of data on welfare levels for the population in the period covered by the four survey waves, as well as useful insight into the welfare distribution. What this data shows is that, not only has the rate of poverty stayed largely unchanged over the decade between 2010 and 2019, but so has the shape of the welfare distribution. The GHS shows that, across waves, Nigeria is quite an unequal society, with a large proportion of the population consuming relatively little, alongside a very small proportion consuming much higher amounts (Figure A.1).[19]

[17] See section 2.2 for a detailed discussion of how poverty is measured in Nigeria.

[18] The rural poverty headcount rate is 52 per cent compared to 18 per cent in urban areas; rural depth of poverty is 17.4 per cent, compared with 4.5 per cent in urban areas; rural severity of poverty is 7.8 per cent, compared to 1.7 per cent in urban areas (World Bank 2022a).

[19] This data no doubt under-represents the upper echelons of the welfare distribution, which would further skew the distribution at the top end.

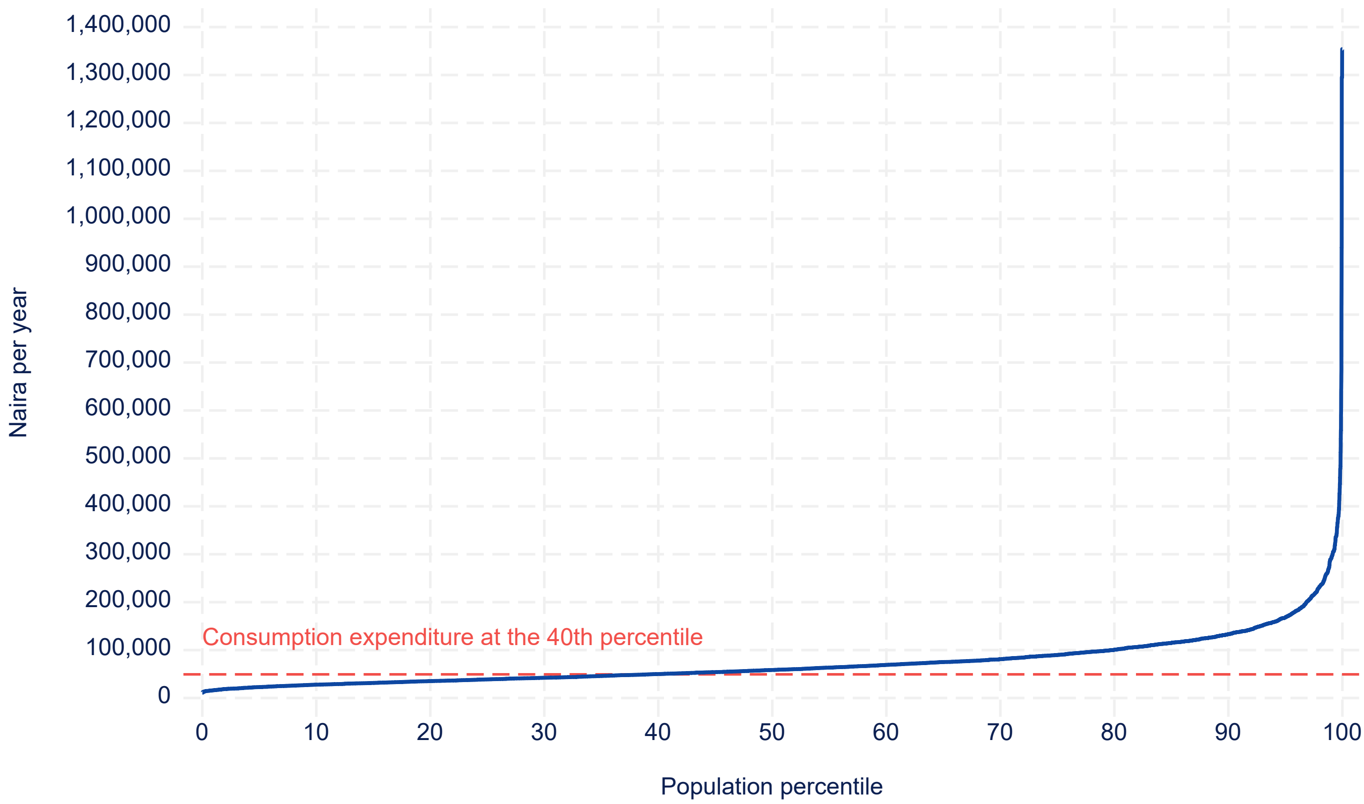
Table 4.1: Poverty rates in selected states

Analysis group	State	Poverty rate (%)	Depth of poverty	Severity of poverty
States heavily affected by the Boko Haram insurgency*	Adamawa	75.4	0.276	0.132
	Yobe	72.3	0.265	0.128
States heavily affected by the herder-farmer conflict	Benue	32.9	0.084	0.031
	Kaduna	43.5	0.155	0.067
	Nasawara	57.3	0.169	0.066
	Niger	66.1	0.217	0.091
	Plateau	55.0	0.178	0.076
	Taraba	87.7	0.424	0.244
	Zamfara	74.0	0.250	0.104
National	N/A	40.1	0.129	0.056

Source: Authors' own. Created using data from World Bank (2022).
*Note: * Statistics for Borno are not reported by the 2018/19 NLSS as some parts of that state were inaccessible when the data was collected. Only 530 households were reached, corresponding to 15 out of the 27 LGAs that were originally sampled (World Bank 2022).*

Furthermore, looking at the most recent data alone (wave 4) clearly shows that some four-fifths of the population are very close to the low-welfare line used in this analysis to denote the bottom two national welfare quintiles (Figure 4.3).

Figure 4.3: Per capita consumption expenditure distribution in wave 4 (2018/19)



Source: Authors' own. Created using data from the Nigeria General Household Survey 2018/19 (NBS 2023).

Similarly, looking at populations across administrative zones, we find that the only real change between wave 1 and wave 4 is that the North East zone drops down the overall welfare distribution to become the poorest in the country, almost certainly as a result of the high levels of violence and insecurity suffered in that zone since the start of the 2010s (see Figure A.2 and Figure A.3).[20] A similar lack of change affects the shape of the consumption distribution when looked at across urban and rural areas (see Figure A.4).

Given these dynamics, it is unsurprising to find that poverty was projected to rise significantly by up to 2.3 percentage points following the Covid-19 pandemic (World Bank 2022), even before taking into account the current cost of living crisis, which is very likely to exacerbate that predicted trend.

As poverty has been shown to have a direct relationship to violence (see Diwakar and Brzezinska 2023), it is thus also unsurprising that we see fatal incidents of violence rising rapidly again after 2019 to near peak levels seen previously in 2014–15 (Figure 3.1). Increased levels of violence will in turn likely put further pressure on welfare trends.

4.2.2 Welfare trends among analysis groups

As discussed above, for this study we are concerned with considering the impacts of two major conflicts and sources of violence and insecurity in Nigeria to try to understand who is affected and how. We thus break down the GHS sample across waves into various different analysis groups to compare trends between them. These analysis groups are constructed based on the zone in which populations reside and comprise the North East, the north central, and the North West zones, alongside the three southern zones combined into a single group. Additionally, we also divide the total population across survey waves between those directly and indirectly affected by violence, to consider whether this difference is a strong determinant of welfare trends or not (see section 4.1).

Consumption expenditure

To look at welfare dynamics using a measure based on consumption expenditure, we consider all those households falling into the bottom two national consumption quintiles (i.e. the bottom 40 per cent of the distribution) as having low welfare relative to the rest of the distribution. We are thus able to look at the low-welfare headcount rate, as well as the 'welfare gap' (otherwise known as 'depth of poverty' – see section 2.2), for each of our analysis groups (Figure 4.4).

What we find looking at this data is that trends vary across our different analysis groups.[21]

In the North East zone, we see that the proportion of people falling into the bottom two national consumption quintiles rises markedly over time, from 46 per cent in wave 1 to 74 per cent in wave 4.[22] At the same time, the welfare gap for this group more than doubles over the same period, rising from 12 per cent in wave 1 to 25 per cent in wave 4,[23] indicating that not only are more people suffering low welfare, but they are falling deeper into poverty as well.

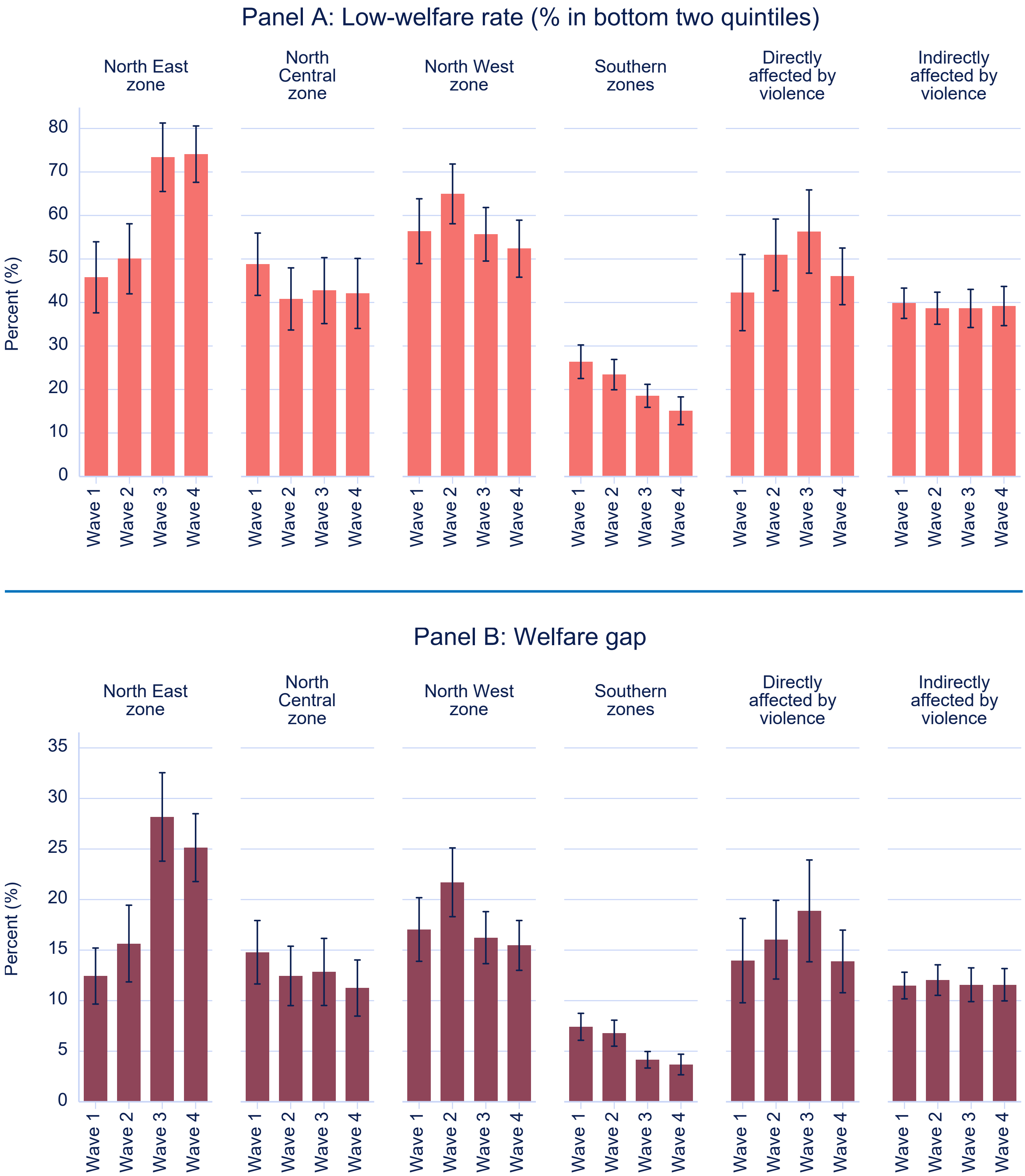
[20] Indeed, welfare levels in the North East zone are likely to be overestimated given constraints on the GHS 2018/19 sample frame (see section 2).

[21] In the analysis presented below from Figure 4.4 to Figure 4.6, the error bars presented in the graphs show confidence intervals at the 95 per cent confidence level for each point estimate. If error bars overlap (e.g. as is the case for wave 1 and wave 2 estimates for the North East zone analysis group in Figure 4.4), this indicates that any change in the point estimates is not statistically significant at the 95 per cent confidence level. Where the bars do not overlap (e.g. between the wave 1 estimate and the wave 4 estimate for the North East zone analysis group in Figure 4.4, it means that the observed trend in point estimates is statistically significant at the 95 per cent confidence level. The observed trends given by the point estimates thus give a good indication of the actual trends, though not all of these are statistically significant at the 95 per cent confidence level. Footnotes have been added to the main text to specify explicitly whether observed trends are statistically significant at the 95 per cent level or not.

[22] Statistically significant at the 95 per cent confidence level.

[23] Statistically significant at the 95 per cent confidence level.

Figure 4.4: Low-welfare rate and welfare gap* for analysis groups, by survey wave



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
*Note: * The 'welfare gap' is defined as the average distance below a given welfare threshold (in this case the consumption expenditure level at the 40th percentile nationally) across all households falling below this line. Error bars show 95 per cent confidence intervals for point estimates.*

Meanwhile, among the population in the North West zone, we find the proportion falling into the bottom two national consumption quintiles initially rises between wave 1 and wave 2, from 56 per cent to 65 per cent, respectively, before falling again to 52 per cent in wave 4.[24] This same basic trend is then repeated in relation to the welfare gap for this group, which climbs from 17 per cent to 22 per cent between wave 1 and wave 2, before subsiding to 15 per cent in wave 4, just below its starting level.[25]

For the North Central zone, on the other hand, the proportion in the bottom two quintiles drops from 49 per cent in wave 1 to 41 per cent in wave 2, and thereafter remains fairly constant (finishing at 42 per cent in wave 4). At the same time, the welfare gap for the North Central zone drops from 15 per cent in wave 1 to 11 per cent in wave 4, suggesting a general shallowing of poverty among this group over the entire period.[26]

For the southern zones, both the proportion of the population falling into the bottom two quintiles and the welfare gap among low-welfare households declines over the period.[27]

Comparing those directly affected by violence to those indirectly affected, we find the proportion in the bottom two national quintiles appears to rise among the former group (from 42 per cent in wave 1 to 46 per cent in wave 4, peaking at 56 per cent in wave 3), but remains basically static among the latter group (Figure 4.4, Panel A). Similar trends for these two groups are observed in relation to the welfare gap (Figure 4.4, Panel B).[28]

Food insecurity

How do these welfare dynamics compare to trends in food security? To look at this we consider two main measures of food security, one which looks at the immediate food security situation (whether a household reports eating less food, or less healthy/non-preferred food, in the past seven days during the post-planting season),[29] and one which considers a more general food security situation (whether a household reports having insufficient food to feed its members at any point in the 12 months prior to the post-planting season). Figure 4.5 presents the trends for both of these measures across our various analysis groups.

Again, the GHS data presents a somewhat varied picture regarding food insecurity across the analysis groups. In terms of immediate food insecurity (Figure 4.5, Panel A: household reports eating less, or less healthy/non-preferred, food in the past seven days), food insecurity is reported as much worse in wave 4 than in wave 1 for all analysis groups, though the trend between those years differs between groups.

In the North East zone, we find steeply rising levels of immediate food insecurity, from 49 per cent in wave 1 to 73 per cent in wave 4, although in wave 2 immediate food insecurity actually dropped to 36 per cent, before rising in wave 3 to 59 per cent.[30] In the North Central zone, meanwhile, immediate food insecurity declined between wave 1 and wave 3 (falling from 45 per cent to 36 per cent, respectively), before climbing

[24] These differences are not statistically significant at the 95 per cent confidence level (the error bars in the graph indicate that the range of the possible point estimates overlap), so while the point estimates indicate a certain degree of fluctuation, statistically we observe no change in the welfare status over the period.

[25] Here, the difference between the welfare gap in wave 2 and in wave 4 is statistically significant at the 95 per cent confidence level, indicating a genuine reduction in the welfare gap for this group between 2012/13 and 2018/19.

[26] Neither of these trends is statistically significant at the 95 per cent level, meaning that, as far as we can be sure, welfare levels have in effect remained flat over the period.

[27] The proportion falling into the bottom two quintiles falls from 26 per cent in wave 1 to 15 per cent in wave 4, while the welfare gap falls from 7 per cent to 4 per cent in the same period (these trends being statistically significant at the 95 per cent confidence level).

[28] The welfare gap rises markedly between wave 1 and wave 3 for those directly affected by violence, from 14 per cent to 19 per cent, before falling back to its original level (14 per cent) in wave 4; for those indirectly affected by violence, the welfare gap remains basically constant at around 11–12 per cent across all survey waves. (The group of those directly affected by violence is relatively small compared to other analysis groups, reflected in larger confidence intervals for this group, and the observed trend is not statistically significant at the 95 per cent confidence level, so we cannot tell categorically if the point estimates reflect true changes in welfare status across rounds or whether welfare remained basically static for this group, although the point estimates indicate reduced welfare levels in waves 2 and 3.)

[29] The recall period for this indicator is 30 days in wave 4. See section 2.2.2 for detail on how the indicator is defined.

[30] The trend between wave 1 and wave 4 is statistically significant at the 95 per cent confidence level.

back up above its starting point to 54 per cent in wave 4.[31] In the North West zone, however, immediate food security remained relatively low at 33 per cent and 37 per cent in wave 1 and wave 2, respectively, before rising more steeply in the subsequent survey rounds to 45 per cent in wave 3 and 62 per cent in wave 4.[32] In the southern zones, despite higher levels of consumption expenditure relative to the other analysis groups, we find the highest rates of immediate food insecurity, starting at 64 per cent in wave 1, remaining basically static over wave 2 and wave 3, before climbing to 78 per cent in wave 4.[33]

Figure 4.5: Food insecurity among analysis groups, by survey wave

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
Note: Error bars show 95 per cent confidence intervals for point estimates.

[31] The trend between wave 2 and wave 4 is statistically significant at the 95 per cent confidence level.
[32] The trend is statistically significant at the 95 per cent confidence level across the whole period.
[33] This change is statistically significant at the 95 per cent confidence level.

Finally, comparing those who report being directly affected by violence to those who are indirectly affected, we see both groups showing rising rates of immediate food insecurity across the entire period, starting and ending at similar levels. However, the proportion of the directly affected group who are immediately food insecure remains basically static in wave 1 and wave 2, then climbs sharply in wave 3 and again marginally in wave 4, while the indirectly affected group remains fairly static for the first three waves, before rising sharply in wave 4 (Figure 4.5, Panel A).[34]

In relation to the more general or longer-term measure of food insecurity across the year (household reports having insufficient food to feed its members at any points in the past 12 months, Figure 4.5, Panel B), we again see quite different trends across groups in waves 1–3, but then a marked jump for all analysis groups in wave 4.[35] This jump likely reflects the price shocks that started to bite across the population from 2015/16 onwards (see section 4.3).

The fact that the southern zones show the highest rates of food insecurity across both measures, despite having generally much higher levels of welfare compared to the other analysis groups (see Figure 4.4), may reflect the higher share of the population residing in urban areas in the south compared to the north, indicating that food security could be a particular concern in urban areas.[36]

Multidimensional poverty

Finally, we look at a measure of multidimensional poverty,[37] which shows generally rising trends for all analysis groups between wave 1 and wave 4, but with apparently differing patterns in intervening years. The North East zone presents the highest rates of multidimensional poverty by the final round of the survey in 2018/19 (at 83 per cent), followed by the North West and southern zones (76 per cent and 78 per cent, respectively), while the North Central zone is the least worse off (54 per cent) and also shows the least change over the ten-year period (Figure 4.6, Panel A).[38]

When we look at the MPI itself (as opposed to the headcount rate of multidimensional poverty), we see that the North East and North West zones show the highest levels of change in multidimensional poverty scores across all survey waves, climbing from an average MPI score of 0.42 in wave 1 to 0.48 in wave 4 in the case of the North East zone analysis group, and from 0.40 to 0.47 in the case of the North West zone analysis group.[39] However, the trajectories in the intervening years differ for each group. In the North East, a fall in the MPI score in wave 2 is followed by a steady climb in wave 3 and wave 4, whereas for the North West a marginal decline in the MPI score between wave 1 and wave 3 is followed by a sharp rise in wave 4. Meanwhile, MPI scores are generally lower in the North Central zone, rising marginally over time (from 0.34 in wave 1 to 0.37 in wave 4);[40] whereas in the southern zones, the average MPI score hovers around 0.40–0.41 across waves 1–3, before climbing sharply to 0.45 in wave 4.[41] Among the group of people directly affected by violence, we see a steady climb in score across all years, starting from the highest base of all groups at 0.43 in wave 1, rising to 0.46 in wave 4.[42] Meanwhile, those indirectly affected by violence follow a similar trajectory to the southern zone analysis group, albeit starting from a marginally lower base (0.39).[43]

[34] The trend is statistically significant for the group of people directly affected by violence between waves two and four, and for the whole period for the group of those indirectly affected by violence.

[35] The trend between waves 2 and 4 is statistically significant at the 95 per cent confidence level for all groups except the North Central zone and those directly affected by violence.

[36] Some 51 per cent of the population are based in urban areas in the southern zones across all survey waves, compared to just 22 per cent of the population in the northern zones across all survey waves. See also footnote 47 below.

[37] See section 2.2.3 above for how are measure of multidimensional poverty is constructed.

[38] Observed trends between wave 1 and wave 4 are statistically significant at the 95 per cent confidence level for the North East and southern zone analysis groups, but not for the North Central and North West zone analysis groups.

[39] Both results statistically significant at the 95 per cent confidence level.

[40] Albeit the observed change is not statistically significant at the 95 per cent confidence level.

[41] Statistically significant at the 95 per cent confidence level.

[42] Observed change not statistically significant at the 95 per cent confidence level.

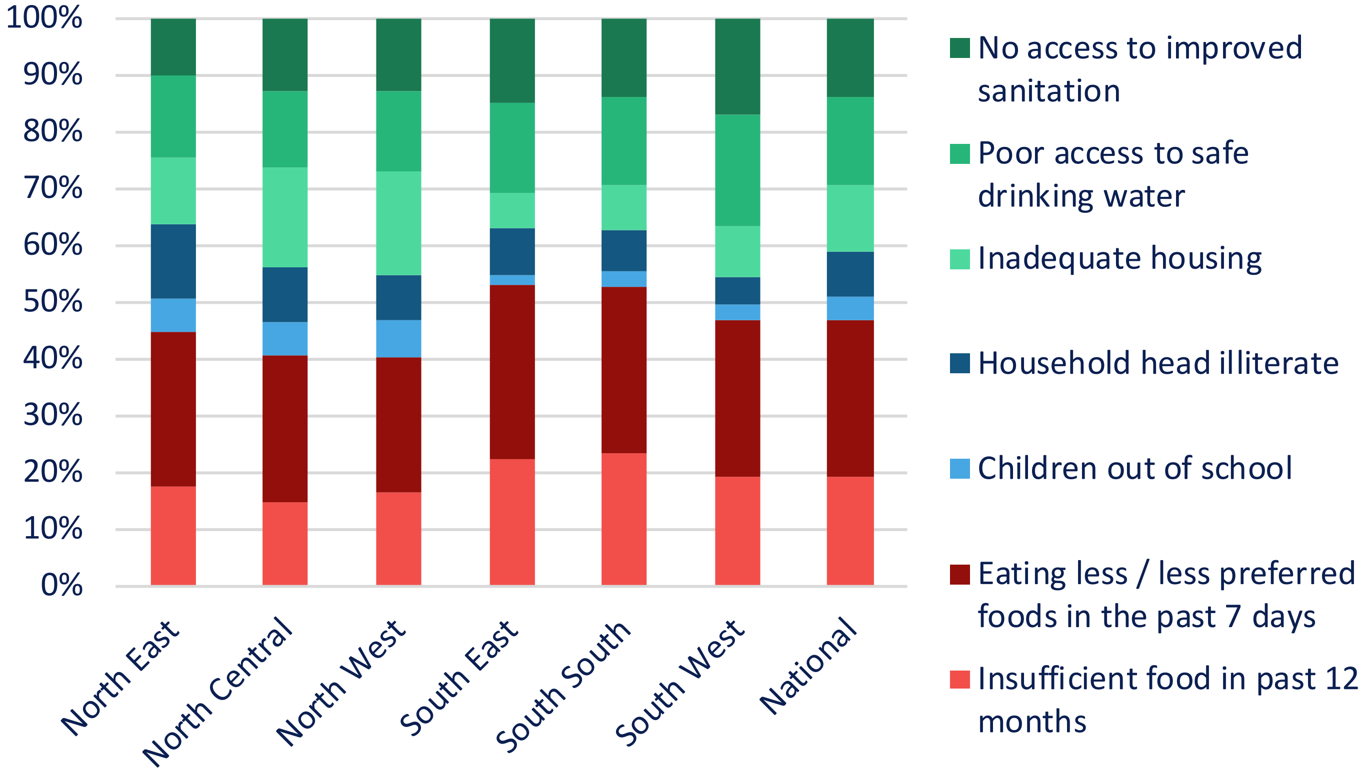
[43] The change between waves 1–3 and wave 4 is statistically significant at the 95 per cent confidence level.

Figure 4.6: Multidimensional poverty among analysis groups, by survey wave

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
Note: Error bars show 95 per cent confidence intervals for point estimates.

What components of the MPI are driving these trends for each group? In the southern zones, food security (health domain) and second housing (living standards domain) play the strongest roles in determining the MPI, with education contributing relatively little to overall scores; whereas in the northern zones living standards and food security play the predominant roles in determining multidimensional poverty, but with education also counting for a more significant share relative to southern zones (see Figure 4.7).

Figure 4.7: Contribution to MPI by domain and indicator in wave 4, by zone

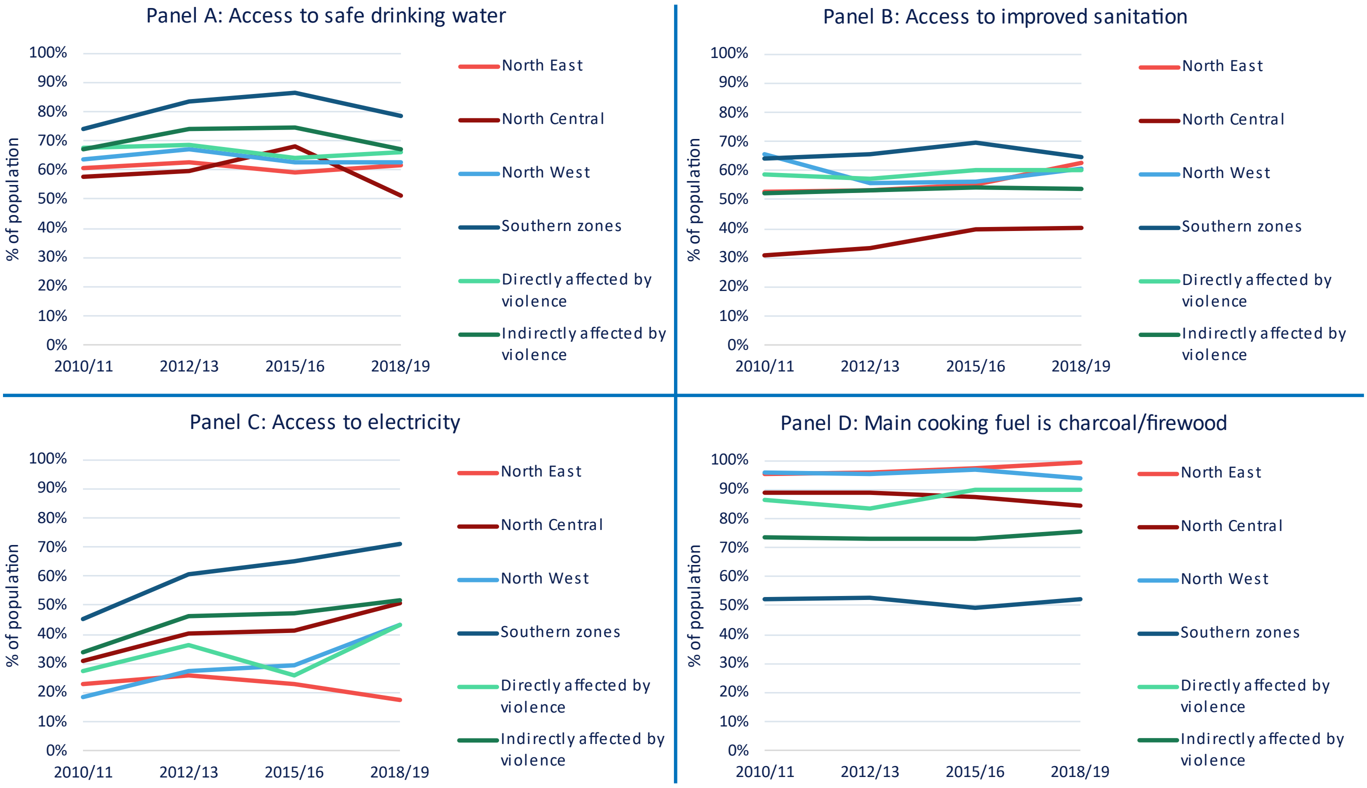


Source: Authors' own. Created using data from the Nigeria General Household Survey 2018/19 (NBS 2023).

As living standards constitute a key domain within the MPI for all analysis groups it is worth noting some key characteristics underlying living conditions as these both exemplify and contribute to the welfare situation of the population. For our more conflict-affected analysis groups of the northern zones, as well as all those reporting being directly affected by violence across the country, we find lower proportions of the population have access to safe drinking water, improved sanitation and electricity, and higher proportions that use charcoal/firewood as their main source of cooking fuel, compared to the southern zones and those indirectly affected by violence, with this difference persisting across waves (Figure 4.8).[44] Moreover, the only apparent upward trend regarding these characteristics is in relation to access to electricity (where access improved for all but the North East zone analysis group), implying that households are not generally improving crucial determinants of their living conditions over time.

[44] The exception with regard to access to improved sanitation is the group indirectly affected by violence, which has the lowest access to improved sanitation of all analysis groups except the North Central zone.

Figure 4.8: Dwelling characteristics by analysis group and survey wave



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Alongside poorer material living conditions, GHS data also shows that the three most highly conflict-affected analysis groups (i.e. in the northern zones) have a higher proportion of household heads with no formal education compared to the population in the southern zones. The same tends hold for those directly affected by violence compared to those indirectly affected. Again, these distinctions persist across waves (Table 4.2).

Table 4.2: Proportion of population residing in households whose head has no formal education, by analysis group and survey wave (%)

Analysis group	2010/11	2012/13	2015/16	2018/19
North East	45	44	39	27
North Central	35	38	36	33
North West	39	42	44	23
Southern zones	18	17	15	12
Directly affected by violence	42	32	38	22
Indirectly affected by violence	29	30	28	21
National	29	30	29	21

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

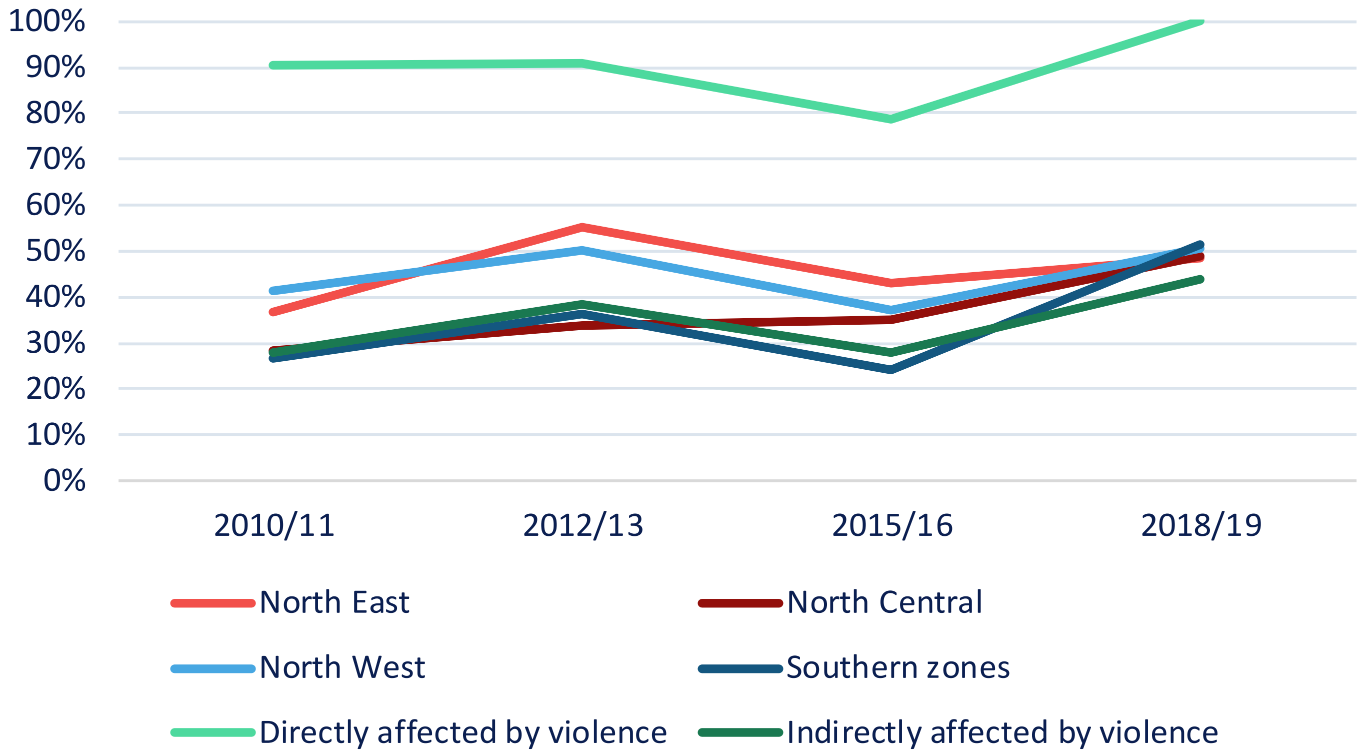
Alongside the welfare indicators presented above, these characteristics reflect a *de facto* degree of marginalisation and lack of investment in the northern zones of the country compared to the southern zones. Together, they indicate the size and complexity of the task to address the observed welfare dynamics, and levels of poverty and inequality in the country, which will rely both on geographically prioritised investments alongside significant peacebuilding efforts.

4.3 Shocks and coping strategies

Shocks

An important factor contributing to these welfare dynamics is the shocks that households face. Large parts of the population are exposed to shocks of various types, with those in our three most highly conflict-affected groups (North East, North West, and those reporting being directly affected by violence) being even more exposed than the rest of the country (Figure 4.9). The exception is in wave 4, where the southern zones and groups indirectly affected by violence have similar rates of exposure to shocks as the northern zones. This is likely driven by price shocks that start to impact the population across the country at this time (see Figure 4.11). By far and away the most shock-affected group is the group directly affected by violence. Across all survey waves, just over nine-tenths (91 per cent) of this group report suffering shocks.

Figure 4.9: Proportion of population affected by shocks, by analysis group and survey wave

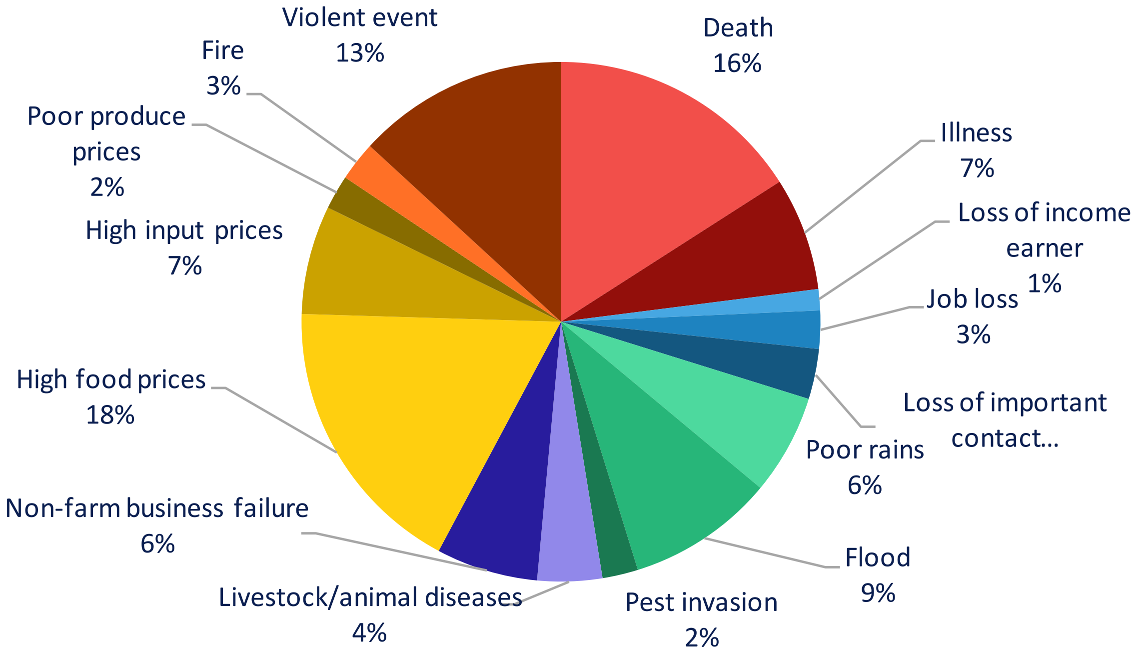


Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

The types of shocks that affect households are numerous and varied. Looking at survey data across all four waves, we find a large variety of different kinds of shocks impacting households, with death and illness together accounting for 23 per cent; income shocks, 7 per cent; climate and natural shocks, 17 per cent; livelihood shocks, 10 per cent; price shocks, 27 per cent; and fire and violence, 16 per cent (Figure 4.10).

Moreover, the data shows that the types of shocks people face oscillate over time. What we observe looking across the four different waves of the survey between 2010/11 and 2018/19 (Figure 4.11) is that climate and natural shocks, livelihood shocks, and shocks associated with fire and violence retain fairly consistent shares of all shocks faced over time. However, in the two most recent survey rounds, price shocks, driven by high food prices, occupy a much higher proportion of the shocks households have to contend with. No doubt this helps explain, at least in part, some of the rising food insecurity and multidimensional poverty we observe across the country in wave 4, in particular among the southern zones and analysis groups indirectly affected by violence.

Figure 4.10: Share of shocks households face, by type, all survey waves



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Figure 4.11: Share of shocks faced, by category and survey wave

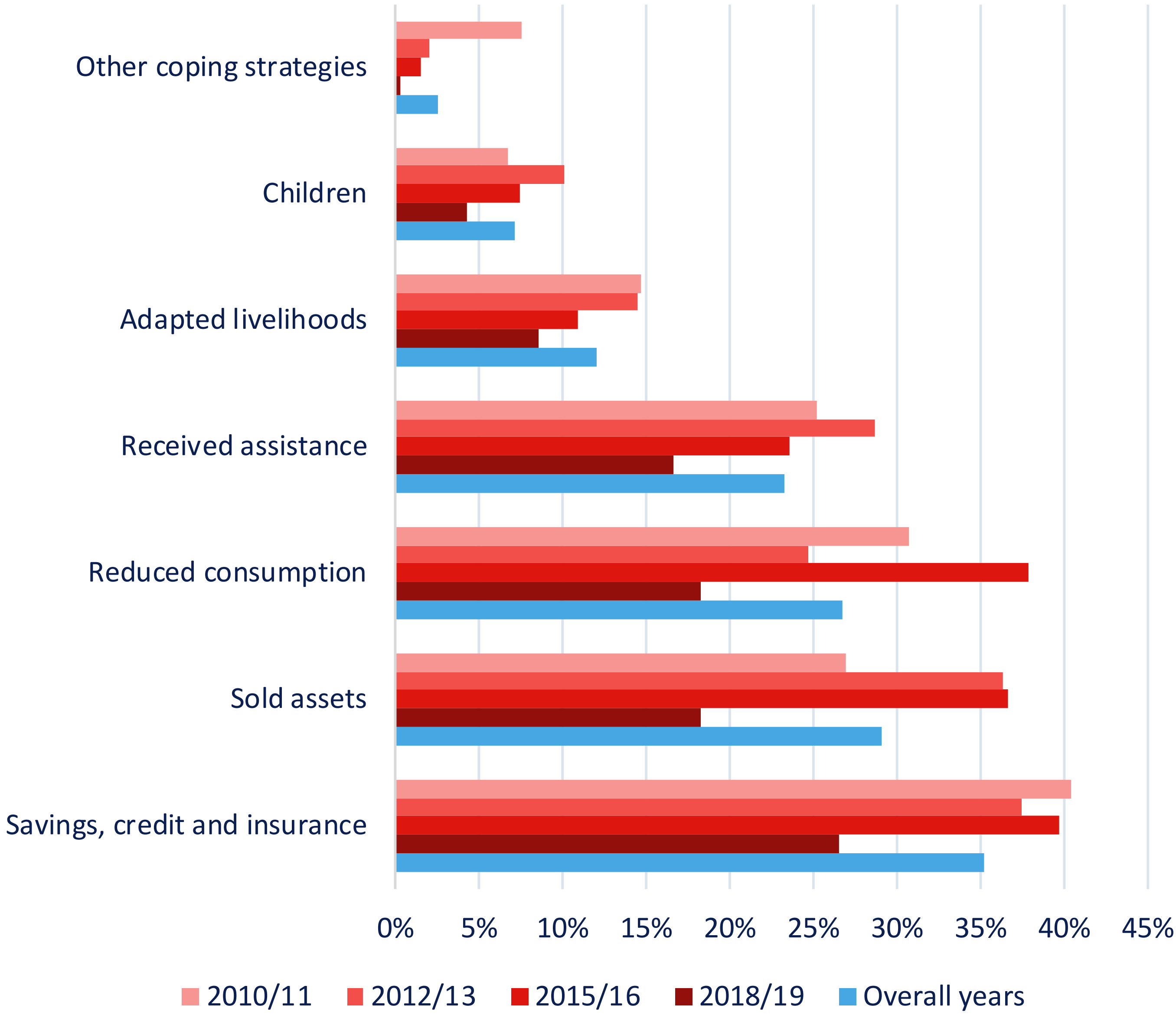
Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Coping strategies

To try to mitigate the impact these shocks have on their welfare, households deploy different kinds of coping strategies. Some strategies are more prevalent than others. Furthermore, the degree to which households rely on different coping strategies changes over time. This may indicate that households' and communities' resilience changes in the face of continued subjection to shocks and sustained poverty.

Figure 4.12 presents the kinds of coping strategies households that have suffered shocks resort to by survey wave. It shows the most common coping strategies are to draw down on savings, resort to borrowing and/or credit, or utilise insurance, with over one-third (35 per cent) of shock-affected households resorting to this measure across all survey waves. Among these strategies, by far the most common is borrowing and credit (24 per cent); just 6 per cent of the population across all waves can draw down on savings; while insurance accounts for less than one percentage point of cases across all waves.

Figure 4.12: Proportion of shock-affected population resorting to coping strategies, by wave



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

The next most prevalent coping strategy is sale of assets (29 per cent), which could be livestock, property, or the harvest in advance of reaping it. Among these, the most common is the sale of livestock (16 per cent across all waves), followed by sale of property (9 per cent).

Reducing consumption is another common coping strategy, adopted by 27 per cent of the shock-affected population. Within this, reducing food consumption is the most prevalent component (16 per cent); 11 per cent of the shock-affected population report reducing non-food consumption.

Receiving assistance is the fourth most common coping strategy, with 23 per cent of the shock-affected population reporting receiving some kind of assistance across all survey waves. This coping strategy is dominated by support received from relatives (22 per cent), with only around 1 per cent of the shock-affected population reporting receiving assistance from the government or NGOs as a result of suffering a shock. Further discussion of assistance is presented in section 4.4.

Some 12 per cent of the shock-affected population report adapting their livelihoods in response to suffering shocks, of whom just under 7 per cent sought extra work, 2 per cent migrated for work, and 4 per cent rented or leased out land. Coping strategies that directly involve children are reported by 7 per cent of the shock-affected population, with 4 per cent saying they had to take children out of school, and 3 per cent sending children to live with others. Finally, just under 3 per cent of the shock-affected population report relying on other kinds of coping strategy.

When considering how these patterns are reflected among our analysis groups, we find that households in the North East and North West zones are more likely than the other analysis groups to experience any kind of shocks across waves 1–3, though by wave 4 around 50 per cent of all four analysis groups have experienced at least one shock in the given recall period. Those in the North East and North West are also less likely to rely on savings; less likely to borrow money or purchase goods on credit; more likely to sell livestock or property; more likely to rent or lease land; and, in the North East especially, more likely to rely on support from relatives. Meanwhile those in the North Central and southern zones are more likely to reduce food and non-food consumption (especially in the southern zones) compared to those in the North East and North West zones; more likely to borrow money or purchase goods on credit; and more likely to take children out of school. Finally, those directly affected by violence are more likely than those indirectly affected to report reducing consumption; taking children out of school; drawing down on savings; relying on relatives for support; and receiving assistance from government.

It is potentially instructive to note the reduced propensity to deploy certain coping strategies over time, given that all coping strategies appear less prevalent in wave 4 than in wave 1. This could well reflect the reduced ability of households and communities to continue implementing those coping strategies indefinitely in the face of repeated shocks.

For example, the proportion of the shock-affected population selling assets as a result of suffering a shock drops from 27 per cent in 2010/11 to just 18 per cent in 2018/19. Similarly, the proportion able to draw down on savings, and/or borrow or access credit, drops from 40 per cent in wave 1 to 27 per cent in wave 4. Given the reliance on support from relatives as a coping strategy, that the resilience of communities as a whole may be diminishing in the face of repeated shocks could be signalled by the fact that, in 2010/11, 24 per cent of the shock-affected population relies on this form of assistance, whereas in 2018/19 that figure falls to just 16 per cent. This finding is in line with findings by the national poverty assessment (World Bank 2022), which found that households' ability to access informal support was diminished by covariate shocks such as Covid-19 and price inflation in 2020.[45]

To consider this hypothesis further, we construct an asset index to see whether households' assets are rising or falling over time (see section 2.2.4 for details on how the asset index was constructed). This data shows that, across all analysis groups, the asset index score diminishes between 2010/11 and 2018/19 in all zones bar North Central, with by far the biggest falls in the North East and among the analysis group directly affected by violence. These two groups also see their relative position worsen over time in relation to the overall asset index distribution (see Table A.2).

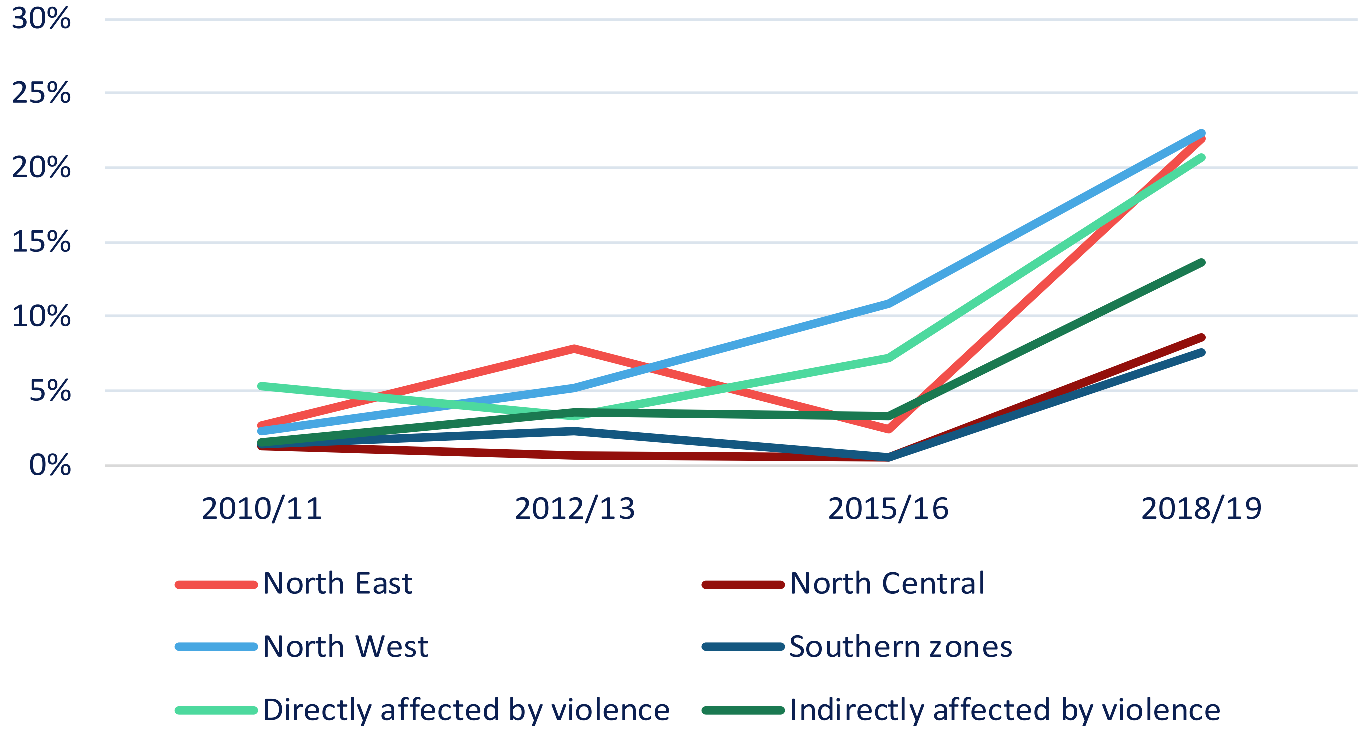
[45] It also mirrors findings in neighbouring Niger. See Merttens *et al.* (2023).

4.4 Social assistance

Despite the low levels of welfare and high levels of vulnerability exhibited by households across our analysis groups, particularly among those most affected by conflict, alongside seemingly diminishing levels of resilience across the shock-affected population, coverage by social assistance in the period encompassed by the first three GHS waves is vanishingly small. This jumps markedly in wave 4, especially for certain population groups, but a large share of the population remain unreachable by either government or non-governmental assistance due to insecurity and conflict (see section 3).

In 2010/11, across the whole country, less than 2 per cent of the population report being in receipt of any kind of social assistance. By 2015/16, this figure has edged up to just under 4 per cent. The picture is slightly different depending on analysis group. For example, coverage by any kind of assistance in the North East zone is 3 per cent, rising to 8 per cent in 2012/13, before dropping to 2 per cent in 2015/16. Meanwhile in the North West, coverage by any kind of social assistance is 2 per cent in 2010/11 but climbs to 5 per cent in 2012/13 and then 11 per cent in 2015/16. Among those reporting being directly affected by violence, coverage is 5 per cent in 2010/11, climbing to 7 per cent in 2015/16. Coverage among the other analysis groups closely reflects the national trend (Figure 4.13).

Figure 4.13: Proportion of population receiving assistance, by analysis group and survey wave



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

In 2018/19 this situation changed quite markedly. Coverage by any kind of social assistance across the whole population rose to just under 15 per cent, with around one-fifth (21 per cent) of those directly affected by violence covered, 22 per cent of those in the North East, and 22 per cent in the North West. In the other parts of the country, 9 per cent of those in the North Central zone, and 8 per cent of those in the southern zones, were covered by any kind of social assistance in wave 4.

This rise in coverage was driven by food assistance. Coverage by cash assistance (3 per cent), other in-kind assistance (<1 per cent) and scholarships (<1 per cent) remained very low. Within the North East, food support was driven by a combination of food aid and school feeding, whereas in the North West and north central zones it was driven by school feeding almost exclusively. In the southern zones, food assistance was evenly split between food aid and school feeding.

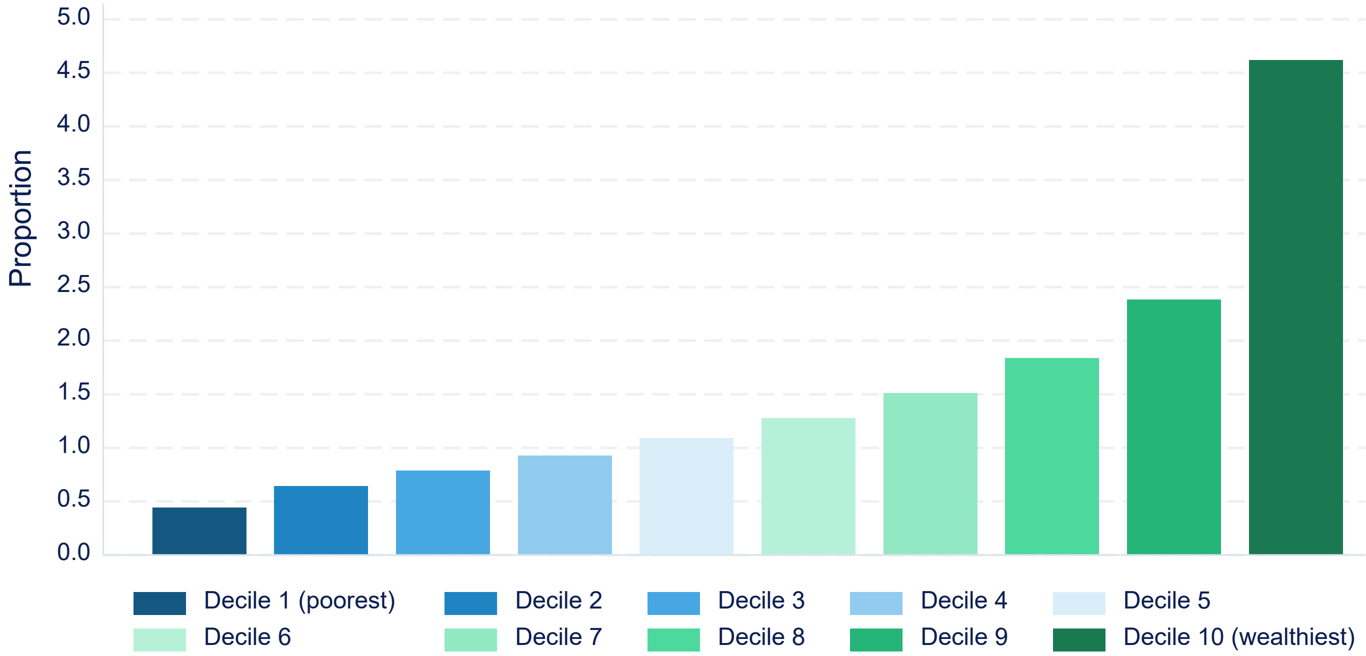
4.5 Implications

Over the past decade or more Nigeria's wealth distribution has been highly unequal, with a large proportion of the population consuming relatively little, alongside a very small proportion consuming much higher amounts (see Figure 4.13). The national poverty rate has remained basically static overall, but welfare trends in terms of consumption, food security, and multidimensional poverty differ across analysis groups. A significant share of the population is highly vulnerable to an array of different types of shocks, including climatic, economic, and political shocks such as violence and conflict.

Evidence indicates that both climatic and political shocks, specifically violence, including the Boko Haram and herder-farmer conflicts, are associated with both transient and chronic poverty (Diwakar and Brzezinska 2023). The incidence of violence is higher, and welfare lower, among the most conflict-affected analysis groups compared to other parts of the country or those not directly affected by violence. Households in the conflict-affected analysis groups face generally poorer living conditions than the rest of the population; this situation shows no trend of improvement. Furthermore, households' and communities' resilience in the face of repeated shocks appears to be diminishing over time.

Social assistance is provided to a small proportion of the population (although it has risen in more recent years), significantly characterised by humanitarian aid in the zone most affected by the Boko Haram insurgency (the North East) and by school feeding (that is, by more development-focused social protection objectives) in the areas most impacted by the herder-farmer conflict (i.e. the North West and North Central zones). Parts of the country remain inaccessible to humanitarian aid, l*et al*one more routine forms of social assistance.

Figure 4.14: Mean per capita consumption as a proportion of expenditure at the 40th percentile, by consumption decile



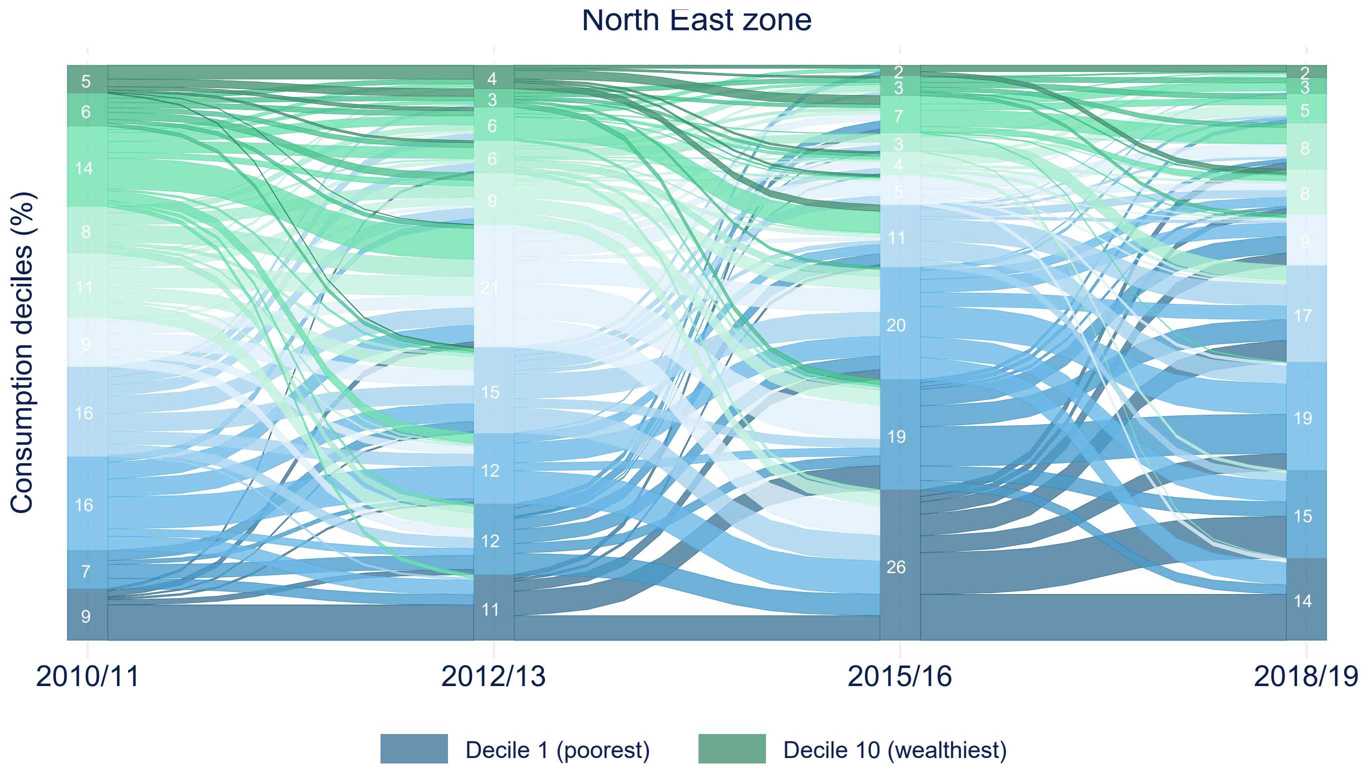
Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

The persistence of a flat welfare distribution over the majority of a highly vulnerable population has implications for the targeting of social assistance interventions. This is illustrated in Figure 4.14, which presents the mean per capita consumption expenditure by consumption decile as a proportion of expenditure at the 40th percentile using combined data from all GHS waves.[46] It shows that households in the bottom eight consumption deciles all have per capita expenditure within two times the expenditure of the 40th percentile. In decile nine, average consumption exceeds twice the expenditure level of the 40th percentile, but not by much (2.4). Only in the very wealthiest consumption decile do households consume significantly more than this, so might be considered genuinely non-poor.

[46] The picture does not look significantly different if one considers individual waves by themselves.

Alongside this high degree of inequality, the data shows a high level of flux between consumption deciles over time. Figure 4.15 presents an example using the population of the North East zone.[47] As movement between the first eight (or even nine) deciles can be considered movement between different tiers of poverty, this flux is emblematic of the high degree of vulnerability and low levels of resilience among the population.

Figure 4.15: Changes in households' welfare status by consumption decile



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
Note: This figure was produced using the sankeyplot command in Stata, developed by Maik Hamjediers, Department of Social Sciences, Humboldt-Universität zu Berlin.

Poverty targeting in these circumstances presents two inherent challenges. The first is that it will likely be difficult to accurately distinguish between poor and non-poor households at a given moment in time using a PMT (see section 5). The second is that, because non-poor households at one moment will often find themselves poor the next (and vice-versa), without frequent retargeting, which may be difficult to sustain on a programme cost basis, it is difficult to provide an ethical justification for selecting one set of poor households in one moment in the full knowledge you will be excluding another set with those very same characteristics the next.

Another implication of the Nigeria context is given by the fact that we find different trends for different groups across different measures of welfare. Trends in consumption expenditure are different to trends in food security and multidimensional poverty, with no clear patterns across all these measures for all groups. This implies that different populations face differing circumstances and respond in different ways depending on their context and capacities.

[47] The banded rows in the figure represent national consumption deciles, with the bottom row being the poorest decile nationally and the top row the wealthiest. The flows depict the proportion of each decile moving into the same or a different decile across time.

Such a situation indicates that, by itself, social assistance (and even social protection more broadly) is unlikely to play anything other than a protective, or at best perhaps a preventative, role (Devereux and Sabates-Wheeler 2004).[48] This is because structural problems with the labour market – in effect, the dearth of adequately paying waged employment capable of lifting people out of poverty – mean that most poor Nigerians hold either farm or non-farm jobs that cannot translate their hard work into an escape from poverty (World Bank 2022a). This challenge is then exacerbated by poor and unequal social services provision in terms of education and health (including nutrition), which hinders human capital development. Furthermore, due to conflict, while the need for social assistance is high, not only social assistance but even humanitarian assistance is not possible in some areas. This implies that, without coordinated and significant investment across multiple policy domains – including peacebuilding, social protection, agriculture, education, health, and infrastructure – social assistance will struggle to do anything more than mitigate the worst effects of low welfare for the majority of households. Nevertheless, and for this very reason, social protection is imperative.

This means there is a strong need to clearly articulate the specific policy objective any given social assistance intervention aims at and match targeting criteria to that. Social assistance cannot by itself solve the myriad problems facing the majority of households in Nigeria and preventing them from escaping poverty, nor can it be infinitely tailored to particular circumstances. Rather, it must be directed towards specific issues and challenges (e.g. food security and malnutrition, or risks associated with particular stages of the life cycle). Therefore, questions as to who to target with social assistance programmes and how need to be clearly situated in relation to their stated policy objectives, including whether these are developmental or humanitarian in nature.

In section 5, we consider various options for social assistance targeting design in the Nigeria context, both to assess their performance according to given metrics and to consider particular inherent trade-offs they may embody in relation to selected policy objectives.

[48] In Devereux and Sabates-Wheeler's schema (2004), 'Protective' measures provide relief from deprivation, usually provided in the form of targeted safety net measures aiming to provide relief from poverty and deprivation to the extent that promotional and preventative measures have failed to do so, including social assistance for the 'chronically poor' people, especially those unable to work. 'Preventative' measures, by contrast, seek to avert deprivation and deal directly with poverty alleviation. They include social insurance for 'economically vulnerable groups' (i.e. those people who have fallen or might fall into poverty, and may need support to help them manage livelihood or lifecycle-contingent shocks). 'Promotive' measures, meanwhile, are those that seek to enhance real incomes and capabilities (e.g. through interventions such as livelihood-enhancing programmes, microfinance, and school feeding). Finally, 'transformative' measures directly address issues of social equity; for example, workers' rights, or human rights for minority groups, and include changes to the regulatory framework and/or transformations in public attitudes and behaviours that enhance equity of opportunity. Together, social protection policies should provide a consistent framework delivering all of these functions in coherent way.

5. Targeting simulations

The analysis above shows that the population of Nigeria is overwhelmingly poor and vulnerable, with low and possibly diminishing resilience to multifarious shocks. This implies that the targeting approaches best suited to reaching them depend crucially on the specific policy objectives to be achieved.

Below, we use GHS data to model the performance of various targeting approaches in reaching a given population. For the purposes of illustration, we designate as our target population the bottom 20 per cent of the national per capita consumption distribution (i.e. households living in extreme poverty). However, as indicated above (see section 4.5), attempting to target poor households for social assistance purposes in this context is problematised by the huge prevalence of vulnerability among the population, which means that households move in and out of poverty, including extreme poverty, all the time. Nevertheless, we retain this target population for illustrative purposes, not least to indicate the challenge of adequately targeting poor households in such a context.

An alternative target population could be direct victims of violent attacks. However, while compensation and recovery schemes for victims of attacks are possible and do exist (see Table A.1), targeting of this kind of assistance is and should be different in scale and nature to other social assistance programmes, which, whether addressing development or humanitarian objectives, tend to be larger in scale and seek to reach broader categories of the population. While not modelling the population directly affected by violence as a target group, therefore, we nevertheless report on how far this group is coincidentally reached using the various selection methods presented (Table 5.3).

The actual target population to be selected of course depends on the policy objectives. Examples may be food-insecure households (e.g. in the case of humanitarian food aid); young children (e.g. if trying to address malnutrition); children of school age (e.g. if trying to improve education outcomes); infants and/or pregnant and lactating women (e.g. if aiming to improve early-years development); women of peak reproductive age (e.g. if trying to address certain aspects of gender inequality); older people (e.g. if trying to address poverty in old age); people living with disabilities (e.g. to compensate for lack of labour power and higher costs of living); or people of working age with low labour capacity (e.g. as compensation for un- or underemployment in the absence of social insurance). We thus present a variety of potential targeting selection methods based on the kinds of criteria that such programmes commonly use, including both 'categorical' approaches based on simple demographic criteria such as age (e.g. targeting children or older people), as well as formula-based approaches, such as, in this case, households living in extreme poverty (i.e. households in the bottom national consumption quintile) as predicted by a simple PMT. These targeting approaches are sometimes compared to a purely random targeting approach to see how they fare.

For the formula-based PMT approach we use the Simple Poverty Scorecard tool, which provides a ready-made and relatively low-cost way to predict the consumption-based poverty status of households in Nigeria. The Simple Poverty Scorecard is trained on GHS 2012/13 data (Schreiner 2015). It uses ten questions to construct a model that predicts the poverty status of a given household, with questions covering the number of household members, the number of rooms the dwelling contains, the construction material used for the dwelling roof, the toilet and cooking arrangements, and whether the household owns assets in the form of mattresses, a TV, mobile phones, vehicles, and certain agricultural livelihood tools.

A few points are useful to note before presenting the results of this analysis. First, we use for our analysis the GHS wave 2 data from 2012/13. This is for two reasons. The first is that this represents the last wave of the GHS before the sample frame started to become increasingly compromised by insecurity, and thus gives a more accurate and representative sample of the overall national population at that time (see section 2). The second is that this survey wave also happens to match the data the Simple Poverty Scorecard is trained on. This is not essential: if underlying consumption patterns and the welfare distribution have not changed markedly in subsequent survey rounds, then the predictive power of the scorecard should not have notably diminished; and the welfare distribution at least looks to have retained the same basic shape in wave 3 and wave 4 as it had in wave 2. However, it is nevertheless advantageous in ensuring the PMT functions as well as can be expected.

Second, though some form of CBT is a common method many humanitarian and social assistance programmes use in contexts such as Nigeria, it is not possible to replicate the results of CBT selection methods in national survey data as we have no way of knowing who communities would select in practice. This means we cannot compare CBT to the performance of the categorical or formula-based approaches that we are able to model. We include some discussion of CBT approaches based on the literature when assessing the performance of the approaches we are able to simulate (see section 5.3).

Third, there are two sources of targeting error: errors of design and errors of implementation. Design errors can be assessed using *ex ante* modelling on extant data, and stem from how well the eligibility criteria succeed in identifying the target population. If large numbers of the target population do not satisfy the given eligibility criteria, or large numbers of the non-target population do, then there will be significant targeting errors that are a consequence of the design of the eligibility criteria. Implementation errors, on the other hand, relate to how well the targeting process is carried out in practice. If the eligibility criteria are well designed but not properly implemented, this may also lead to targeting errors.

In this analysis, we only analyse design errors as we do not have access to information about the outcomes of extant programmes' targeting processes in practice. But it is important to acknowledge that when assessing actual programmes it is vital to study them as implemented, as some or even much of the targeting performance may be determined by the quality of implementation (Schnitzer and Stoeffler 2021).[49] Nevertheless, *ex ante* modelling remains useful for our purposes, not only for the insight it provides into design issues, but also because, as we will see in this context, it demonstrates precisely how challenging reaching a given target population can be in practice. It should not be superfluous to point out that, in practice, whatever targeting approach is selected needs to fit within the implementation capacity of the organisations that will deliver it.

Finally, it is important to note that targeting 'performance' is also dependent on the index used to assess it. Here, while we use a number of different performance metrics, our aim is not to evaluate the performance of any particular programme, but rather to indicate how different approaches may fare in trying to reach a given target population within the specific context of Nigeria.

5.1 Performance at national level

To begin with, we compare the performance of five possible targeting approaches at national level; that is, without the addition of any additional geographic targeting criteria that may limit the areas where a programme is implemented based on where conflict or other kinds of shocks occur, or where certain deprivations are concentrated (such as monetary poverty, food insecurity, malnutrition, etc.). The five targeting approaches considered are defined and distinguished by different eligibility criteria. These are:

- Children under two years of age;
- Children under five years of age;
- Older people aged 65 years or above;
- People living with disabilities;[50]
- Households living in extreme poverty households (i.e. bottom national consumption quintile), as predicted by a PMT.

For comparison purposes, we also refer at points to the performance of a purely random selection of half the population.

[49] It is even possible that targeting performance may be improved by implementation 'error', if, for example, eligibility criteria do not identify well or exclude some of the target population, and programme implementers therefore bend the rules to ensure such exclusions are minimised.

[50] Individuals are classified as disabled if they report having any difficulties seeing (including with glasses), hearing (including with hearing aids), walking or climbing steps, remembering or concentrating, performing self-care, or using their usual language or communicating.

As overall coverage is a useful proxy for cost, we compare coverage both in terms of the number of people covered under each of the five eligibility criteria and the proportion of the overall population that they reach (Table 5.1).[51]

Table 5.1: Coverage of population by targeting approach: national level

Coverage indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Eligible population (number of individual beneficiaries under selection method)	6,636,711	20,920,013	8,201,587	7,238,891	36,786,418
Eligible individuals as a share of total population (%)	4	12	5	4	21
Eligible households (number of beneficiary households)	6,016,218	12,772,501	7,039,974	5,333,313	4,101,307
Total individuals reached (number of individuals living in beneficiary households)	44,633,119	93,210,803	38,812,368	33,108,729	36,786,418
Total individuals reached as a share of total population (%)	25	52	22	19	21

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table 5.1 shows that (in 2012/13) targeting children under two years of age would directly reach 4 per cent of the total population (some 6.6 million young children), and indirectly reach 25 per cent of the population (44.6 million people). Targeting children under five would reach 12 per cent of the total population (20.9 million children) directly and 52 per cent (93.2 million people) indirectly. Targeting older people would reach some 5 per cent of the population (8.2 million people) directly and 22 per cent (38.8 million) indirectly. Targeting people with disabilities would reach 4 per cent of the population (7.2 million) directly and 19 per cent (33.1 million) indirectly. Meanwhile targeting the bottom 20 per cent of the welfare distribution would reach some 21 per cent of the total population (36.8 million people).[52]

If coverage is indicative of cost, then the approach likely to bear the highest cost would be targeting the bottom 20 per cent of the welfare distribution, and the cheapest would be targeting children under two years of age. However, the overall cost will of course depend on the value of the transfers provided, which depends on the objectives of the policy. For example, although targeting older people would indirectly benefit similar numbers of people as targeting households living in extreme poverty (i.e. the bottom 20 per cent of the welfare distribution), the value of the two transfers may differ markedly given that the former is intended to support individuals and the latter to support whole households.[53]

[51] Programme costs tend to be driven by the number of beneficiaries, rather than the implementation costs, which may be smaller or larger depending on the nature of the implementation requirements and the quality of service provided, but which are only ever a small fraction of the costs of the transfers themselves.

[52] The reason the population reached constitutes a higher share of the population than 20 per cent has to do with the PMT score threshold and because the PMT is a prediction of poverty status so contains inherent error. One could lower the proportion of the population targeted to receive support by selecting a lower PMT score eligibility threshold. Here we selected the score that best approximates to identifying the bottom 20 per cent of the PMT score distribution.

[53] See section 7 for a discussion of how explicit or implicit messaging around a policy may influence how beneficiaries use transfers.

The distinction between the numbers reached directly and indirectly is therefore important depending on the objectives of the policy. Cash or food support may explicitly target households or individuals, and/or benefit some or all household members. So, depending on the purpose of the policy, the value of support may or may not need to take into account household size. For example, the value of a cash grant intended to support nutrition for young children may be set at a given value per child, or tapered depending on the number of children in the household, or may even be provided at a flat rate to households regardless of the number of eligible children they contain. Similarly, a household grant intended to support people's basic needs may be provided at a flat rate or adjusted depending on the number of household members it is supporting.

Such decisions depend on the given policy objectives and resource constraints, as well as, perhaps, administrative capacity (e.g. the ability of programme implementers to identify and verify household members), but in all cases they have inherent implications for equity and benefit incidence. For example, providing a flat grant per household to support people's basic needs means that larger households receive lower-value benefits in per capita terms than smaller households. In a context in which poorer households tend to be larger on average than wealthier ones,[54] wealthier households would tend to benefit proportionally more from such a policy than poorer ones. Distributional effects such as these may thus affect the information the population provides to programme implementers (see section 6). For these reasons, understanding the total number of people a social assistance grant is expected to benefit either directly or indirectly is important both in relation to its intended impacts and the equity of its distributional effects (recognising that intra-household allocation of resources is or can also be unequal).

The figures presented in Table 5.1 indicate the size of the intended beneficiary population for each respective targeting method, both in absolute terms and relative to the whole population. In Table 5.2, we consider how well the various targeting approaches reach the intended target population (e.g. households living in extreme poverty, considered as those in the bottom 20 per cent of the welfare distribution). For this we present six indicators that each capture a different dimension of performance.

Table 5.2: Performance of targeting approaches: national level

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	34	70	22	18	54
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	72	73	80	81	49
Exclusion error (% of individuals in target households who are not covered)	66	30	78	82	46
Ratio of poverty rates (beneficiaries/non-beneficiaries)	1.4	1.7	1.0	1.1	2.7
Ratio of food insecurity rates (beneficiaries/non-beneficiaries)	0.9	0.9	1.1	1.1	1.0
Ratio of multidimensional poverty rates (beneficiaries/non-beneficiaries)	0.9	0.9	1.1	1.1	1.0

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

[54] In 2012/13, average household size for those in the bottom two consumption quintiles was 8.7, compared to 6.9 for households in the upper three consumption quintiles.

The first indicator of performance is coverage rate: the proportion of the target population that is covered by each targeting approach, respectively. Table 5.2 shows that the coverage rate of the target population is partially driven by the overall coverage rate. For example, targeting children under two years of age indirectly covers 25 per cent of the general population (Table 5.1) and 34 per cent of the target population; targeting children under five indirectly covers around 52 per cent of the general population (Table 5.1) and 70 per cent of the target population.

At the same time, targeting here performs ‘better’ when aiming to reach poor population groups directly. Targeting households living in extreme poverty using a PMT reaches 21 per cent of the overall population and 54 per cent of the target population; whereas targeting older people or people with disabilities, whose prevalence in the bottom consumption quintile is less than the national average, reaches shares of the target population (22 per cent in the case of older people, 18 per cent in the case of people with disabilities) that are very similar to the share of the overall population reached (22 per cent and 19 per cent, respectively).

The next two measures of targeting performance are given by inclusion and exclusion errors. Inclusion errors refer to cases where households or individuals selected to be beneficiaries are not part of the intended target population (expressed as the proportion of beneficiaries that are not part of the target population). Exclusion errors refer to cases where members of the intended target population are not selected to benefit from the programme (expressed as the proportion of individuals in the target population that are not selected for participation).

In relation to inclusion and exclusion errors, the data shows that these tend to be high no matter which selection method is adopted: almost always over 45 per cent and sometimes close to double that. Even the PMT has high errors of inclusion (49 per cent) and exclusion (46 per cent), despite that selection method being expressly designed to identify consumption-poor households. Targeting children under five years of age produces the lowest level of exclusion error (30 per cent), but a high level of inclusion error (73 per cent), which reflects the high rate of overall coverage for that selection method.

Sometimes, inclusion and exclusion errors rise or fall conversely in relation to overall coverage rates; in other words, reaching a larger share of the overall population will mean fewer exclusion errors and more inclusion errors, while covering a smaller share of the overall population will lead to a higher share of the target population being excluded and a lower share of the non-target population being included (see, for example, Merttens *et al*. 2023). In this case, what we see on balance is that the PMT performs best (albeit not especially well) at identifying consumption-poor households in terms of both inclusion and exclusion errors taken together, which is to be expected given this is what it is expressly designed to do.

However, two of our chosen selection methods (older people aged over 64 and people with disabilities), though covering a relatively small overall share of the population, have both high inclusion errors and high exclusion errors. In these instances, this reflects the fact that these categories of people are less likely than other groups to be in the bottom 20 per cent of the consumption distribution. Children, on the other hand, are more likely to fall into the bottom national consumption quintile (or the bottom two quintiles, for that matter), so both inclusion errors and exclusion errors are comparatively lower when selecting children. By way of comparison, a totally random targeting of half the population produces almost the same level of exclusion errors as using the PMT (48 per cent vs 46 per cent), but much higher inclusion errors (79 per cent vs 49 per cent) due to covering a higher share of the overall population.[55]

Three other measures of targeting performance are presented in Table 5.2, indicating the degree to which the eligibility criteria select low-welfare households (those whose consumption falls into the bottom two national consumption quintiles), or households that struggle to provide sufficient food for themselves throughout the year (those reporting insufficient food for the household in the past 12 months), or multidimensionally poor households. To look at these dimensions, we compare the ratio of low welfare, or food insecurity, or multidimensional poverty rates between beneficiary and non-beneficiary populations: a ratio of over one means that beneficiaries are more likely than non-beneficiaries to be low welfare/food insecure/multidimensionally poor, and a ratio of less than one means that beneficiaries are less likely than non-beneficiaries to be low welfare/food insecure/multidimensionally poor.

[55] For 95 per cent confidence intervals around all the estimates presented in Table 6 see Table A7.

As we see from Table 5.2, in relation to targeting low-welfare beneficiaries, the PMT performs markedly better than categorical selection criteria based on demographic characteristics (again, as one would expect), with the likelihood of being poor 2.7 times higher for beneficiaries than non-beneficiaries under the PMT selection method. This compares to 1.4 and 1.7 times higher for children under two years of age and children under five, respectively. The selection mechanisms targeting older people and people with disabilities are either just as likely, or almost as likely, to select poor people as not (the selection method ratio for older people is 1.0, while for people with disabilities it is 1.1).

None of the selection methods are very good at identifying food-insecure households, with all ratios of food insecurity rates very close to one. Only the selection criteria for older people and people with disabilities are better than random at identifying food-insecure households at national level, and even in these cases only very marginally so. Performance in relation to multidimensionally poor households is similarly weak.[56]

These results point to the fact that, to assess targeting performance, what is required are clear and viable policy objectives. Social assistance of the kind typically provided in such contexts, whether via routine government social protection systems for developmental purposes, or via humanitarian actors for life-saving or extreme deprivation mitigation purposes, is unlikely to radically transform the broader conditions determining welfare trends (at least, not unless provided at unaffordable rates of coverage and adequacy). Here the issue is not that social assistance cannot or may not reduce poverty (including depth or severity of poverty) – giving poor households additional income should reduce poverty – but that there are considerable equity issues involved, given that it is exceedingly difficult to accurately identify poor households at any given moment in time, and that households frequently move in and out of poverty. For this reason, ethically it is easier to justify targeting particular population groups based on categorical demographic characteristics that treat the whole population equitably in pursuit of specific objectives relevant to that group.

However, even when ensuring eligibility criteria are well aligned to specific policy objectives appropriate to a specific group, resource constraints may mean the whole population meeting those eligibility criteria cannot be reached. In such circumstances, geographic targeting based on relevant criteria may help. Resources may be distributed around the country based on accepted deprivation rates of one kind or another, depending on the policy objectives. For example, humanitarian food aid may be implemented in states or LGAs where food security measures are above a certain threshold. Or, if the objective is to reduce child poverty, children in states with high poverty rates (or even high child poverty rates) could be prioritised.[57] Or, a social assistance programme aiming to reduce malnutrition may target young children, commencing in those areas where nutrition monitoring systems indicate malnutrition passes given thresholds.

Adding a geographic element to the targeting approach does represent an ethical compromise in terms of equity of treatment (e.g. in relation to one of the above-mentioned examples, children living in extreme poverty in places with lower average poverty rates are not treated the same as children living in extreme poverty in places where the average incidence of poverty is higher). But it may be justified on the basis of necessity (prioritising the poorest population groups given resource constraints), only if accompanied by a policy commitment to expand to less poor areas (i.e. to cover all areas) as soon as fiscally possible.

[56] Here, the precise nature and composition of the MPI is relevant, and legitimate questions may be raised about the use of such an indicator in targeting social assistance programmes. This is because social assistance programmes should ideally be targeted at specific achievable objectives, whereas an MPI combines multifarious deprivations into a single measure. Nevertheless, we present the ratio of multidimensional poverty rates as one measure of performance to illustrate how single eligibility criteria may or may not cover multifarious types of deprivation. Poverty targeting can potentially be a strength in this regard (if technically and operationally feasible), because poverty is often highly correlated with multiple different kinds of deprivation. In this instance, this is not the case, but this result is driven by the high contribution of food insecurity to the MPI and the low correlation of food insecurity with low welfare.

[57] The poverty (or child poverty) rate, or extreme poverty rate, is one metric by which states could be ranked, but it is equally possible to use or combine other metrics such as depth and severity of (child) poverty (e.g. if the aim was to prioritise the *poorest* children).

While geographic targeting does present an ethical trade-off, it can still provide an ethically consistent proposition. For example, if the aim is to reduce child poverty, categorical targeting of children in poor areas will produce high inclusion and exclusion errors in terms of reaching poor people generally – many non-poor people will benefit, while many poor people will not – but *all poor children in poor areas* will be covered, which would be fully in line with the given policy objective. The potential impact of geographic targeting on targeting performance is discussed further in section 5.2.

Additional ways to ration resources beyond geographic targeting could be to fine-tune eligibility thresholds; for example, in terms of age – targeting people older than 70 or 80 years old, say, rather than 64; or targeting children aged up to three years old, rather than five – or targeting based on the severity of people's disabilities. Here, consideration must be given to the logic of the intervention, as well as the ability to adequately or meaningfully differentiate between categories. For example, social assistance programmes aiming to improve early years development may target children during the first 1,000 days of life (the period roughly coinciding with conception through to their second birthday) for reasons of a clearly defined logic (Cusick and Georgieff 2013),[58] so reducing the age range of the eligibility criteria may undermine that logic. Or, restricting disability support to only people classified as severely disabled depends on an adequately functioning disability assessment mechanism.

Our previous case study in Niger (Merttens *et al*. 2023) highlighted that targeting is most likely to be deemed acceptable (and therefore not undermined by other existing redistribution mechanisms) when both the populations served and the implementing agents clearly understand the aims of the programme and the rationale aligning those aims with the eligibility criteria and selection method. In this regard, social and political acceptability also has an ethical foundation. Crucial to geographic targeting is thus the degree to which the deprivation measure(s) that will determine the collective resource allocation are accepted. Such measures may be derived from survey data, such as poverty rates in the example presented above, or administrative data, such as may be available through nutrition surveillance systems, for example. But what is crucial is that this data is credible and not contested in the eyes of all stakeholders, and provides as robust a measure as possible of the problem to be addressed. Where data is contested, political impasses or negotiation may severely impact the efficiency and effectiveness of the social assistance response.[59] This could be especially detrimental in emergency or humanitarian situations where speed and equity of treatment are even more essential.

Before moving on to consider the potential impacts of geographic targeting, as well as CBT as a targeting approach that we are unable to model using the survey data, we briefly consider how well our selected eligibility criteria include particular vulnerable groups. To do this, we present a set of six ratios which compare the proportion of the beneficiary population under each selection method that belongs to a given vulnerable group to that same proportion within the non-beneficiary population. Here, we count as the beneficiary population all people residing in eligible households (i.e. all people directly or indirectly targeted). The vulnerable groups we consider in this regard are:

- Women;
- Women of peak reproductive age;
- Children under 15 years of age;
- People with disabilities;
- Older people (aged over 64 years);
- People directly affected by violence.

Table 5.3 presents the results of this analysis.

[58] See also Pem (2015).
[59] For example, as has happened consistently in Ethiopia under the Productive Safety Net Programme shock-responsive component and Humanitarian Food Aid systems.

Table 5.3: Coverage of select vulnerable population groups by targeting approach: national level

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Ratio of proportion of women (beneficiaries:non-beneficiaries)	1.0	1.0	1.0	1.0	1.0
Ratio of proportion of women of peak reproductive age (beneficiaries:non-beneficiaries)	1.0	1.1	0.7	0.9	0.9
Ratio of proportion of children under 15 years of age (beneficiaries:non-beneficiaries)	1.6	2.1	0.6	1.0	1.3
Ratio of proportion of people with disabilities (beneficiaries:non-beneficiaries)	1.2	0.9	2.5	N/A	0.8
Ratio of proportion of older people (beneficiaries:non-beneficiaries)	0.2	0.2	N/A	2.2	0.5
Ratio of proportion of people directly affected by violence (beneficiaries:non-beneficiaries)	1.2	1.3	1.3	1.6	1.4

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table 5.3 indicates that women are evenly distributed across all the various selection methods, just as they are in society more broadly, making up 50 per cent of the total population. None of the selected targeting eligibility criteria are more likely than any other to select women among the beneficiary population (the ratios are all equal to one). Women of peak reproductive age are more likely to be in households containing children under five years of age, but only very marginally. Women of peak reproductive age are slightly less likely to be in households containing people with disabilities or older people, as well as in the bottom 20 per cent of the PMT distribution.[60]

Meanwhile, as would be expected, children under 15 years of age are much more likely to be in households containing children under two or five, so targeting those groups is more likely to indirectly benefit children of older ages as well. Given children are more likely to be poor, the PMT selection method is also slightly more likely to indirectly select children under 15. There is significant overlap between older people and people with disabilities,[61] so those two selection methods are much more likely to select each other indirectly than the other eligibility criteria.[62] Finally, all selection methods are slightly more likely to select people directly affected by violence and people with disabilities, with the PMT performing best in this regard (likely driven by the relationship between violence and poverty discussed in section 4).[63]

[60] The proportion of women falling into the bottom one or two consumption quintiles is no different from the national averages in all four GHS waves.
[61] Across all survey waves, prevalence of disability is 4 per cent among non-older people and 26 per cent among older people.
[62] This presumes perfect implementation (i.e. no implementation errors), which is highly unlikely in practice.
[63] One potential characteristic that may influence or determine vulnerability for particular population groups is ethnicity. As particular ethnic groups are aften geographically concentrated, geographic targeting can sometimes help to ensure such groups are covered. Other means of ensuring coverage of excluded, marginalised, or oppressed ethnic groups can include explicit targeting of such groups, though we do not analyse this dimension in this paper. Distribution of wealth and resources along ethnic lines is very often a highly politicised and contentious issue, meaning that explicit targeting of such groups may not be politically feasible.

5.2 Disaggregating targeting performance by geographic location

The results presented in Table 5.1 and Table 5.2 above show the performance of the selected eligibility criteria if implemented nationally across the whole population. However, given the distribution of welfare across the country, it is reasonable to expect performance to differ depending on geographic location; for example, in urban vs rural locations, or in different regions of the country. Below we look at a couple of geographic disaggregations to consider how adding a geographic element to the targeting criteria affects targeting performance.

Looking at how the selected targeting approaches perform in urban areas, we see that targeting errors of inclusion and exclusion are generally much higher than at the national level, reflecting the fact that much fewer urban dwellers are in the target population of the bottom national consumption quintile: around 6 per cent of the urban population tend to be in the bottom national consumption quintile, compared to around 28 per cent of the rural population. At the same time, the PMT selection method performs significantly better at identifying the bottom 20 per cent in urban areas compared with nationally (the ratio of poverty rates between beneficiaries and non-beneficiaries is 3.7 in urban areas, compared to 2.7 at the national level). This reflects the fact that the welfare distribution is less flat in urban areas compared to rural areas (see Figure A.4), making it slightly easier for the PMT to distinguish between poor and non-poor households. The ability of any of the selection methods to identify food-insecure households in urban areas is the same or worse than at the national level for all selection methods except the PMT, which performs considerably better (1.4 compared to 1.1 at the national level). There is little discernible difference in the ability of any of the selection methods to identify multidimensionally poor people in urban areas; though, again, PMT does marginally better in this regard.

In rural areas, by contrast, inclusion and exclusion errors across all selection methods tend to be the same or marginally lower than at the national level, reflecting the higher share of the target population living in rural areas compared to urban areas. At the same time, due to the flatter welfare distribution in rural areas, the PMT performs slightly less well at selecting households living in extreme poverty. All selection methods perform marginally better in rural areas than at the national level when it comes to identifying those vulnerable to food insecurity, with methods for selecting older people and people with disabilities performing best in this regard. Most selection methods perform little better than random with regard to identifying multidimensionally poor households, with the slight exception of the selection method for older people, which improves its ratio from 1.1 at the national level to 1.2 in rural areas.

Finally, looking at targeting performance in the zones comprising our analysis groups, we see that adding a geographic element to the targeting approach by zone can make a difference. If we take the North East zone as an example, which comprises some of the poorest and most conflict-affected states in the country (see Figure 3.1 and Table 4.1), we see that coverage of the target population increases under the PMT selection method to 67 per cent, compared to 54 per cent nationally. This difference in performance is reflected in the inclusion and exclusion errors observed under each targeting method. Inclusion errors tend to be the same or marginally lower for the categorical selection methods, and marginally higher for the PMT, and the same is true for exclusion errors. The biggest difference in performance relates to the PMT, which has higher inclusion errors and lower exclusion errors on account of there being a generally higher prevalence of people in the bottom national consumption quintile, and because it is harder for the PMT to distinguish between that group and those in higher consumption quintiles in that context.

These differences, both to the national-level performance and across targeting mechanisms, reflect the higher levels of poverty generally in the North East of the country, as well as the condition and distribution of particular population groups in relation to welfare within those states. For example, the fact that inclusion and exclusion errors are lower in the North East compared to nationally for the older person eligibility criteria reflects a situation in which, in 2012/13, low welfare (including both headcount rate and the welfare gap) among older people in the North East actually exceeded that among the non-older people, whereas at national level in those years older people tended on average to be less poor than the non-older people. The ability to target food-insecure households is also generally improved (ratios of food insecure between beneficiaries and non-beneficiaries are markedly higher than at national level for all selection criteria except older people), while the ability to target multidimensionally poor people is marginally improved.

Other zones among our analysis groups demonstrate different levels of performance across the different targeting approaches in relation to how they perform at national level, reflecting the varied and nuanced welfare distributions and dynamics among the different population groups in those places. Here, our task is not to rehearse the myriad differences, but simply to make the point, by way of the above example, that geographic targeting can be a determinant of targeting performance, depending on the metric being used and the underlying characteristics of the targeted population in question.

Detailed measures of targeting performance for urban and rural areas, as well as geographic disaggregation based on our analysis groups, are given in Tables A.3 to Table A.8.

5.3 CBT

Although CBT is a common approach to targeting social assistance programmes, we cannot replicate how CBT would perform using national survey data. However, studies from the region and elsewhere (Schnitzer and Stoeffler 2021; Silva-Leander and Merttens 2016; OPM and IDS 2011) indicate that CBT is likely to incorporate similar levels of inclusion and exclusion errors as formula-based targeting methods. Over nine programmes implemented across the Sahel region, Schnitzer and Stoeffler (2021) find that while PMT-based approaches tend to perform better in reaching the poorest households (based on per capita consumption), they differ little from CBT, or a random or universal allocation of benefits, when distances to poverty lines are considered. Moreover (and mirroring the findings presented above), when aiming to identify food-insecure households, most PMT and CBT targeting schemes perform no better than random allocation of benefits.

Studies from elsewhere (namely, of the Hunger Safety Net Programme in Kenya) also show that while CBT in that context tended to perform better at identifying food-insecure and multidimensionally poor populations compared to PMT, which did better at identifying the monetarily poor population, CBT also tended to shift the beneficiary population up the welfare distribution (Silva-Leander and Merttens 2016). While earlier studies suggested that, in certain sub-national contexts, this may at least in part be down to capture of the CBT process by local elites (OPM and IDS 2011),[64] evidence from Niger indicates that this result may simply reflect the efforts of the community to spread resources as evenly as possible among the population following the logic of reciprocal support mechanisms in contexts of highly uniform poverty rates. As one beneficiary put it:

> It is a good thing to share the money with everyone… because today it is you who benefit, but tomorrow it may be your neighbour… Therefore if you have shared previously, your neighbours will also think of you when it is their turn.
> (Watson 2016, cited in Olivier de Sardan *et al*. 2013: 56).

While it may be expected that the participatory nature of CBT would render it comparatively legitimate as a targeting approach, whereas formula-based methods may be perceived as lacking transparency, evidence from the region and elsewhere in sub-Saharan Africa suggests that formula-based or categorical eligibility criteria may also garner high levels of legitimacy, perhaps even more so than CBT. For example, in Niger Premand and Schnitzer (2018) found that local populations considered formula-based methods (PMT and a food security index) to be more legitimate than CBT due to perceived manipulation by CBT committee members and information imperfections affecting the implementation of CBT. In Kenya, however, both formula-based (dependency ratio) and categorical eligibility criteria (older people) were considered fair due to the transparency of the selection criteria and because they could not be manipulated by local actors (OPM and IDS 2011).[65]

[64] This implication was only present in one of the four districts studied.

[65] However, both beneficiaries and non-beneficiaries of the programme found the dependency ratio more difficult to comprehend, with fewer respondents feeling they had received an explanation of how it worked compared to the other two targeting approaches being assessed (CBT and pension). At least in part, implementing teams intended this lack of clarity, in a bid to prevent households gaming the system (OPM and IDS 2011: 49).

5.4 Key conclusions from targeting simulations

A context of low welfare and high vulnerability among the majority of the population means that no single targeting criterion is especially good at selecting the population living in 'extreme poverty' (defined as those in the bottom national consumption quintile). All simulated targeting approaches result in large inclusion and exclusion errors. The PMT performs relatively well in this regard.

No single targeting mechanism is especially good at identifying food-insecure people,[66] just as no single targeting mechanism is especially good at identifying multidimensionally poor people.

The context of low welfare and high vulnerability across the population poses two inherent challenges for poverty targeting. The first is that it will likely be difficult to accurately distinguish between poor and non-poor households at any given moment in time using proxy means testing. The second is that, because households that are non-poor in one moment will often find themselves poor in the next (and vice-versa), without frequent retargeting it is difficult to justify selecting one set of poor households in one moment knowing you will be excluding a similar set in the next.

Adding a geographic component to the targeting criteria can make a difference to targeting performance, but this is dependent on the metric being used and the underlying characteristics of the targeted population in question. As with all other targeting criteria, there are important equity issues and much devil in the detail when implementing geographic targeting criteria.

Clear and viable policy objectives are vital to appropriately measure targeting performance. However, even where these are present, a number of ethical considerations still need to be grappled with. These include the distributional effect of policy choices (e.g. providing a flat rate benefit to households of different sizes), as well as equality of treatment of target populations (e.g. when geographic targeting is used). These ethical considerations have vital implications for the actual and perceived legitimacy of any given targeting approach.

There is no *de facto* advantage to any given targeting approach in terms of legitimacy in the eyes of the targeted population. Most important from the community perspective is the degree to which selected targeting approaches tally with informal redistribution mechanisms, as well as the accepted understanding of the distribution of need. The limited evidence available for Nigeria suggests that political influence over existing targeting processes and outcomes is a major concern.

[66] Similar results have been found elsewhere (e.g. Silva-Leander and Merttens 2016; OPM and IDS 2011; Mertens *et al.* 2023). The fact that, according to the GHS, food insecurity is not highly correlated with poverty, geographic location (urban/rural), or zone in Nigeria, indicates a complex set of factors that determine food insecurity. Another dimension influencing the results found here are the specific measures used to define food insecurity, which in this case are survey questions asked to households in different ways depending on the recall period (past seven days and past 12 months). Other studies find similar results in terms of different targeting mechanisms (e.g. CBT and PMT) struggling to accurately identify food-insecure households, even using indicators of more structural food insecurity such as stunting. Further research is thus required to understand what lies behind these findings.

6. Operational context

Beyond policy objectives, the operating environment necessarily conditions the choice of targeting mechanism. What sort of targeting approach is socially acceptable, politically feasible, and operationally plausible?

As we saw in section 3.3, the targeting of the social assistance policy response to the Boko Haram insurgency and herder-farmer conflict has been characterised by a variety of approaches, including approaches that combine geographic targeting using national data on poverty (e.g. via the NSR) with household targeting using community-based approaches alongside formula-based approaches. A significant share of the responses have been directed at IDPs.

Several large government-led programmes used the NSR for targeting, which combined geographic targeting using poverty data to identify vulnerable LGAs with CBT plus PMT verification to identify poor and vulnerable households. Meanwhile, two large programmes implemented by the World Food Programme – one providing cash through mobile money and the other humanitarian food aid – used what they called 'vulnerability-based targeting', a form of CBT (see Table A.1).

6.1 Politics, perceptions and attitudes

As discussed in section 5.3, from the perspective of the programme designers and implementers, one of the strengths of CBT can be that it helps ensure ownership and transparency, as well as buy-in from local leadership. However, from the perspective of communities themselves, the picture may be more nuanced. In other contexts, it has been found that who was included and excluded in some cases became a site of contention, with indications that communities redistributed the received resources as they saw fit where the targeting did not match well with their own conceptions of how such support should be allocated (Olivier de Sardan *et al*. 2013).

In Nigeria, studies have found that local politics (including the influence of community leaders) can influence the targeting of social assistance to a greater or lesser extent, making it difficult to detach social assistance programming from politics, and directly impacting the methods and processes used for delivering assistance. This in turn can impact the confidence both beneficiaries and non-beneficiaries have in a programme, as well as the perceived robustness of the selection criteria and how those are implemented (Ochogwu 2024).

We could not find much information on the performance of the targeting approaches used in Nigeria in response to the conflicts considered in this paper, nor on perceptions of how communities and beneficiaries themselves experienced them.[67] But other studies reveal ambiguity with regard to community perceptions of and attitudes towards targeting. This is because, despite the benefits of much needed social assistance to households and communities, the plethora of actors and the different 'rules of the game' in each case, alongside differences in the type and value of support being given, can combine to create both confusion and opportunities for manipulation of the system by local actors and communities (Olivier de Sardan *et al*. 2013). At least in part, this may be because targeting processes and procedures might run counter to existing cultures of reciprocal support that prescribe communal sharing of external benefits. Not adhering to such cultures can even pose a threat to social cohesion (Olivier de Sardan 2014).

[67] Ochogwu (2024) does discuss perceptions and attitudes to social assistance more broadly, however, finding receipt of social assistance can sustain or strengthen people's belief and trust in the state, helping to build a positive image of the state as a responsive and responsible agency in the affairs of its citizens. The flipside of this, however, is the uncertainty, doubt, and distrust that can be engendered when social assistance is perceived to be unduly influenced by political machinations, and/or when people are excluded from social assistance, which can create feelings of neglect, negatively impacting perceptions of government performance.

For example, geographic targeting for selection of communities is sometimes seen as either a matter of chance, or a function of influence of chiefs or elected representatives. In Nigeria, the entanglement of politics with social assistance provision can muddy perceptions, as happened in Adamawa state, where allocation of response efforts to the Boko Haram insurgency in specific areas prompted complaints from residents of other areas advocating for a more inclusive approach across the entire state (Ochogwu 2024). From the community perspective, little in terms of socioeconomic conditions may separate a village or LGA that has been selected from one that has not. Moreover, the selection of beneficiary households can also appear arbitrary, arising from an attempt to distinguish between 'vulnerable' and 'very vulnerable' in contexts where living standards and consumption patterns are in practice quite similar in the majority of cases, despite notional and/or actual economic inequalities. As a result, once the targeting agents have departed, there is sometimes a general redistribution or pooling of received resources among the population (Olivier de Sardan *et al*. 2013).[68]

Households and communities may exploit ambiguities in the definition of 'household'; for example, between the 'immediate' and extended family group, inflating the numbers of household members when the amount of cash depends on household size, or splitting the household into smaller units when the cash is provided per household independent of size.

Similarly, there can also be redistribution within households. While providers of assistance are sometimes inclined to designate women as the named recipients of cash, wives frequently give the money to their husbands. This is particularly the case with seasonal cash transfers if men are customarily responsible for providing for household food. The situation has been found to be slightly different for longer-term cash transfer support; for example, as provided through a World Bank-supported government safety net programme in Niger, in which women were encouraged to invest in collective savings and loans groups (Olivier de Sardan *et al*. 2013; Olivier de Sardan 2014). In polygamous households, husbands normally designate the first wife to be the recipient of cash transfers, though she can designate a co-wife. A programme's designation of women as recipients can confer a 'collective' character on the benefit, and thus moderate the risk of the husband using it for personal purposes; but when women occasionally try to hang on to money, it can also lead to instances of violence (Olivier de Sardan *et al*. 2013: 37; see also Otulana *et al*. (2016) and Ochogwu 2024).

We do not have any robust, independent information as to the performance of any of the targeting approaches used in Nigeria in terms of selecting the poorest or most food-insecure populations in practice. But given the context of widespread chronic poverty, not to mention the indicative performance of a variety of different targeting approaches modelled using GHS data, including a formula-based PMT (see section 5), it is not a strong assumption that errors of exclusion and inclusion were significant. However, given the scale of the support – nationally, for example, less than one in seven of the population had received assistance in the 12 months prior to 2018/19 (although this share was somewhat higher in the most conflict-affected zones of the North East and North West) – of clear importance is the degree to which selected targeting approaches tally with both communal coping mechanisms of redistribution, and accepted understanding of geographic distribution of need at both national and subnational levels. The limited evidence we have from Nigeria suggests that positive perceptions lean towards those organisations that deliver targeting in a transparent manner, free from political interference (Ochogwu 2024).

[68] This chimes with experience elsewhere; for example, in Kenya, where studies have shown that beneficiary households are minded to use some of their transfers to support their neighbours based on the understanding that those neighbours will then be minded to support them in turn when needed. See Otulana *et al.* (2016).

6.2 Infrastructure

Alongside the prevailing culture, perceptions, and attitudes towards social assistance, delivery systems rely on underpinning infrastructure such as roads, electricity, communications infrastructure, financial services infrastructure, and civil registration systems, alongside human capital infrastructure as embodied in the skill levels of implementing agents and the educational levels of the population.

In the northern parts of Nigeria with which we are here most concerned, these underpinning infrastructures are not highly developed. For example, according to the GHS, just over half (56 per cent) of the population of the northern zones were literate in 2018/19, compared to 77 per cent in the southern zones. Similarly, in 2018/19, just under two-thirds (65 per cent) of the population in the north resided in households that owned at least one mobile phone (of which, just one-fifth were smartphones), compared to almost nine out of ten people (87 per cent) in the south (of which over one-third were smartphones). This same pattern is repeated with regard to access to formal financial services: in the north, around one-third (36 per cent) of the population resided in households that used any kind of formal financial services in 2018/19, compared to almost two-thirds (63 per cent) in the south. And while the trend appears to be positive among the northern population with regard to this last indicator, they still lag behind their southern peers.

Furthermore, prospects for the future in the north are impeded by the fact that, in 2018/19, around one in eight school-aged children (12 per cent) were not attending school, compared to 5 per cent in the south, with this figure likely to be a significant underestimate given the security issues that compromised the GHS sample frame in wave 4; the trend in out-of-school children indeed rises across previous waves, from 5 per cent in 2010/11 to 7 per cent in 2012/13, 8 per cent in 2015/16, and 12 per cent in 2018/19, very plausibly directly influenced by the growing insecurity situation in many northern states.

Civil registrations systems

Another crucial dimension of the operating context is given by the civil registrations system. Identity is a public good, necessary for the functioning of modern societies and social development. For a government or firm to offer services to people, it needs to know who is who. Without a reliable way of proving one's identity, exercising basic rights, claiming entitlements, accessing government services, and conducting many daily activities can be hampered. Furthermore, the advent of new technologies, including mobile phones, the internet, social media, and digital applications, usually requires an electronic or digital form of identity. Identity can be conceived of as falling into one of two categories: a foundational or national identity; and a functional or use-specific identity. A foundational identity explains 'who you are' and a functional identity explains 'whether you are eligible for a specific service' (World Bank 2016).

With regard to civil registrations, the first three waves of GHS data do not contain information on the proportion of the population with civil registration documentation, such as a national identity document or birth certificate. The fourth wave does ask whether household members have a government-approved birth certificate, but the skip structure associated with this question has an error and around 82 per cent of observations have missing data.[69] Just 6 per cent of respondents reported having a birth certificate.

Nevertheless, analysis from elsewhere (*ibid*.) finds that Nigeria has long wrestled with the challenge of establishing robust civil registrations systems, including national identities. The current system is highly fragmented, with around 13 or more identity programmes run by different government agencies. Most identity systems are not interlinked, and most identity programmes are geared towards issuing an identity card. Citizens thus have to carry multiple identity cards for different uses. No single identity registry has reached full scale.

[69] The skip structure refers to the explicit instructions provided in a survey instrument guiding the enumerator to ask or not ask given questions depending on the answers to previous questions.

As the lead government agency, the National Identity Management Commission offers a foundational identity. Between its establishment in 2007 and 2016, the commission registered just 3.5 per cent of the population. Meanwhile, functional identities in Nigeria have grown since 2007, with the voter registry, operated by the Independent National Election Commission, being the largest, with 69 million entries. A banker registry, partly operated by the Central Bank of Nigeria, is newer, and has 6.75 million entries. The NSR (see section 3.3) is another, and includes information on around 10.1 million households (around 42.7 million individuals). In 2016, around 40 per cent of births were registered in the country. The government is nominally committed to improving the civil registration and national identity system, including linking across different registries to improve the integrity of the system overall, with the policy and legislative environment broadly amenable to this endeavour. However, the situation is far from ideal as things stand, with much work required before there is anything like comprehensive coverage by necessary forms of identification.

Road network

Beyond access to identities, and crucial social and other services, effective targeting also depends upon physical access to and for communities. Even more broadly, connectivity by road is an essential part of the enabling environment for social and economic development; in rural areas, in particular, such accessibility is crucial to reducing poverty and promoting inclusive economic growth (World Bank 2019). Accordingly, a Rural Access Index (RAI) has been developed to measure the proportion of people who have access to an all-season road within an approximate walking distance of 2km, based on a common understanding that the 2km threshold is a reasonable extent for people's normal economic and social purposes (World Bank 2019).

RAI data for Nigeria indicates that (despite challenges with the data),[70] only about 15 per cent of the federal road network is estimated to be in good to fair condition, with only 10–15 per cent of that being paved. Out of the country's 160,000km of state and rural roads, less than 10–15 per cent are likely to be in good to fair condition. As a result, the RAI for Nigeria is estimated at 25.5 per cent, implying that around 93 million rural people do not have good access to the road network. Furthermore, there is significant variation in rural accessibility across states: southern states tend to have relatively high accessibility, whereas northern states have relatively low accessibility. The North East zone, in particular, is lagging behind: the RAI is estimated to be 10.5 per cent in Taraba, 12.8 per cent in Adamawa, and 13.7 per cent in Yobe. These conditions of poor underpinning infrastructure only add to the challenge of targeting social assistance across the country, including in both routine and emergency situations (*ibid*.).

[70] According to national statistics, the available road network data that was collected in 2014 comprises only 107,794km of roads, which accounts for about half of the total road network and lacks many rural roads (World Bank 2019).

7. Conclusions

Nigeria faces multiple, prolonged security challenges, with the Boko Haram insurgency in the North East and conflicts between nomadic pastoralists and farming communities in the North Central and North West zones accounting for the majority of fatalities over the past decade or more. While each of the different conflicts has its own particular logic and context, a number of common structural dynamics cut across and help shape them. These include social, economic, cultural, political, and environmental drivers.

Despite only a small proportion of the population being 'directly' affected by violence, the rest of the population is still 'indirectly' affected. Evidence shows that both violence and climate shocks negatively impact welfare, which in turn can contribute to the causes of violence. Heavily violence-affected areas and populations tend to have lower welfare and a deeper welfare gap.

As a result of these conditions, the national poverty rate over the past decade or more has remained basically static, meaning that, with population growth, absolute numbers of poor people have in fact grown. Covid-19, the current cost of living crisis, and increased violence across the country indicate that poverty rates are likely to have risen in the years since 2019. Moreover, not only has the rate of poverty remained unchanged, so has the basic shape of the welfare distribution. Nigeria is a highly unequal society, with a large share of the population consuming relatively little, alongside a very small proportion consuming much higher amounts. Populations in northern states face lower levels of human capital and generally poorer living conditions on average than populations in the south, with these disparities not improving over time.

A great many households are highly vulnerable to numerous and varied types of shock, in the continued face of which they increasingly have to resort to negative coping strategies. Over time, this situation appears to be diminishing not only their individual resilience, but the resilience of whole communities. Price shocks have negatively impacted food security across the whole population in recent years.

Social protection is one important policy lever to help mitigate these conditions, but it is hampered by low levels of coverage and adequacy. Much assistance is humanitarian in nature, though efforts are being made to construct some foundational pieces of a safety net system at least. The social assistance response to violence in the country is primarily focused on the Boko Haram insurgency, and in areas affected by the insurgency is heavily characterised by humanitarian aid. Response to the herder-farmer conflict is more muted, but in areas affected by that conflict the key interventions are slightly more development oriented, being focused on school feeding. The kind of targeting approaches most commonly used by social assistance actors include CBT, vulnerability ranking, and data-driven, formula-based approaches such as PMTs (e.g. using the NSR), including combinations of these.

Due to the depth and scale of need, plus the complexity of delivering assistance being greater than the government's response capacity, social assistance is largely delivered by humanitarian actors. Coordination between the government and these actors, and across these actors themselves, is extremely challenging. This challenge is exacerbated by the fact that Nigeria is a decentralised state with a three-tier structure comprising federal, state, and local governments. While the federal level is responsible for designing policy, subnational governments have great autonomy to interpret, finance, and implement those policies. With their variation in size, capacity, and resources, states and LGAs differ markedly in their commitment and ability to deliver social protection programmes. The limited available evidence on perceptions of social assistance targeting suggests that political influence over targeting processes and outcomes is a major concern.

In addition, especially in the north of the country and among the poorest states, the underpinning infrastructure necessary to target and deliver social assistance programmes is weak. National identity and civil registration systems are incomprehensive and fragmented, and access to essential infrastructure such as electricity, roads, communications, and financial services, lags behind those in the south.

Social assistance needs to be coordinated with other policy domains

Together, the above-described conditions indicate the size and complexity of the task policymakers and development partners face if the objective is to address welfare dynamics and reduce poverty and inequality in the country, and thereby support the reduction of violence and insecurity. In the current context, social assistance by itself is unlikely to achieve anything other than a purely protective function. In large part this is because structural problems with the labour market (i.e. a lack of adequate quality employment) mean that most poor Nigerians cannot translate their labour into an escape from poverty. This challenge is made worse by lack of access to adequate social and other services, which directly hinders human capital development.

To become transformative in these circumstances, social assistance policy needs to work in tandem with other key policy domains, including health, education, social services, labour market and enterprise formalisation, agricultural and industrial policies, and infrastructure investment, all the way up to peacebuilding and governance reform. In short, social assistance will only become transformative if apprehended under a broader and more coherent progressive political agenda.[71]

Implications for targeting social assistance

Poverty targeting in these circumstances presents two inherent challenges. The first is that proxy-means testing of any kind will likely find it very difficult to accurately distinguish between poor and non-poor households at a given point in time. The second is that, because households' welfare trajectories are in constant flux, even if you could identify poor households in one moment they may be non-poor the next. Without frequent retargeting (which would likely be hard to sustain on a programme cost basis), it is thus difficult to provide an ethical justification for selecting one set of poor households at one point in time, in the full knowledge you will be excluding another set with those very same characteristics the next. As a result of these welfare dynamics, inclusion and exclusion errors tend to be high when trying to select poor households, no matter which targeting mechanism is adopted.

Accurately identifying the food-insecure population with any single targeting mechanism is even more challenging than trying to select poor people. This implies that it may well be more appropriate to geographically target food aid using food security surveillance systems and then provide that aid universally in targeted areas.

Adding a geographic element to the targeting approach can help reduce inclusion and exclusion errors, though it represents a compromise in terms of equity of treatment. For example, under a typical geographic targeting model prioritising, say, high-poverty areas, children living in extreme poverty in places with lower average poverty rates would not be treated the same as children living in extreme poverty in places with higher average poverty rates. This may be temporarily justified on the basis of necessity – prioritising the poorest population *groups* given resource constraints – but only if accompanied by a policy commitment to expand to less poor (i.e. all) areas as soon as fiscally possible.

While geographic targeting does present an ethical trade-off, it can still provide an ethically consistent proposition. For example, if the aim is to reduce child poverty, categorical targeting of children in poor areas will produce high inclusion and exclusion errors in terms of reaching the poor generally – many non-poor people will benefit while many poor people will not. But *all poor children in poor areas* will be covered, which would be fully in line with the given policy objective.

[71] Although the proposition of a broader and more coherent political agenda in Nigeria may sound unlikely (if not fanciful), the need for such a condition nevertheless tallies with actual experience across the continent. In their analysis of how to realise the full potential of social safety nets in Africa, Beegle, Coudouel and Monsalve (2018) argue that, in general, decisions to expand social safety nets have been made only when the dynamics of domestic politics generate key national stakeholders' commitment, and then solely within the context of broader government strategies, even when those programmes are largely financed by development partners (*ibid.*: 20).

Another important consideration in the application of geographic targeting is the degree to which the data upon which the prioritisation is based (e.g. national poverty or food security estimates) is credible to key stakeholders. Where this data is contested, it will be more difficult to resolve disputes and tensions over the allocation of resources at national or subnational levels, which will risk delaying the speed of response and/or undermining political support for the intervention. Where data is not in dispute, there is much devil in the detail about how resources are allocated, especially at lower-level administrative units where estimates of needs are typically not as robust as at higher levels. Strong participatory governance structures are required in these instances to ensure that the allocation of resources is fair and accepted by all key stakeholders.

Targeting criteria should be appropriately aligned to specific policy objectives

There are important differences between routine social assistance and emergency response. Social assistance is part of the tax settlement between the state and its citizens and as such is most typically and appropriately directed towards mitigating poverty and risks and vulnerabilities associated with life cycle events such as childhood, old age, and physical and mental disability.[72] Emergency response, on the other hand, aims to address immediate extreme and/or life-threatening risks to health and wellbeing such as severe food insecurity and physical threats to housing, health, and livelihoods. Nevertheless, there are overlaps between the two policy domains, especially in contexts such as Nigeria where chronic vulnerability to shocks such as violence and conflict frequently causes protracted exposure to emergency situations.

In these circumstances, social assistance policies and emergency response policies need to be clearly delineated, while playing coordinated and complementary roles. The targeting criteria for any given social assistance or emergency response policy need to be appropriately aligned with clearly specified policy objectives. For example, if the primary objective of the policy is to prevent or mitigate malnutrition, a selection method that targets young children (e.g. under the age of two or five years) would be more appropriate than targeting poor households (acknowledging that tackling malnutrition requires more than simply cash or food support; for example, requiring behaviour change alongside improved water, sanitation, and hygiene). ‘Soft’ or ‘indirect’ conditioning in the form of explicit or implicit messaging, such as the name of the programme, can help influence the use of transfers for the desired objectives. For instance, naming such a policy a ‘child nutrition grant’ signals an implicit contract between provider and recipient as to how the support is expected to be used (Pellerano and Barca 2013).

A particular consideration that may be important in the selection of targeting criteria for emergency response is the speed at which it can be delivered. As seen from the experience of Niger in response to severe drought conditions in 2012 (see Merttens *et al*. 2023), implementing targeting can take time and thereby delay the response. Selection methods that require relatively heavy data collection, or lengthy rounds of community verification, will take more time than universal targeting or methods based on simple observable characteristics such as age of beneficiary. That being said, for some age groups or especially vulnerable population groups, such as those living with disabilities, verifying status can be more or less complex. When civil registration systems are not functioning well, as is the case in Nigeria, verifying age and citizenship can be challenging, especially – typically – for older people. Provision of support may be required to aid these groups to obtain relevant documentation, or local-level vetting structures may need to be established. Similarly, if robust disability assessment mechanisms are not in place, equitable and appropriate treatment of people with disabilities will be a challenge.

[72] To support the efficient functioning of the labour market and mitigate risks associated with work, such as unemployment and occupational health, accident, and injury, additional elements of social protection are required, including social insurance and active labour market policies.

Communities need to clearly understand the targeting criteria and their rationale

Targeting approaches are more likely to be perceived as legitimate when the policy objectives of the support are clear and well understood by the population, and the rationale for the eligibility criteria well aligned with those objectives. Ensuring these conditions reduces the scope for political interference. The population needs to be well primed on the purposes of the policy through accessible consultations, with the link between the policy objectives and the targeting criteria clearly explained. Evidence from multiple sources cited in this paper (see Merttens *et al*. 2016, 2023; and Premand and Schnitzer 2018) indicates that communities are more willing to accept targeting approaches as legitimate the better they understand the programme objectives and the rationale underpinning the selection method in relation to those. In the absence of such understanding, tensions between communities and community members can arise which undermine political support for the programme (Beegle, Coudouel and Monsalve 2018). Moreover, if targeted communities do not understand or do not agree with the selected targeting approach, they may redistribute social assistance resources in a manner they see fit, thereby negating the cost and effort of implementing the targeting approach in the first place. To foster awareness and understanding about the programme objectives and targeting criteria, continuous and simultaneous communication is required via multiple channels, such as informed local officials, community meetings, radio and TV broadcasts, posters, leaflets, handbooks, and social media.

Developing underpinning infrastructure will facilitate more efficient targeting, and prevent fraud and manipulation

The underpinning infrastructure required to maximise the efficiency of targeting processes and minimise the degree to which these can be fraudulently manipulated extends across a diverse array of domains. In crisis contexts, early warning systems and national data on poverty and food security are essential to signal the likelihood and/or occurrence of shocks as early as possible, and provide credible information on the location of vulnerable populations. Functioning identity and civil registration systems, and interoperability between these and other information systems (e.g. those of public or private service providers), will reduce the cost of identifying actual and potential recipients of support, and help ensure support is not fraudulently captured. Similarly, telecommunications and financial services infrastructure can render registration and enrolment processes more efficient, as well as aid delivery of support. Such services are in turn underpinned by more fundamental infrastructure such as roads and electricity provision, which facilitate the functioning of crucial markets such as food. Lastly, the population at large needs to be able to understand and adjudge the policy being delivered, for which widespread education and literacy are essential.

Accounting for costs

Accounting for costs does not imply opting for the nominally cheapest approach. As Grosh *et al*. (2022: xx) put it in their comprehensive assessment of targeting in social assistance, 'implementation matters'. Delivering any given targeting mechanism requires a minimal level of service quality to ensure it is effectively and equitably implemented. This in turn requires operational capacity in the organisations involved in implementing it. Such capacity includes collecting and managing necessary data, as well as managing essential monitoring and grievance redress mechanisms. If such capacity is not extant, then it has to be built. The cost associated with achieving a minimal sustainable level of service delivery to ensure effective and equitable treatment needs to be accounted for, whatever the preferred targeting mechanism.

A certain amount of data will be required to be collected and managed to deliver any given targeting mechanism. For categorical approaches, such data includes key demographic information such as the number and age of some or all household members, which may require verifying against civil registration data (birth registrations, national identity documentation, etc.), while for a PMT a minimal set of variables is required to predict the welfare status of the household (e.g. information about the geographic location of the household, characteristics of household members, the quality of the physical dwelling and/or amenities, ownership of assets, etc.). For this reason, while the number of variables required for a PMT may vary – with recent efforts aiming to reduce data needs (see Ohlenburg *et al*. 2022) – they tend to require relatively more information than categorical approaches, and thus may be more costly in this regard.

The nature of the service to be delivered is also crucial when considering costs. When large-scale data collection is required (e.g. to populate a social registry), each additional variable to be gathered will increase the cost of the data collection exercise in proportion to the size of the population being surveyed. If demographic data needs to be checked against civil registration data, then robust verification processes will be required; it may even be necessary to support particular subgroups (such as older people or marginalised ethnic groups) to obtain relevant documentation (e.g. national identity certification).[73] What is crucial is not to avoid such costs, but to properly account for them in programme design and budgeting so as to ensure effective and equitable treatment of the population in need within the given budget envelope.

Adding questions to data collection tools adds more marginal costs the larger the coverage of the data collection exercise. But collecting and managing data (including managing access to that data), and maintaining sufficient monitoring and grievance redress mechanisms, require given levels of capacity whatever the selected targeting mechanism. These functions are crucial to delivering social assistance services in a fair and effective manner. Substandard quality of service delivery will risk undermining the ability of a programme to achieve its objectives because large targeting errors, or selected beneficiaries being unable to receive entitlements due to administrative barriers such as lack of documentation, will result in the intended target population being underserved.

[73] For example, as was required in Kenya for the Hunger Safety Net Programme Phase 2 and Uganda Social Assistance Grants for Empowerment under the Expanding Social Protection Programme Phase 2.

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Annexe A: Supplementary material

Table A.1: Selected examples of social assistance and humanitarian responses to the conflict crises

Response type	Actors involved	Timeframe	Response description	Coverage	Amount of support	Targeting approach
Response to Boko Haram insurgency						
Cash transfer	Government of Nigeria	2018–20	Targeted grant transfer to facilitate resettlement of IDPs via Youth Empowerment and Social Support Operations (YESSO)[74]	138,914 individuals from Borno, Adamawa, and Yobe residing in six north-eastern states.[75]	Four payments over 1 year: base transfer (30,000 naira); relocation grant for IDPs willing to return (20,000 naira); resettlement grant (100,000 naira); stabilisation grant (50,000 naira)[76]	IDPs identified using NSR and URB[77]
Public Works Programme	Government of Nigeria		Work available to individuals with low levels of education aged 18–35 years (or 18–50 in Borno and Adamawa via YESSO	242,632 individuals in Borno, Adamawa, and Yobe	7,500 naira per month based on 4 hours per day and 5 days per week for 6 months	Households identified using NSR and URB
Cash transfer	Government of Nigeria	August 2018	Scaling up National Cash Transfer Programme from May 2019 to support poor and vulnerable households	Unknown number of IDPs in Borno including three IDP camps; Adamawa state	5,000 naira per month (paid every 2 months)	Data from NSR used to target households
Cash transfer[78]	World Food Programme	2016	Monthly cash transfer for 6 months using mobile money or e-vouchers	345,277 people in Borno, Adamawa, and Yobe	17,000 naira per month	Vulnerability-based targeting
In-kind food assistance[79]	World Food Programme	–	Food assistance	720,512 people in Borno, Adamwa, and Yobe where markets are not functioning	Unknown	Vulnerability-based targeting

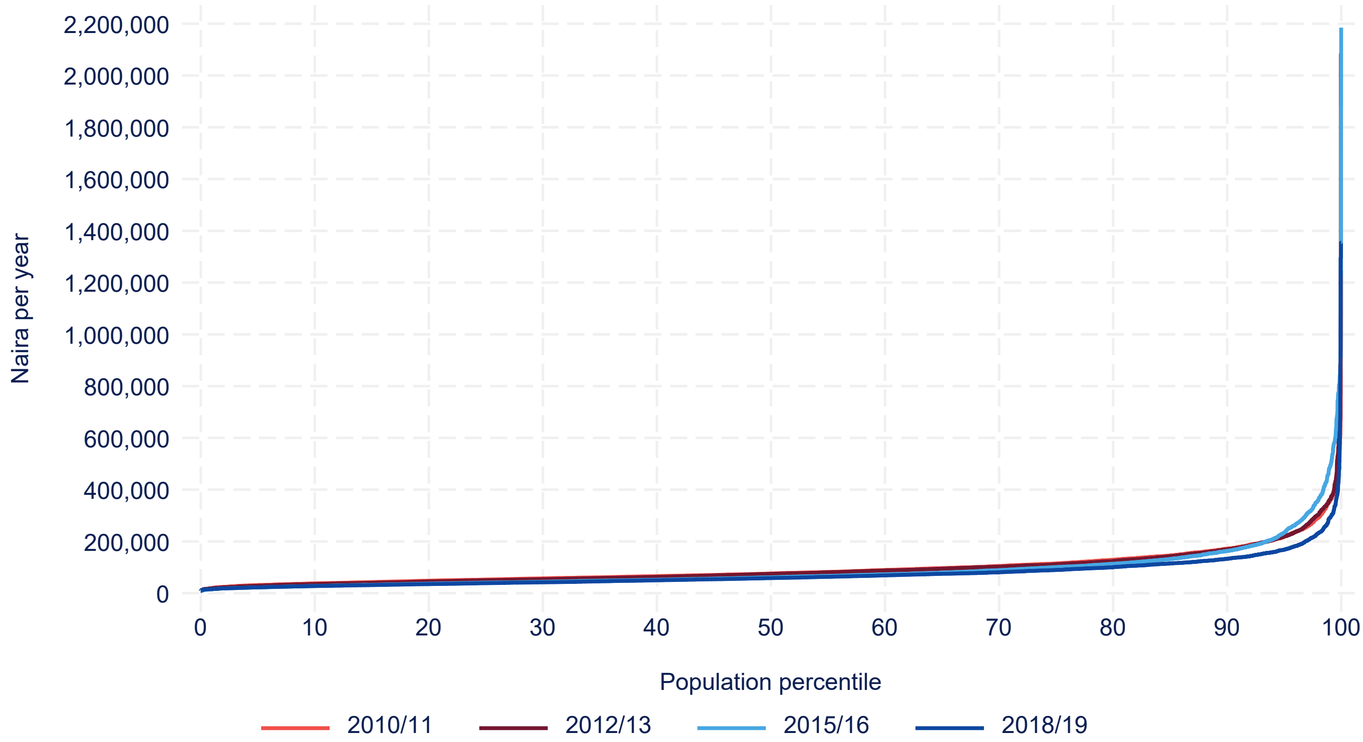
[74] YESSO is a national programme that aims to improve poor and vulnerable young people's access to employment opportunities in all participating states, and to provide targeted cash transfers to IDPs and other vulnerable people in the north-eastern states.
[75] Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe states.
[76] Only 220 IDPs were able to return to their communities during the project period due to safety concerns; therefore, most IDPs only accessed the first tranche.
[77] Yobe and Borno were only included in the NSR after 2019.
[78] Figures from August 2018 (WFP 2018).
[79] *Ibid.*

Response type	Actors involved	Timeframe	Response description	Coverage	Amount of support	Targeting approach
Response to Boko Haram insurgency						
Cash transfer and cash-for-work	Implemented by Action Contre la Faim, funded by the United Kingdom Foreign, Commonwealth & Development Office	Started April 2019	Scaling up nutrition in Yobe[80]	5,552 individuals receiving cash transfers and 2,400 participating in cash-for-work in Yobe	5,000 naira per month	Unknown
Food vouchers	Funded by the European Union	2018–20	Monthly food vouchers to pregnant and lactating mothers	3,600 individuals in Borno	Unknown	Unknown
Cash transfer	Funded by the European Union	2019	Conditional and unconditional cash transfers	26,875 households in Yobe	Unknown	Unknown
Cash transfer	Implemented by Save the Children, Action Contre la Faim, CRS and other NGOs; funded by the United States Agency for International Development	–	Monthly cash transfers to IDPs and vulnerable members of host communities	Action Contre la Faim: 4,500 beneficiaries in Yobe CRS: 37,241 individuals in Yobe	Between 2,552 naira and 3,532 naira per person per month	Unknown
Cash grant	Victims Support Fund	–	Women's economic programme targeted at victims of the insurgency; it is reaching women aged 18 years and above	Adamawa	50,000 naira to invest in a VSLA [village savings and loan association] for 1 year	CBT: implementing agency, village heads, and social welfare officers identify and select households
Cash transfer	Victims Support Fund	–	Orphans who are staying with extended families	Adamawa	10 monthly transfers of 14,000 naira (£31) per orphan residing in the household plus a top-up for other children residing in the household	CBT: implementing agency, village heads and social welfare officers identify and select households
Response to herder-farmer conflict						
Food distribution	State governments; National Emergency Management Agency; International Committee of the Red Cross; Victims Support Fund	–	Distribution of food to IDPs residing in official camps	Unknown	Assorted food items	IDP households residing in official camps for IDPs

Source: Authors' own. Information sources cited.

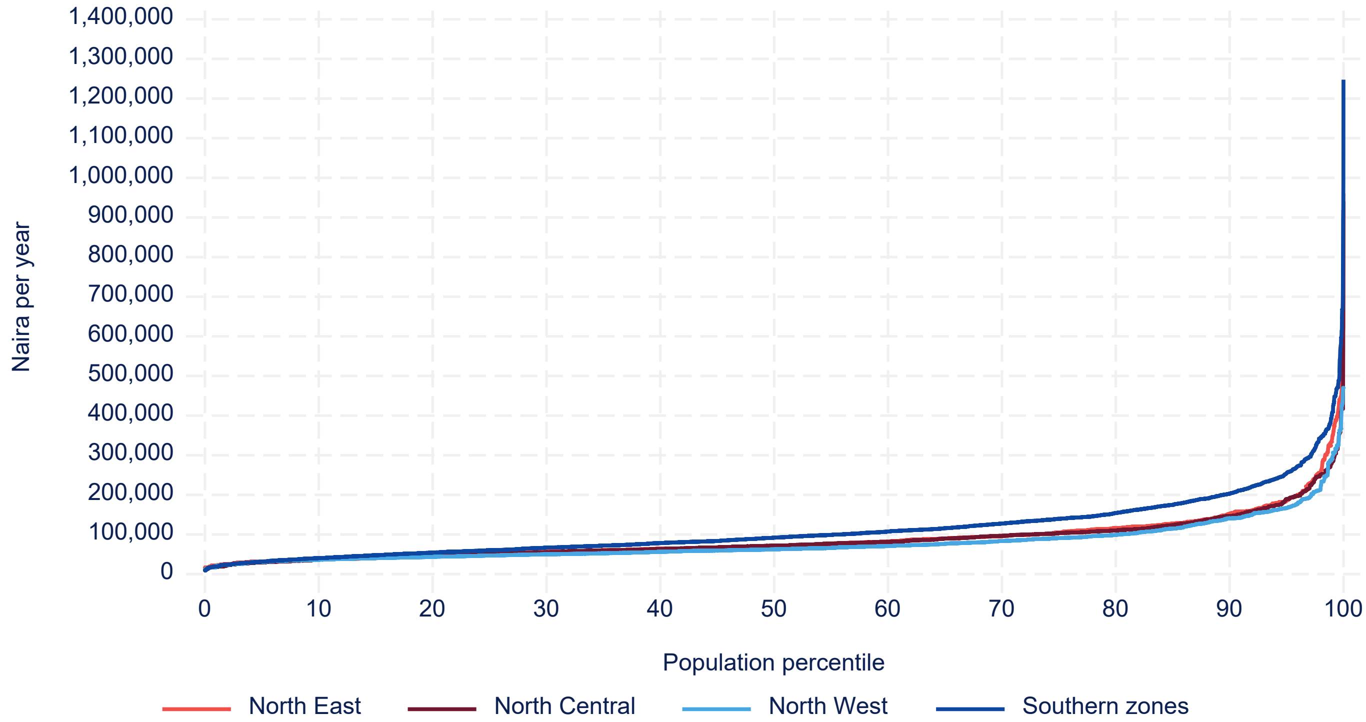
[80] This is an extension of the Integrated Nutrition Project (INP+), funded by the UK government's Department for International Development (DFID), which ended in March 2019.

Figure A.1: Per capita consumption expenditure distribution, by survey wave



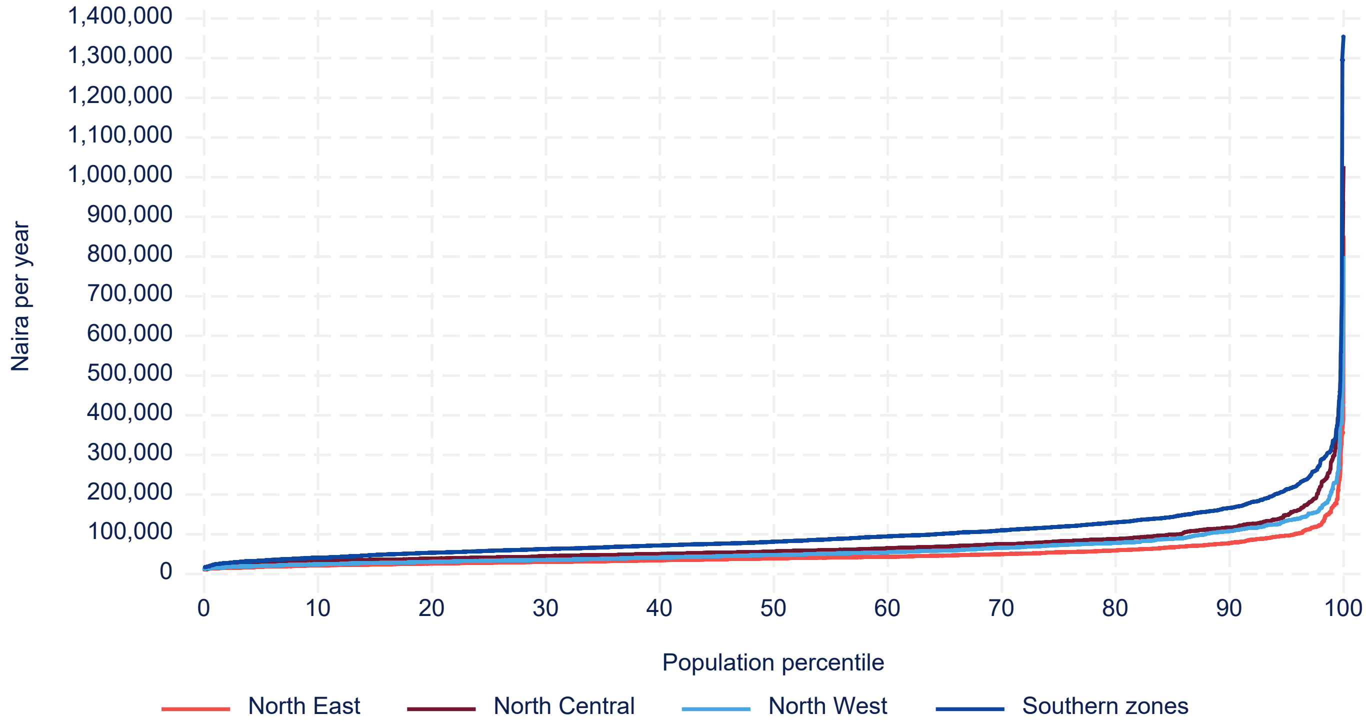
Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
Note: Six observations with annual per capita consumption of more than 4,000 naira have been dropped, out of 108,495 total observations.

Figure A.2: Per capita consumption expenditure distribution in wave 1 (2010/11), by zone



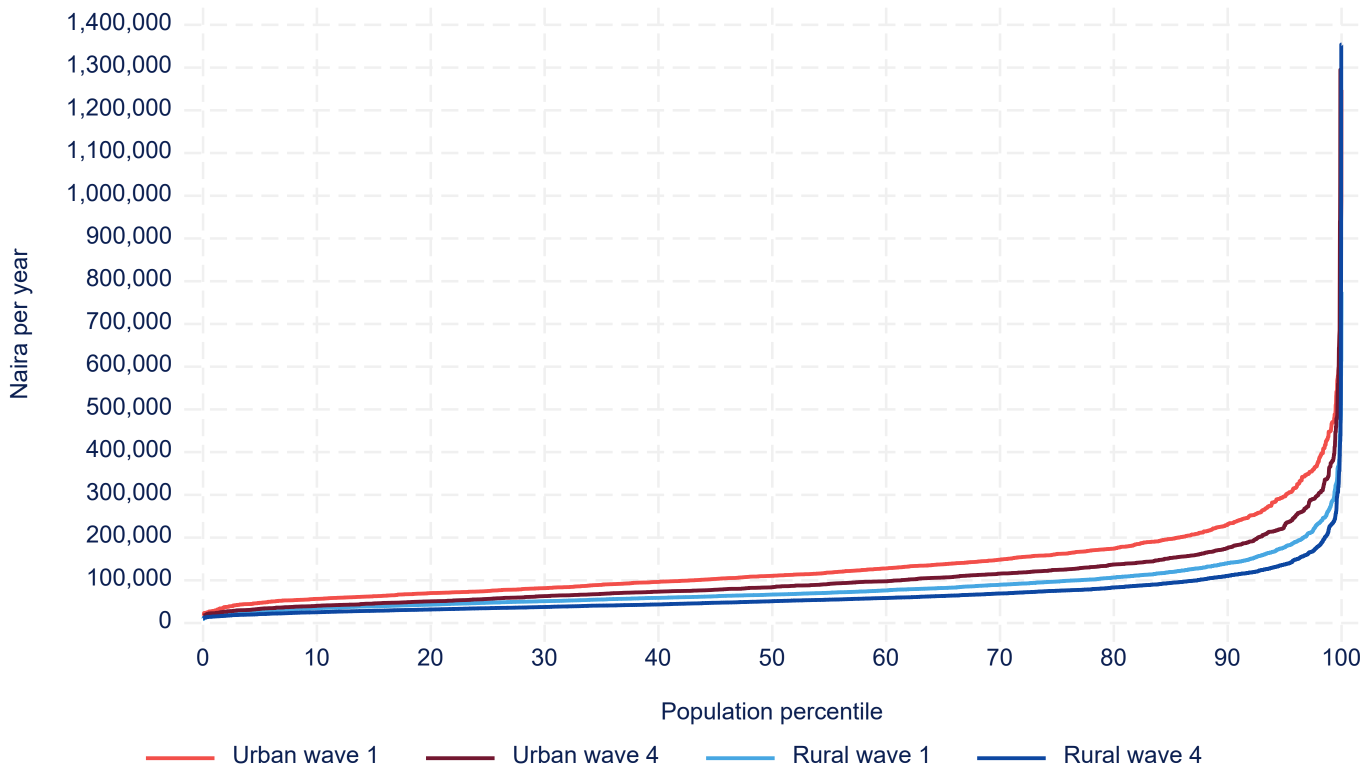
Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Figure A.3: Per capita consumption expenditure distribution in wave 4 (2018/19), by zone



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Figure A.4: Per capita consumption expenditure distribution in wave 1 (2010/11) and wave 4 (2018/19), by geographic sector (urban/rural)



Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Table A.2: Asset score for analysis groups, by survey wave

Analysis group	Indicator	Wave 1	Wave 2	Wave 3	Wave 4
National	Mean asset score	1.12	1.35	1.23	0.80
	Mean asset index	3.01	3.01	2.97	2.95
North East	Mean asset score	0.24	–0.20	–0.08	–0.61
	Mean asset index	2.50	2.27	2.34	2.33
North Central	Mean asset score	0.56	0.84	0.73	0.81
	Mean asset index	2.84	2.85	2.81	2.94
North West	Mean asset score	–0.19	–0.25	–0.31	–0.24
	Mean asset index	3.61	3.66	3.72	3.64
Southern zones	Mean asset score	2.24	2.74	2.77	2.20
	Mean asset index	3.61	3.66	3.72	3.64
Directly affected by violence	Mean asset score	0.38	0.77	0.29	0.06
	Mean asset index	2.77	2.80	2.57	2.67
Indirectly affected by violence	Mean asset score	1.16	1.41	1.31	0.90
	Mean asset index	3.02	3.03	3.00	2.98

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).

Table A.3: Performance of targeting approaches: urban areas

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	17	55	36	17	22
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	95	93	90	94	68
Exclusion error (% of individuals in target households who are not covered)	83	45	64	83	78
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:4	1:9	1:3	1:2	3:7
Ratio of food insecurity rates (beneficiaries:non-beneficiaries)	0:8	0:8	1:0	1:1	1:4
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	0:8	0:8	1:1	1:0	1:1

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.4: Performance of targeting approaches: rural areas

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	36	71	21	18	58
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	62	65	75	74	48
Exclusion error (% of individuals in target households who are not covered)	64	29	79	82	42
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:3	1:6	1:0	1:0	2:0
Ratio of food insecurity rates (beneficiaries:non-beneficiaries)	1:1	1:0	1:2	1:2	1:1
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	1:0	1:0	1:2	1:1	1:0

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.5: Performance of targeting approaches: North East zone

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	39	69	27	22	67
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	71	74	69	76	59
Exclusion error (% of individuals in target households who are not covered)	61	31	73	78	33
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:1	1:1	1:1	1:0	2:0
Ratio of food insecurity rates (beneficiaries: non-beneficiaries)	1:4	1:2	1:0	1:6	1:1
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	0:9	1:0	1:3	1:1	1:2

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.6: Performance of targeting approaches: North Central zone

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	23	71	17	17	61
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	79	75	86	79	57
Exclusion error (% of individuals in target households who are not covered)	77	29	83	83	39
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:3	1:8	0:7	0:8	2:8
Ratio of food insecurity rates (beneficiaries:non-beneficiaries)	1:0	0:6	1:1	2:1	1:1
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	0:9	0:8	1:3	1:4	0:8

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.7: Performance of targeting approaches: North West zone

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	39	78	15	17	54
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	59	60	68	75	34
Exclusion error (% of individuals in target households who are not covered)	61	22	85	83	46
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:0	1:2	1:1	0:8	1:6
Ratio of food insecurity rates (beneficiaries:non-beneficiaries)	1:0	0:8	1:3	1:1	1:3
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	0:9	0:8	1:1	0:9	1:0

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.8: Performance of targeting approaches: southern zones

Performance indicator	Children under 2 years of age	Children under 5 years of age	Older people above 64 years of age	People with disabilities	PMT: bottom 20%
Coverage rate (% of target population covered by selection method)	27	54	35	17	41
Inclusion error (% of individuals living in beneficiary households who are not in the target population)	84	86	86	88	53
Exclusion error (% of individuals in target households who are not covered)	73	46	65	83	59
Ratio of poverty rates (beneficiaries:non-beneficiaries)	1:6	1:8	1:3	1:4	3:8
Ratio of food insecurity rates (beneficiaries:non-beneficiaries)	0:9	1:1	1:0	1:1	1:3
Ratio of multidimensional poverty rates (beneficiaries:non-beneficiaries)	0:9	1:0	1:1	1:1	1:1

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).

Table A.9: 95% confidence intervals for key comparisons indicators

Disaggregation	Indicator	Poverty rate			Household had insufficient food			Multidimensional poverty rate			Household affected by violent shock, violent death, or violent event			Poverty gap		
		Wave 1	Wave 4	P-value	Wave 1	Wave 4	P-value	Wave 1	Wave 4	P-value	Wave 1	Wave 4	P-value	Wave 1	Wave 4	P-value
National	Estimate (%)	40.0	40.0	99.6	30.6	42.0	0.0	65.9	74.4	0.0	6.2	11.8	0.0	11.6	11.8	83.2
	N	26,245	27,215		27,189	27,215		26,521	25,311		27,361	27,215		26,245	27,215	
	Lower CI (%)	36.5	35.8		28.0	39.0		63.5	71.6		4.9	9.4		10.3	10.4	
	Upper CI (%)	43.4	44.2		33.2	45.0		68.3	77.1		7.5	14.2		13.0	13.3	
North East zone	Estimate (%)	45.8	74.1	0.0	29.6	39.1	5.0	69.8	82.5	0.0	10.2	9.9	93.1	12.4	25.1	0.0
	N	4,899	5,871		5,437	5,871		5,214	5,367		5,504	5,871		4,899	5,871	
	Lower CI (%)	37.6	67.6		24.2	31.1		64.1	78.2		4.9	6.7		9.7	21.8	
	Upper CI (%)	54.0	80.6		35.1	47.0		75.6	86.8		15.5	13.1		15.2	28.5	
North Central zone	Estimate (%)	48.8	42.1	17.8	22.1	22.4	93.4	51.2	54.3	53.2	7.4	11.6	21.2	14.8	11.2	7.3
	N	4,605	4,479		4,616	4,479		4,556	4,084		4,645	4,479		4,605	4,479	
	Lower CI (%)	41.6	34.0		15.6	16.8		43.1	48.1		2.2	7.4		11.6	8.5	
	Upper CI (%)	56.0	50.1		28.6	28.1		59.2	60.5		12.5	15.9		17.9	14.0	
North West zone	Estimate (%)	56.4	52.4	41.2	26.5	39.9	0.3	69.8	75.7	6.5	6.6	18.0	0.0	17.0	15.5	42.5
	N	5,804	6,193		5,819	6,193		5,653	5,640		5,849	6,193		5,804	6,193	
	Lower CI (%)	48.9	45.8		20.4	33.7		65.3	71.0		4.3	12.3		13.9	13.0	
	Upper CI (%)	63.8	58.9		32.7	46.2		74.3	80.5		8.8	23.6		20.2	17.9	
Southern zones	Estimate (%)	26.4	15.1	0.0	35.7	52.8	0.0	67.3	77.9	0.0	4.5	7.8	6.9	7.4	3.7	0.0
	N	10,937	10,672		11,317	10,672		11,098	10,220		11,363	10,672		10,937	10,672	
	Lower CI (%)	22.5	11.9		32.3	49.1		64.2	73.6		3.3	4.4		6.1	2.7	
	Upper CI (%)	30.2	18.3		39.2	56.5		70.5	82.1		5.6	11.1		8.7	4.7	

Source: Authors' own. Created using data from the Nigeria General Household Survey 2010/11 – 2018/19 (NBS 2023).
Note: Confidence intervals (CIs) reported for 95 per cent confidence level.

Table A.10: 95% confidence intervals for targeting indicators at national level (%)

Indicator	Selection method																	
	Children under 2 years of age			Children under 5 years of age			Older people above 64 years of age			People with disabilities			PMT: bottom 20%			Random 50%		
	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI
Coverage rate (% of target population (living in households below the bottom consumption quintile) covered by selection method)	34.2	29.7	39.0	69.8	64.9	74.2	22.5	18.8	26.7	18.0	14.1	22.7	53.9	49.0	58.7	52.5	47.8	57.1
Inclusion error (% of individuals living in beneficiary households covered under selection method who are not in target population)	72.3	67.4	76.6	73.3	69.2	77.1	80.0	76.3	83.1	80.7	75.7	84.9	48.9	42.9	54.9	79.4	76.2	82.3
Exclusion error (% of individuals in target households who are not covered under selection method)	65.8	61.0	70.3	30.2	25.8	35.1	77.5	73.3	81.2	82.0	77.3	85.9	46.1	41.3	51.0	47.5	42.9	52.2
Poverty rate among individuals covered under selection method (beneficiaries)	50.9	45.6	56.3	50.3	45.9	54.6	40.9	36.7	45.2	42.6	36.4	48.8	78.8	74.1	83.6	41.2	37.2	45.2
Poverty rate among individuals who are not covered under selection method (non-beneficiaries)	36.4	32.9	39.9	28.7	25.2	32.2	39.7	35.8	43.7	39.4	35.6	43.2	29.6	26.5	32.7	38.8	34.5	43.0
Proportion of population who did not have enough food for the household at any point in the past 12 months who are covered under selection method (beneficiaries)	23.4	19.6	27.1	23.4	20.5	26.3	26.3	22.4	30.2	27.9	22.8	33.0	23.9	20.7	27.1	24.4	19.8	29.0
Proportion of population who did not have enough food for the household at any point in the past 12 months who are not covered under selection method (non-beneficiaries)	25.5	22.9	28.1	26.7	23.5	29.8	24.6	22.0	27.2	24.3	21.8	26.8	25.7	22.6	28.8	25.1	22.4	27.8

Indicator	Selection method																	
	Children under 2 years of age			Children under 5 years of age			Older people above 64 years of age			People with disabilities			PMT: bottom 20%			Random 50%		
	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI
Mean multidimensional poverty rate among individuals covered under selection method (beneficiaries)	60.6	55.8	65.4	62.5	59.1	65.9	72.1	68.0	76.2	68.4	62.0	74.7	65.6	61.5	69.6	65.7	60.0	71.3
Mean multidimensional poverty rate among individuals not covered under selection method (non-beneficiaries)	67.0	64.1	69.8	68.6	65.3	71.8	63.4	60.5	66.4	64.7	61.8	67.6	65.2	61.9	68.5	65.2	62.5	68.0
Proportion of women among individuals covered under selection method (beneficiaries)	50.8	49.5	52.1	50.9	50.1	51.7	51.9	50.5	53.2	49.7	48.1	51.3	50.0	48.6	51.5	50.8	49.8	51.7
Proportion of women among individuals not covered under selection method (non-beneficiaries)	50.2	49.5	51.0	49.8	48.9	50.7	50.0	49.2	50.7	50.5	49.7	51.2	50.4	49.7	51.1	49.9	49.0	50.8
Proportion of women of peak reproductive age among individuals covered under selection method (beneficiaries)	17.3	16.8	17.9	17.4	17.0	17.9	12.2	11.3	13.1	15.7	14.8	16.6	15.6	14.8	16.3	17.0	16.3	17.6
Proportion of women of peak reproductive age among individuals who are not covered under selection method (non-beneficiaries)	16.6	16.0	17.3	16.0	15.1	17.0	18.0	17.5	18.6	17.1	16.5	17.6	17.1	16.5	17.8	16.7	16.0	17.3
Proportion of children under 15 years of age among individuals covered under selection method (beneficiaries)	57.3	55.8	58.8	54.6	53.5	55.8	27.4	25.7	29.2	41.6	38.9	44.4	50.8	49.2	52.3	41.6	40.0	43.3
Proportion of children under 15 years of age among individuals who are not covered under selection method (non-beneficiaries)	36.0	34.6	37.4	25.7	24.3	27.1	45.4	43.9	46.9	41.6	40.0	43.1	39.1	37.5	40.7	41.5	39.8	43.2

Indicator	Selection method																	
	Children under 2 years of age			Children under 5 years of age			Older people above 64 years of age			People with disabilities			PMT: bottom 20%			Random 50%		
	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI	Esti-mate	Lower CI	Upper CI
Proportion of people with disabilities among individuals covered under selection method (beneficiaries)	5.1	4.1	6.2	4.3	3.5	5.1	8.8	7.7	9.8	24.3	22.7	25.9	3.9	3.1	4.8	4.1	3.5	4.6
Proportion of people with disabilities among individuals who are not covered under selection method (non-beneficiaries)	4.3	3.8	4.9	4.9	4.1	5.7	3.5	2.8	4.1	0.0			4.7	4.1	5.4	5.1	4.2	5.9
Proportion of older people among individuals covered under selection method (beneficiaries)	1.5	1.1	1.8	1.7	1.5	2.0	24.2	22.7	25.7	9.2	7.7	10.8	2.7	2.2	3.2	5.2	4.5	5.8
Proportion of older people among individuals who are not covered under selection method (non-beneficiaries)	6.4	5.8	7.1	9.2	8.3	10.2	0.0			4.2	3.7	4.7	5.8	5.1	6.4	5.1	4.4	5.7
Proportion of people directly affected by violence among individuals covered under selection method (beneficiaries)	9.1	6.4	11.7	9.1	7.2	11.0	9.6	7.0	12.1	11.4	8.4	14.3	10.3	7.4	13.3	8.0	6.4	9.6
Proportion of people directly affected by violence among individuals who are not covered under selection method (non-beneficiaries)	7.7	6.3	9.0	6.8	5.3	8.3	7.6	6.2	9.0	7.2	5.8	8.6	7.4	6.1	8.7	8.0	6.4	9.6

Source: Authors' own. Created using data from the Nigeria General Household Survey 2012/13 (NBS 2023).
Note: Confidence intervals (CIs) reported for 95 per cent confidence level.

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