Food affordability and moral impartiality in Ghana, A Singerian analysis of households in the Central Region

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ABSTRACT

Ghana's national Cost of a Healthy Diet bulletins exclude the Central Region for want of price data. Three things are therefore unknown: what an adequate diet costs there, how that cost falls across households, and whether the resulting distribution can be defended. Anchored in Singer's principle of equal consideration of interests and his preventable harm argument, and tested against the partiality and institutional critiques, this study addressed all three. A convergent mixed methods design priced twelve foods weekly for twelve months in four markets, yielding 1,728 vendor quotations, surveyed 640 food decision makers across six districts, and interviewed 48 of them along with 24 traders. An adequate diet cost GH¢10.84 per person per day and moved 30.6% between its December low and its June peak. After essential nonfood spending, 47.3% of households could not meet it. The poorest fifth carried 58.2% of the shortfall, a concentration index of −0.594, while the food budget share stayed flat across the income distribution and public transfers reached the richest quintile more often than the poorest. The study fills a documented monitoring gap and offers the first evidence conditioned ethical evaluation of food affordability in Ghana. Equal consideration, we argue, survives as a standard for judging food pricing once extended by an institutional duty to measure and a friction adjusted delivery rule. Eligibility should rest on resources remaining after essential nonfood spending rather than on food share thresholds, and regional price collection needs statutory protection.

Keywords: Cost of a Healthy Diet; Distributive Justice; Equal Consideration of Interests; Food Affordability; Ghana, Social Protection Targeting

I. INTRODUCTION

Food prices carry a moral question that the usual policy language keeps out of view. If two households have the same interest in being adequately fed, what follows for how a government should treat them when one can afford the food and the other cannot? Singer's answer starts from equal consideration rather than equal treatment: like interests deserve like weight, though real differences in need may justify unequal help (Singer, 2011). His earlier argument about preventable suffering pushes harder, holding that serious harm should be prevented where doing so costs nothing of comparable importance (Singer, 1972). Food affordability makes these abstractions concrete. A household choosing between vegetables and a child's transport fare is not registering a preference; it is settling a conflict between claims on a budget that will not stretch. Singer's position is contested, of course. Critics doubt its demandingness, defend obligations to family and community, and insist that deprivation is produced by institutions rather than relieved by private generosity (Berkey, 2018; Jollimore, 2023; Lange, 2022). We treat his framework as a standard to be tested against evidence, not as a conclusion reached in advance.

Ghana's empirical situation gives that test something to work with. In the first quarter of 2025 the national Cost of a Healthy Diet reached GH¢14.91 per person per day, up 12.2% on the previous quarter, with animal source foods at 28% and vegetables at 26% taking more than half the basket between them (Ministry of Food and Agriculture, 2025a). A national figure of that kind is useful, and it hides almost everything that matters about how the burden is absorbed. Some households cut variety, others cut portions. Some postpone treatment, borrow from a trader, lean on relatives, or move money away from school fees and utility bills. None of this appears in a price series, and there is little reason to expect it to fall evenly across urban, periurban and rural households. Agyapong et al. (2024) and Tuholske et al. (2020) both find the same thing from different angles, and Latino et al. (2024) show how much a national mean can conceal.

Within that national picture the Central Region is a particularly awkward case. It was left out of the first quarter 2025 bulletin for lack of data, a bulletin drawing on 190 markets in fifteen regions, and left out of the second as well, alongside North East, even though that one covered 185 markets in fourteen regions (Ministry of Food and Agriculture, 2025a, 2025b). The gap is not a matter of general neglect. Cape Coast has been studied, and work on retailer perceptions

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and on adolescent food insecurity exists and is informative (Mockshell et al., 2022; Reynolds et al., 2025). But retailer views do not reveal a household budget, and a study of schoolchildren cannot price a regional diet. Nor can a credible Central Region estimate be inferred from Accra or from a national mean, because market form, transport, own production and purchasing habits differ in ways that move both the numerator and the denominator of any affordability ratio (see Klemm et al., 2025; Latino et al., 2024; Herforth et al., 2024).

A second gap runs alongside the first. Ghanaian food research describes who is insecure, what people eat, and which characteristics predict worse outcomes (Akparibo et al., 2021; Kushitor et al., 2020, 2023; Yussif et al., 2024). It rarely asks whether the resulting distribution is defensible. That silence is understandable, since normative evaluation is not what most survey designs are built for, but it leaves an important question unexamined. Equal consideration offers a starting point without settling anything. Households do have special obligations, food policy touches producers as well as consumers, public money is finite, and structures may matter more than individual generosity. What has been missing is a study that places measured burden, lived consequence and household moral reasoning beside a carefully qualified Singerian argument, while keeping the empirical and the normative apart, as Salloch et al. (2015) and Wangmo et al. (2024) both insist it should be kept, and as Molefe (2016) would press from a different direction. Our primary goal is to estimate what an adequate diet costs in selected urban, periurban and rural communities of the Central Region, to establish how that cost is distributed and what it does to the households carrying it, to record how those households judge the fairness of the distribution, and to evaluate the whole picture through Singer's principle.

1.1 Research Objectives

i. Estimate the cost and affordability of an adequate diet across the region's urban, periurban and rural communities.
ii. Analyse how food price burden is distributed across household economic circumstances and assess that distribution against equal consideration of interests.
iii. Examine household judgements about the fairness of food price burdens and about differential policy attention to vulnerable households.
iv. Test how far standard affordability metrics correspond to households' own accounts of economic access.
v. Relate measured burden to reported consequences for dietary quantity, dietary diversity and other deprivations within the same households.

II. LITERATURE REVIEW

2.1 Theoretical Review

Three positions frame this analysis, and they do not sit comfortably together. Singer's equal consideration of interests supplies the standard. His preventable harm argument supplies the demand. The partiality and institutional critiques supply the resistance. Taking them as a set rather than singly is deliberate, since a framework tested only against friendly evidence is not really being tested at all, a point Salloch et al. (2015) make about empirical ethics generally and Wangmo et al. (2024) confirm from interviews with researchers doing it. Jollimore's (2023) survey of the impartiality debate supplies the map. Each subsection below states what a position claims, what it asks of the empirical work, and where it is exposed.

2.1.1 Equal consideration of interests

At its defensible core, equal consideration does not require that every household receives the same benefit, nor that all end at the same level of welfare. It requires that like interests carry like moral weight regardless of wealth, residence or standing (Singer, 2011). Where the threat to adequate nourishment is more serious, different treatment may be needed to give the underlying interest comparable weight, a move Jollimore (2023) traces through the wider impartiality literature and which Lange (2022) identifies as the hinge on which most disputes about partiality actually turn. For reading targeted food support the distinction does real work. A uniform subsidy can be administratively equal and morally uneven, if most of its value lands with households whose nutritional interest was never seriously at risk. So the principle is not neutral between delivery designs, which is precisely what makes it testable against a distribution rather than merely applicable to one (Berkey, 2021).

What the principle demands of an empirical study is heavier than it first looks. Interests must be comparable, which means a shared benchmark. They must be measured in the same population. And the weighting has to be visible in something, usually the allocation of public resources (Singer, 2011; Berkey, 2021; Salloch et al., 2015). Diet cost metrics meet the first requirement tolerably well, since the Healthy Diet Basket was built for cross setting comparison and Herforth et al. (2025) defend it on exactly those grounds, as does the measurement review by Masters and colleagues (2025). The second and third requirements are where the Ghanaian case turns awkward. A region absent from the monitoring system fails the second before the third is even reached (Ministry of Food and Agriculture, 2025a, 2025b).

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2.1.2 The preventable harm argument

A consequentialist strand supplies the second foundation, and it raises the evidential bar. Because Singer's (1972) famine argument turns on preventable serious harm, an affordability study cannot stop at a ratio. It has to ask whether price burden shows up as smaller meals, thinner diets, delayed treatment or disrupted schooling. That does not make every association causal. Dietary outcomes are shaped by food environment, knowledge, illness and preference as well as by income, and Ghanaian and comparative work is clear enough on the point (Karanja et al., 2022; de Groot et al., 2022; Kushitor et al., 2023). What the theory does impose is a discipline. If the moral claim rests on preventing harm, then the harm has to be measured and not assumed.

Most often skipped, and most constraining for policy design, is the comparable importance clause. An obligation to prevent harm holds only where preventing it costs nothing morally comparable, which puts the welfare of producers and traders inside the calculation rather than outside it (Singer, 1972; Berkey, 2018; Lange, 2022). Food price policy makes that constraint bite immediately. McCullough et al. (2024) find that higher household resources raise nutrient adequacy more reliably than lower prices do, which points the same way as a plain reading of the clause, towards transfers and infrastructure rather than price suppression. Whether the argument holds in a particular market is an empirical question, and one a study carrying both household and trader evidence is positioned to ask.

2.1.3 Partiality, relational obligation and the institutional critique

Better treated as a qualification than as a rival, the impartiality debate nonetheless complicates things. People plausibly owe more to their own children, partners and parents, and African relational thought warns against imagining the person as detached from those ties (Molefe, 2016, 2017). Lange (2022) makes the shape of the disagreement clear: hardly anyone defends pure impartiality, hardly anyone denies that partiality has limits, so the dispute is really about where the limits fall. Applied to food the question becomes concrete and, oddly, answerable. Does obligation inside a household or a kin network run towards need or away from it? Ghanaian household studies describe sharing and informal support without testing that question directly (Akparibo et al., 2021; Annan et al., 2022; Agyapong et al., 2024).

From a different direction, the institutional critique presses harder. Berkey (2018, 2021) argues that deprivation is produced through wages, taxation, infrastructure and social protection, so private generosity remains an incomplete response even where it is well directed. Two things follow. A Singerian evaluation of food pricing has to examine public instruments rather than individual conduct, which is what this study does. Less comfortably for the framework, if the machinery of provision is where the action lies, then the machinery of measurement, which decides whose interests become visible to provision at all, is not morally inert either (Herforth et al., 2024; Klemm et al., 2025; Ministry of Food and Agriculture, 2025b). An analysis brushing these objections aside would be sharp and socially thin. We keep equal consideration at the centre and test each conclusion against legitimate partiality, institutional responsibility, feasibility and possible harm to producers.

2.2 Empirical Review

2.2.1 Cost and affordability of an adequate diet

Recent work treats affordability as a relation rather than a price. The cost side is usually the least expensive combination of locally available foods meeting a dietary standard; the resource side is income, consumption expenditure, or a poverty based allowance (Herforth et al., 2020; Masters et al., 2025). That makes affordability more informative than a price index, because it asks whether a household has enough economic room to obtain an adequate diet. It also introduces judgement at every step. Change the basket, the equivalence scale, the price source or the non food allowance, and households cross the threshold in either direction. Headey et al. (2024) put this bluntly: methods matter, and prevalence estimates move with them. The sensible response is not to abandon the measure but to report its assumptions and test alternatives, which is the practice the monitoring guidance itself recommends (Herforth et al., 2022).

Globally the picture is consistent in direction and conditional in magnitude. Healthy diets remain out of reach for billions, with the 2026 global report putting the figure at 2.69 billion people, or 32.7% of the world's population, and multicountry price work showing a steep step between energy sufficiency and a diet aligned to food based guidelines (FAO et al., 2026; Bai et al., 2021). The Healthy Diet Basket underpinning these comparisons has itself been defended as a valid global standard (Herforth et al., 2025), which is part of why its coverage gaps matter rather than a reason to overlook them. What the methodological literature adds is that the denominator matters as much as the basket, since income distributions, consumption aggregates and the allowance retained for non food needs each generate different counts (Headey et al., 2024). The most defensible reading is therefore neither sceptical nor absolute: affordability is a serious constraint, and any particular number should be read alongside the assumptions that produced it.

African evidence brings place and livelihood into the picture, and it complicates any national figure. Open air markets persist in secondary cities (Hannah et al., 2022), own production still matters for some rural households, and growing urban dependence on purchased food changes both exposure to inflation and the meaning of access (Agyapong et al., 2024). Latino et al. (2024) show that national means conceal substantial subnational variation across five African

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countries, and Klemm and colleagues (2025) put the point more sharply still, reporting that within country variation in diet cost was as large as variation between countries. Basket costing in South Africa and Kenya points the same way (Vermeulen et al., 2023). There is also a finding that cuts against a common policy instinct: McCullough et al. (2024) report that higher household resources improve nutrient adequacy more reliably than lower food prices, though this varies across nutrients and countries. Together these results support local measurement and distributional analysis. They do not support importing a threshold from elsewhere and treating it as socially neutral.

2.2.2 Distribution of food price burden across households

Measuring a cost is one thing. Establishing who carries it is another, and the second task has received far less attention. Most national and cross national reporting stops at prevalence, giving the share of a population unable to afford a diet without describing how the shortfall is spread within it (FAO et al., 2026; Herforth et al., 2022; Masters et al., 2025). Where distribution is examined, the usual instrument is the food budget share, whose policy appeal rests on Engel's regularity that poorer households spend proportionally more on food. That regularity is not guaranteed in settings with substantial own production, informal sourcing and irregular income, and Ghanaian consumption evidence gives reason for caution (Ghana Statistical Service, 2025; Agyapong et al., 2024; Akparibo et al., 2021). Whether a share based rule and a resource based rule identify the same households is rarely asked directly.

Nor is the performance of existing transfers usually assessed against the depth of nutritional deficit. Evaluations of Ghanaian cash transfer programmes examine nutritional outcomes among recipients (de Groot et al., 2022), and national statistics establish the income and expenditure context (Ghana Statistical Service, 2019, 2025), but the prior question of whether assistance reaches the households with the largest food shortfall sits between these literatures rather than inside either. The gap matters for the ethical argument. A distribution can only be judged against equal consideration if the concentration of burden and the direction of public support are both measured on the same households at the same time, and that has not been done for any Ghanaian region.

2.2.3 Household judgements about fairness and targeted support

One thing the regional literature does not do is ask about fairness. It can identify who eats less diverse food, who relies on informal outlets, and what shapes food choice in low and middle income settings (Karanja et al., 2022; Annan et al., 2022; Mockshell et al., 2022). It seldom asks how people judge those patterns, or whether they would accept greater public support for households facing more serious nutritional risk. This is not an argument for settling moral questions by survey majority, and empirical ethics scholarship is careful on exactly that point (Salloch et al., 2015; Wangmo et al., 2024). It is an argument that applied ethics goes thin when it ignores how duty, reciprocity and deservingness are understood by the people living with the consequences. The omission is sharpest where household studies are cross sectional and single method, which leaves the measured distribution detached from both its lived meaning and its evaluation.

2.2.4 Affordability metrics and lived economic access

Affordability also needs keeping apart from food insecurity and diet quality, which are related but not the same. A ratio estimates economic capacity against a benchmark. An experience scale records anxiety and compromise. Dietary diversity records what was eaten, and anthropometry reflects accumulated biology (Tuholske et al., 2020; Akparibo et al., 2021; Kushitor et al., 2020). Ghanaian evidence shows why the distinction holds. Measures applied to the same urban households do not always agree, as Tuholske and colleagues found in Accra, and interventions improving household food security do not automatically improve child nutrition (de Groot et al., 2022). A household may clear a calculated threshold and still lack transport, fuel, time or a nearby market. It may also report acceptable consumption because borrowing, own production or a relative's help is temporarily covering a deficit that has not gone away.

What has not been established is the shape of that disagreement. Discordance between measures is generally reported as a validity problem to be reduced, with the implication that a better ratio would close it (Tuholske et al., 2020; Headey et al., 2024). The alternative reading, that resource deficit and practical friction are distinct dimensions that no single number can carry, has not been tested against a sample in which both are measured. Work on lived poverty and food acquisition in Ghana and South Africa comes closest (Agyapong et al., 2024), and studies of informal outlet reliance and market distance describe the frictions themselves (Hannah et al., 2022; Mockshell et al., 2022), but the two literatures have not been joined on the same households. Until they are, the practical question of which threshold a targeting rule should use remains open.

2.2.5 Consequences of price burden for diet and other deprivations

Ghanaian work documents material inequality without yet assembling it into an account of affordability. National survey analysis identifies socioeconomic correlates of food security. Urban studies record dietary constraint, conflicting indicator classifications and heavy reliance on informal outlets (Akparibo et al., 2021; Annan et al., 2022;

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Kushitor et al., 2023). Nutrition research finds undernutrition and overweight coexisting within the same communities, with obesity rising over a decade (Kushitor et al., 2020; Yussif et al., 2024). Each design answers its own question well. A Food Consumption Score does not price a diet, a retailer's view does not reveal a budget, and a health outcome cannot identify which part of food cost produced it. The literature is informative in pieces and incomplete as a chain.

What is missing is the link the consequentialist premise needs most. Whether the size of a household's food shortfall predicts the specific sacrifices it makes, and in particular whether it predicts deferred medical care or interrupted schooling, has been assumed rather than estimated in this literature (Singer, 1972; de Groot et al., 2022; Karanja et al., 2022). Studies measuring burden rarely measure consequence in the same households, and studies measuring consequence rarely have a defensible cost benchmark to relate it to (Tuholske et al., 2020; Latino et al., 2024). Whether comparable burdens produce comparable consequences across residence strata is a further question that, as far as we can establish, has not been put at all.

III. METHODOLOGY

3.1 Research Design

This study is pragmatist in orientation, with a separate normative layer. Prices and household resources had to be measured, lived access and moral reasoning had to be interpreted, and the defensibility of a distribution had to be argued. The first two operations are empirical and the third is philosophical, and we kept them apart, which is the practical reason for choosing pragmatism over a single paradigm (Morgan, 2007). That separation is not cosmetic. No regression coefficient is treated here as proof that a policy is just, and no household's moral language is read as a direct measure of Singer's principle, a discipline the empirical ethics literature insists on for good reason (Salloch et al., 2015; Wangmo et al., 2024).

A convergent mixed methods design combined three empirical components collected within the same field period: repeated market price collection, a cross sectional household survey, and semi structured interviews with household food decision makers and traders (Creswell & Plano Clark, 2018). Each was analysed on its own terms first. Integration then proceeded through joint displays and case comparison, after which the merged evidence entered the Singerian evaluation as a separate step. Convergence was chosen over a sequential design because the three questions are simultaneous rather than staged. What a diet costs, who can meet that cost, and what failing to meet it does are all observable in the same households at the same moment, and collecting them together avoids attributing to seasonal change what is really the lag between one instrument and the next (Morgan, 2007; Malterud et al., 2016).

3.2 Study Area

Fieldwork covered selected urban, periurban and rural communities of the Central Region across six districts, with Cape Coast as the urban anchor. The region is coastal, with a population of roughly 2.86 million recorded at the last census and a livelihood mix spanning fishing, smallholder farming, trading and salaried public employment (Ghana Statistical Service, 2021). Its food retail runs largely through open air markets and small community outlets rather than supermarkets, a pattern documented across African secondary cities generally (Hannah et al., 2022) and in Ghanaian urban food environment research specifically (Mockshell et al., 2022; Annan et al., 2022).

Two features made the region the right place to ask these questions. The first is substantive: market density, transport, livelihood and dependence on purchased food differ sharply between its urban, periurban and rural settlements, and those differences alter both the level and the meaning of affordability (Agyapong et al., 2024; Latino et al., 2024). The second is the absence that motivated the study. The Central Region was excluded from Ghana's 2025 quarterly Cost of a Healthy Diet bulletins for want of price data, so no locally priced benchmark existed against which regional household resources could be assessed (Ministry of Food and Agriculture, 2025a, 2025b; Herforth et al., 2024).

3.3 Target Population

Eligible respondents were adults aged eighteen or older who held primary or shared responsibility for buying or organising food for a private household, and who had lived in the community for at least six months. Institutional households and adults without knowledge of food acquisition were excluded. The residence criterion protects against seasonal in-migrants reporting prices and sourcing arrangements they had not yet had to live with. The responsibility criterion protects the unit of analysis, since expenditure and rationing reported by someone who does neither is not evidence about either (Ghana Statistical Service, 2019; Akparibo et al., 2021; Agyapong et al., 2024). Traders operating in the four monitored markets formed a second, smaller population approached for the qualitative component.

3.4 Sampling and Sample Size

Households were sampled through a stratified multistage cluster design. Urban, periurban and rural communities formed the first strata. Districts and enumeration areas were selected with probability proportionate to size

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using the census frame (Ghana Statistical Service, 2021), and households were selected systematically after listing. Where more than one eligible decision maker was present, one was chosen at random. A base of 384 follows from a 95% confidence level, a 5% margin of error and a conservative prevalence of 0.50; a design effect of 1.5 gives 576, and allowing 10% for non response produced the target of 640. All 640 were achieved. Survey weights correct unequal selection probabilities and non response, and inference is bounded by the achieved frame.

Market selection followed the household strata. Four markets were monitored, two urban, one periurban and one rural, chosen to capture large destination markets alongside smaller community outlets, since price formation in the two differs in ways that a single market would conceal (Hannah et al., 2022; Mockshell et al., 2022; Herforth et al., 2024). Twelve foods spanning starchy staples, roots and tubers, legumes, vegetables, fruits, eggs, fish and dairy were priced weekly for twelve months, producing 1,728 observations. Twelve months rather than a quarter was a deliberate choice: a quarterly snapshot cannot separate seasonal movement from level, and the monitoring literature treats seasonality as a first order property of diet cost rather than noise around a mean (Herforth et al., 2022; Klemm et al., 2025).

Qualitative participants were drawn purposively from survey respondents who consented to follow up, with maximum variation sought across residence, sex, livelihood and estimated affordability position. Forty eight household interviews and twenty four trader interviews were completed. Recruitment continued until the sample carried sufficient information power for the aims and the variation sought, rather than to a fixed saturation count (Malterud et al., 2016). Traders were included to clarify unit pricing, seasonality, credit and small quantity sales, mechanisms that household respondents experience but cannot fully explain.

3.5 Data Collection Instruments and Procedures

Four instruments were used. A digital price form recorded food name, variety, local unit, measured edible quantity, vendor quotation, market, date and availability. The household questionnaire captured composition, livelihood, income, food and non food expenditure, own production and transfers, sourcing and market access, meal frequency, dietary diversity across eight food groups, eight coping and deprivation items, five lived access constraints, and social protection receipt; its expenditure module follows the structure used in Ghana's national household surveys so that the two remain comparable (Ghana Statistical Service, 2019, 2025). A short set of plain language fairness vignettes compared universal support, targeted assistance to households with more severe deficits, and investment in places absent from the monitoring system. Respondents gave a view and a brief reason before Singer was mentioned at any point, a sequencing precaution the empirical ethics literature recommends (Salloch et al., 2015). The interview guides explored price change, access, family obligation, deservingness, institutional responsibility, and experiences that do not fit a calculated metric.

Price collection followed the established protocol for costing a healthy diet (Herforth et al., 2020, 2022). Trained collectors took up to three independent vendor quotations per visit, confirmed the quantity being priced, weighed local units directly rather than accepting a nominal measure, and recorded availability as observed. Direct weighing matters more here than it might elsewhere, because local units vary between vendors and a quotation attached to an unverified unit is not a price. Household questionnaires were administered face to face in the respondent's preferred language, and interviews were conducted privately, audio recorded with separate permission and supported by field notes.

3.6 Data Analysis

Cost of an adequate diet was calculated as the sum of the least expensive locally available item in each food group, priced at the median of the three vendor quotations for that market and month and standardised per kilogram (Herforth et al., 2020; Masters et al., 2025). Oils and fats were not among the twelve items priced, so the estimate is a lower bound on a full basket and not a replication of the national protocol, which is how we report it throughout. The benchmark measures economic access. It is not a description of what anyone ate.

Affordability was expressed in several ways rather than one. The primary ratio compares a household adjusted diet cost with resources remaining after essential non food spending on rent, utilities and fuel, transport, education, health and debt, which is the least cost affordability logic set out by Masters et al. (2025). The gap expresses the shortfall in cedis, and the food budget share is reported separately. Food from own production and gifts was valued and included, because a cash only measure misclassifies rural households (Agyapong et al., 2024; Latino et al., 2024). Resources after non food spending were floored at GH¢100, which affected 109 households at the deepest end of the distribution and makes the reported shortfalls conservative. We tested alternative thresholds instead of assuming one, since the monitoring literature treats that choice as open (Herforth et al., 2022; Headey et al., 2024).

Quantitative analysis used sampling weights, strata and clusters. Prices were summarised by market, stratum and month, with seasonal patterns shown instead of folded into an annual mean, following the reporting practice the monitoring guidance recommends (Herforth et al., 2022; Klemm et al., 2025). Household analysis reports affordability prevalence, gap depth and consequences. Concentration curves and indices describe how burden is distributed, and

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regression models estimate adjusted associations with coping intensity, dietary outcomes and specific deprivations. These are associations, not causal effects, and the limitations section returns to what that rules out.

Interviews were transcribed, checked against audio, and analysed reflexively, combining deductive attention to fairness, partiality and institutional responsibility with inductive coding of explanations the framework did not anticipate (Braun & Clarke, 2021). Quotations illustrate reasoning; counts indicate how widely an account was expressed within a purposive sample and are not prevalence estimates. Integration then ran through joint displays linking household cases to their calculated affordability position (Creswell & Plano Clark, 2018). Agreement between components strengthens an inference; disagreement was analysed as a result in its own right rather than set aside. The final normative stage worked through each major finding as an argument: empirical premise, affected interest, principle, inferential step, provisional conclusion, strongest counterargument (Salloch et al., 2015). Equal moral weight was never conflated with identical treatment.

3.7 Ethical Considerations

Ethical approval preceded recruitment. Participants received information in a language they understood and gave informed consent; participation was voluntary and interviewees could skip sensitive income or hardship questions. Identifiers were stored separately from research data, quotations were de identified, and small place and livelihood combinations were masked. Because questions about hunger can cause discomfort, field staff carried an approved list of public and community support contacts. Two further safeguards were specific to the normative component. Singer was not introduced before participants answered the fairness questions, so the vignette responses record reasoning rather than agreement with a position they had just been handed. And evidence resisting equal consideration was examined rather than smoothed away, which is the minimum a study can do when it sets out to test a framework it also uses (Salloch et al., 2015; Wangmo et al., 2024; Berkey, 2021).

IV. FINDINGS & DISCUSSION

4.1 Respondents and the reliability of the evidence

All 640 targeted households were interviewed across six districts: 249 urban, 210 periurban and 181 rural. The comparison the design was built around therefore survived fieldwork intact. Before the objectives are addressed in turn, this section establishes whether the evidence can carry them. Table 1 sets out who these respondents were. Sample size alone says little about credibility. What matters more is whether the people interviewed were positioned to answer the questions put to them, and here three features of the composition help. Almost nine in ten respondents (88.6%) were the household head or the head's spouse, and all were screened for responsibility over food acquisition, so reported expenditure and rationing came from the people who decide, not from whoever happened to be at home. The livelihood spread was wide enough to support the comparisons in section 4.3, with no single occupation dominating: trading and self employment at 25.3%, farming and fishing at 23.0%, salaried work at 20.0%, casual work at 13.9%, unemployment at 10.2% and retirement at 7.7%. And a quarter of households (24.1%) contained a member whose condition affects food needs, while three quarters contained a child, so claims about differentiated need could be tested against households that actually carry it.

Two further features guard against a familiar criticism, that affordability research measures purchased food and calls the result access. Just over half of households (55.2%) named the open market as their main source, 12.3% relied mainly on their own farming or fishing, and 6.1% depended on family or community support. Nearly a third travelled 30 minutes or more to their main market, and 35.3% had no access to food on credit. A sample of formal market purchasers in one town would have produced a tidier estimate and a less useful one.

Instruments performed reasonably well. The mean within market coefficient of variation across the three vendor quotations was 8.7%, which suggests the recorded prices reflect market conditions and not one seller's asking price. Availability was recorded, not assumed, and 18.8% of item months were limited or unavailable. On the household side, every derived variable was reproduced from its components before analysis: nonfood totals reconciled with their six parts to within GH¢2, and the affordability ratio, gap and binary classification reproduced exactly. Missing data were slight. Education was missing for 42 respondents (6.6%), and all 155 missing values for children's meals belonged to households with no child.

Not everything held up equally well. The five lived access items returned a Cronbach's alpha of 0.517, which is low, and we report it instead of buying it. The items describe distinct frictions and not one latent trait, so section 4.5 works with the individual items alongside the summary index instead of relying on the index alone.

Strongest of all is the agreement between two instruments that share no data and land on the same quantity. Applying the market derived cost of an adequate diet to households' own per capita resources classified 44.2% of the sample as unable to afford that diet. The household level benchmark, built from composition adjusted requirements, produced 47.3%. Three percentage points separate two independent routes to the same estimate.

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Variation survived into the qualitative subsample. Forty-eight household interviews were distributed across all three strata and all three affordability positions, with 14 affordable, 14 borderline and 20 unaffordable cases, and 24 trader interviews were balanced eight to each stratum. Interview accounts could therefore be read against a household's measured position instead of in isolation from it.

Table 1

Characteristics of surveyed food decision makers and their households, by residence stratum (n = 640, column percentages unless stated)

Characteristic	Urban (249)	Periurban (210)	Rural (181)	All (640)
Female decision maker	54.2	65.2	59.7	59.4
Age in years: mean (SD)	44.2 (11.6)	42.8 (12.3)	42.9 (11.9)	43.4 (11.9)
Household head or spouse	87.9	92.8	84.5	88.6
Education: basic / secondary / tertiary	29.1 / 43.6 / 27.4	30.8 / 42.1 / 27.2	26.6 / 46.7 / 26.6	28.9 / 44.0 / 27.1
Main livelihood				
Trading or self-employment	22.9	30.0	23.2	25.3
Farming or fishing	21.3	26.7	21.0	23.0
Salaried work	22.5	19.0	17.7	20.0
Casual work	14.1	8.6	19.9	13.9
Unemployed or retired	19.2	15.7	18.2	17.9
Household composition and needs				
Household size: mean (SD)	4.82 (1.89)	4.78 (2.04)	4.75 (2.00)	4.79 (1.97)
At least one child present	75.9	76.7	74.6	75.8
Member with condition affecting food needs	26.1	18.6	27.6	24.1
Food access and resources				
Main source: open market	58.2	57.1	48.6	55.2
Main source: own farm or fishing	12.9	10.5	13.8	12.3
Market journey 30 minutes or more	34.5	30.5	30.9	32.2
Cannot obtain food on credit	35.3	35.2	35.4	35.3
Median cash income, 30 days (GH¢)	4,829	4,213	3,267	4,052
Median essential non-food spending (GH¢)	2,639	2,130	1,912	2,234
Median own production or in-kind food (GH¢)	43	50	115	63
Received social protection	13.3	13.3	13.3	13.3

Note. Education percentages exclude 42 cases (6.6%) with missing values; all other variables are complete.

4.1.1 Cost and affordability of an adequate diet

Objective 1 asked what an adequate diet costs in the Central Region and who can afford it. Priced from the region's own markets, an adequate diet cost GH¢10.84 per person per day (Table 2). Since oils and fats were not among the twelve items priced, this is a lower bound and not a replication of the national protocol, and it should be read that way beside the national figure of GH¢14.91 for the first quarter of 2025 (Ministry of Food and Agriculture, 2025a). What the local estimate adds is internal structure. Cost varied by settlement type: GH¢11.29 per person per day in urban markets against GH¢10.06 in rural ones, a premium of 12.2%, with periurban markets in between. That premium held for every item, from 8.2% on groundnuts to 15.9% on cassava, so it looks like a general urban margin, not the scarcity of one commodity.

Season mattered more than place. The regional basket ran from GH¢9.35 in December to GH¢12.20 in June, an annual swing of 30.6%, and averaged 22.0% higher through the April to August lean months than through the harvest months of November to February (Figure 1). A quarterly snapshot, or a single annual mean, would conceal a movement larger than the entire urban–rural difference. The composition of the cheapest basket is worth pausing on. Vegetables absorbed 29.8% of the total, animal source foods 19.5%, starchy staples 18.2%, fruits 17.2% and legumes 15.3%. The least cost selection was also remarkably stable. Cassava supplied the staple group and tomato the vegetable group in all 48 market months, orange the fruit group in all 48, sardine the animal source group in all 48, and groundnuts the legume group in 43 of 48. A household buying the modelled basket would eat the same five foods every day of the year. That the cheapest adequate diet is monotonous is not a side issue; it is part of what households are being asked to accept. It was also not always on the shelf. Just over eighteen per cent of the selected items were recorded as limited in availability and a further 0.8% as unavailable.

Against that cost the household benchmark had a median of GH¢1,778 per month. After essential non food spending, 47.3% of households could not meet it (Table 2, Panel B). Rural households were most exposed at 53.6%,

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urban households at 46.2% and periurban at 43.3%. Among those falling short, the median gap was GH¢1,302 per month and the mean shortfall equalled 66.1% of the basket, which means the typical unaffordable household could cover roughly a third of an adequate diet from what remained. Food already took 38.2% of cash income at the median.

Interviews suggest these figures understate what households face. Fifteen of the 48 raised the small quantity penalty at some point, one putting it simply: "Buying small quantities helps with cash flow, but the unit price is often higher than buying a larger measure." Seven raised transport, noting that the fare to a cheaper market can cancel the saving. Fourteen raised own production and its limits, describing food from the farm as real but seasonal and unable to cover an adequate diet on its own. Traders described the same mechanism from behind the stall: seven of 24 said small purchases raise the effective unit price because weighing and handling take time, and three explained that replacement cost drives the shelf price when roads or supply deteriorate. The price data carry a trace of this. Kontomire, sold in 250-gram units, cost 68% more per kilogram than tomato sold by the kilo. The cheapest adequate diet is cheapest only for a household that can buy at scale, travel cheaply and shop when supply is good.

Table 2

Cost and affordability of an adequate diet, by residence stratum

	Urban	Periurban	Rural	All
Panel A. Cost of the basket (GH¢ per person per day, 12-month mean)				
Vegetables (270 g)	3.42	3.12	3.02	3.19
Animal source foods (210 g)	2.18	2.11	1.97	2.09
Starchy staples (322 g)	2.09	1.95	1.80	1.95
Fruits (230 g)	1.93	1.85	1.73	1.84
Legumes, nuts and seeds (85 g)	1.67	1.70	1.54	1.64
Total basket	**11.29**	**10.72**	**10.06**	**10.84**
Lean season mean (April–August)	12.45	11.53	10.88	11.83
Harvest season mean (November–February)	9.94	9.56	9.34	9.69
Panel B. Household affordability				
Median monthly benchmark cost (GH¢)	1,884	1,738	1,628	1,778
Median resources after non-food spending (GH¢)	2,207	2,170	1,432	1,856
Median affordability ratio	1.14	1.24	0.90	1.07
Unable to afford an adequate diet (%)	46.2	43.3	53.6	47.3
Median shortfall among those unable (GH¢)	1,322	1,456	1,100	1,302
Mean shortfall as share of basket, those unable (%)	66.6	70.5	61.5	66.1
Median food budget share (%)	37.2	38.6	39.2	38.2

Note. Panel A uses the least expensive locally available item in each group, priced at the median of three vendor quotations per market-month (n = 1,728 observations). Oils and fats were not priced, so the total is a lower bound on a full basket.

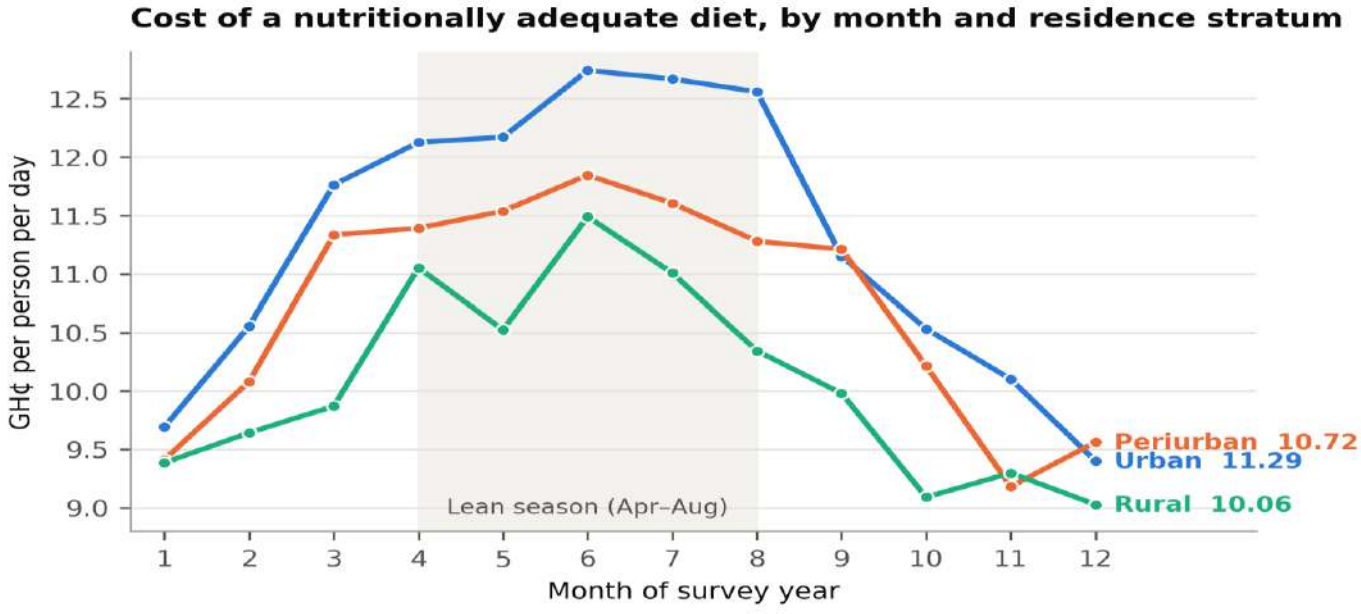


Figure 1. Seasonal profile of the cost of an adequate diet, by residence stratum. Labels give the twelve-month mean for each stratum.

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4.1.2 Distribution of the Food Price Burden

Objective 2 asked how that burden is distributed and whether the distribution satisfies equal consideration. On the first half of the question the answer is stark. Burden was not merely unequal; it was concentrated to a degree that a prevalence figure cannot show. Ranking households by per capita income and cumulating the affordability gap gives a concentration index of −0.594 (Figure 2). The poorest fifth carried 58.2% of the region's total gap, the poorest two fifths carried 87.8%, and the richest fifth carried 0.7%. Table 3 traces the gradient. Mean shortfall fell from GH¢1,736 in the bottom quintile to GH¢21 in the top, and the share of the basket left unfunded fell from 83.5% to 1.5%. In the poorest quintile 99.2% could not afford an adequate diet; in the richest, 3.1% could not.

More surprising is what the food budget share did across the same range. It did nothing. Households in the poorest quintile spent 37.2% of cash income on food and those in the richest spent 38.6%, giving a concentration index of 0.007. Engel's regularity, which underwrites the policy use of food share thresholds, held so weakly here that the metric carried almost no distributional information. Applying a fifty per cent food share rule would have identified 5.8% of households as burdened. The resource-based ratio identified 47.3%. This is not a small difference in accuracy between two reasonable measures; it is the difference between seeing a gradient and seeing a flat line.

Exposure tracked how secure a livelihood was, not whether one existed. Three quarters of households living on casual work (75.3%) could not afford an adequate diet, against 67.3% of retired households, 61.5% of unemployed ones, 49.7% in farming and fishing, 40.1% in trading and 19.5% in salaried work. Holding livelihood, education, household size, market access and credit constant, having a member with a condition affecting food needs raised the probability of unaffordability by 11.7 percentage points, and a female food decision maker by 9.2 points. Employment protected households only when it was regular, which participants said directly: being employed, as one put it, does not automatically mean that food is affordable. Traders described the same customers from the other side, with seven of 24 identifying those on irregular incomes as the ones who struggle most and who respond by buying smaller quantities, substituting foods or asking for credit.

Existing transfers did not follow this gradient at all. Social protection reached 13.3% of households overall, but coverage was 10.9% in the poorest quintile and 18.8% in the richest. Households classified as unable to afford an adequate diet were marginally less likely to receive support (12.2%) than those that could (14.2%). Among unaffordable households, the mean value of transfers received offset 3.2% of the mean shortfall. Whatever else may be said about how assistance is currently distributed, it is not organised around the depth of nutritional deficit, and for the households it does reach it is not close to sufficient.

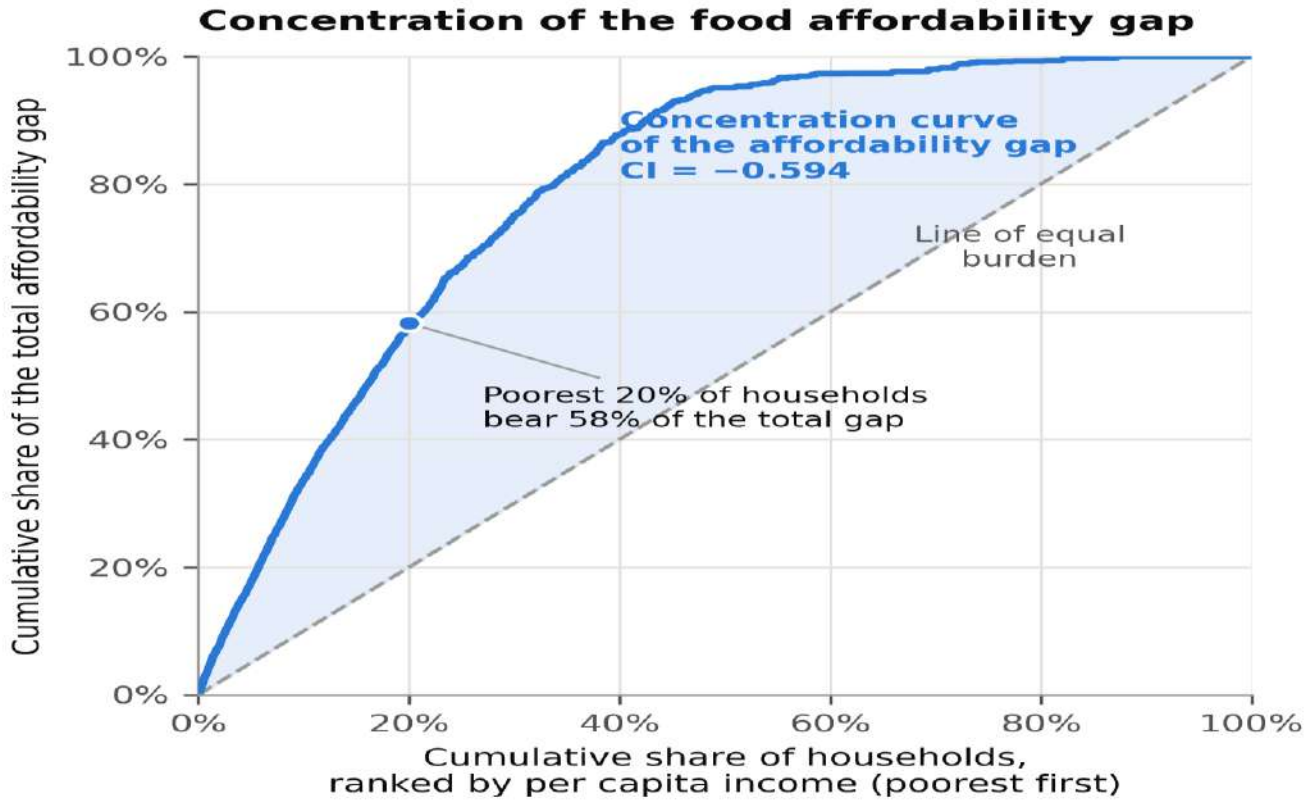


Figure 2

Concentration Curve for the Food Affordability Gap against per Capita Income Rank

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Table 3

Food price burden, coping and public support by per capita income quintile (n = 128 per quintile)

Indicator	Q1 poorest	Q2	Q3	Q4	Q5 richest
Median per capita income, 30 days (GH¢)	326	603	927	1,357	2,444
Unable to afford an adequate diet (%)	99.2	82.8	39.8	11.7	3.1
Mean affordability gap (GH¢)	1,736	894	285	59	21
Mean gap as share of basket (%)	83.5	48.5	18.9	4.2	1.5
Median food budget share (%)	**37.2**	**39.0**	**38.2**	**37.4**	**38.6**
Mean lived access constraint (1–5)	2.68	2.42	2.04	1.84	1.87
Mean coping score (0–24)	10.0	6.1	3.4	2.2	2.1
Received social protection (%)	**10.9**	**13.3**	**10.9**	**12.5**	**18.8**
Mean fairness rating (1 very unfair – 5 very fair)	2.58	2.84	2.89	3.07	3.03

Note. Concentration index for the affordability gap = −0.594; for the food budget share = 0.007; for the coping score = −0.348. The two bold rows mark the contrasts discussed in the text.

4.1.3 Household Judgements On Fairness and Targeted Support

Objective 3 asked whether households regard differential treatment of the worse off as justified. They began from dissatisfaction with the status quo. On the five-point item, 34.4% rated the current spread of food price burden unfair or very unfair against 24.2% who rated it fair or very fair, with a mean of 2.88. Judgements tracked position: households that could not afford an adequate diet rated fairness at 2.70 against 3.05 among those that could. The vignettes tested whether that dissatisfaction became support for differential treatment, and largely it did. Shown two households paying identical prices where only one could still buy an adequate diet, 54.7% would give more to the household with the larger shortfall and 30.5% would give both the same. Shown three households with an identical shortfall but different needs, 54.5% would differentiate assistance and 28.4% would treat them alike. Support strengthened with exposure. Among unaffordable households, 63.7% chose need based allocation in the first vignette against 46.6% of affordable households, and 35.0% took the prioritarian option in both vignettes against 24.6%. Poorer households were more willing, not less, to endorse a rule that would also benefit others in their position.

Our third vignette has no precedent in the Ghanaian literature that we are aware of. Asked how limited funds should be divided between a region with no reliable information on the cost of an adequate diet and a region already monitored but capable of improvement, 36.7% would fund the unmonitored region, 27.5% would divide equally, 13.9% preferred another approach and only 12.5% would fund the monitored one. Nearly two thirds declined to let the existing evidence base decide where public attention goes. Respondents in a region excluded from national diet cost comparisons treated measurement itself as a distributive question, without being prompted to.

Endorsement came with a condition, and this is where interviews qualify the survey. Sixteen of 48 participants supported targeting but tied it explicitly to transparency: targeting is fair, one said, if the criteria are clear and people can see why one household qualifies, since otherwise the programme looks political. A further 16 preferred allocation by severity of shortage, reasoning that an equal amount can leave the household with the biggest gap still unable to buy enough food, and nine proposed a universal floor with supplements for children, illness or other greater needs. Only seven defended equal treatment outright, and even they framed it instrumentally, as protection against discrimination, not as a principle of equal weight. So 41 of 48 accepted some differentiation, and a substantial share made procedural visibility a condition of accepting it.

Responsibility was attributed institutionally. Asked to select up to two parties who should carry the main responsibility, 73.6% named government, 43.8% the household, 36.9% the extended family or community, 31.7% traders and 23.1% employers. Interviews sharpened this. Eighteen of 48 held government primarily responsible because it controls social protection and market infrastructure, 16 argued for shared responsibility, and 14 argued that government should act on transport, storage and market competition rather than through subsidy, since a durable reduction in price pressure would not require a permanent fiscal commitment. Nineteen warned at some point that a subsidy pushing retail prices too low would harm farmers or traders, a concern two traders raised directly. Households were not asking for cheap food at someone else's expense.

4.1.4 The Affordability Metric Against Lived Economic Access

Objective 4 asked how far standard affordability metrics correspond to households' own accounts of economic access. This is a validity question, and for a quarter of the sample the two instruments answered it differently. Just under a third of households (30.6%) reported at least one severe constraint on the lived access items. Cross classifying that against the metric gives four groups (Figure 3, Table 4). The concordant groups account for 74.5% of households: 26.2%

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carried both a measured deficit and severe friction, 48.3% carried neither. The remaining 25.5% were sorted differently, and each discordant group teaches something different.

Larger of the two groups at 21.1% (n = 135), these households carried a measured deficit without severe reported friction. Their median affordability ratio was 0.46 and the median value of food from own production or gifts was GH¢69 a month, against GH¢63 among households with no deficit. Their coping score of 6.8 out of 24 sat well above the 1.8 recorded by secure households, so the deficit was real enough. What these households had was a buffer that a cash-based ratio cannot see. Participants described it and its limits. Seventeen of 48 said an official calculation would misjudge them because of own production, since food eaten from the farm costs no cash but is seasonal and cannot cover everything. Fifteen described a month in which income looked adequate until school costs and medicine arrived together, leaving variety to be cut even though nothing ran out. The metric does not misclassify these households so much as it misdates them. A buffer defers a deficit; it does not remove one.

The smaller group (4.4%, n = 28) tests the metric more directly. Their median affordability ratio was 2.20, more than twice the resources needed, and they still reported severe constraint. Their coping score of 2.5 exceeded the 1.8 among fully secure households, 21.4% had skipped a meal in the previous month against 12.6%, and 42.9% travelled 30 minutes or more to their main market against 32.2% of the sample. Credit and cooking fuel were the constraints most often rated severe, and their median value of own or in-kind food, at GH¢40, was the lowest of the four groups. These are the households the affordability literature keeps predicting and rarely locates: economically able, practically constrained. Twenty-eight cases is a small number, and we would not build much on this group alone, but its existence is consistent with what a quarter of the interviews described.

Reading down the metric column instead of across it makes a related point at scale. Among the 337 households the metric classified as able to afford an adequate diet, 62.0% had used at least one coping strategy in the previous 30 days, 41.8% were spending 40% or more of cash income on food, 32.6% travelled half an hour or more to market, 37.1% could not obtain food on credit when money was short, and 15.1% could rarely or never buy important foods in quantities they could afford. Sixteen of 48 interviewees volunteered the transport and package size problem when asked where an official calculation would go wrong.

Threshold sensitivity makes the practical stakes explicit (Table 4, Panel B). The resource-based ratio identified 47.3% of households. Loosening it to 1.1 raised the figure to 50.9% and tightening it to 0.9 lowered it to 44.5%, so the conclusion is robust within its own family of measures. Switching families did not preserve it. A 40% food share rule identified 43.6%, which is close by coincidence and not by construction since it selects a substantially different set of households; a 50% rule identified 5.8%. Valuing only cash resources and excluding own production raised the figure to 50.3%. The choice among these is not a technicality. It decides whether roughly one household in twenty or nearly one in two becomes visible to a targeting rule, and since the metric and severe friction share only about a quarter of their variance ($\varphi = 0.51$), no single threshold can stand in for access.

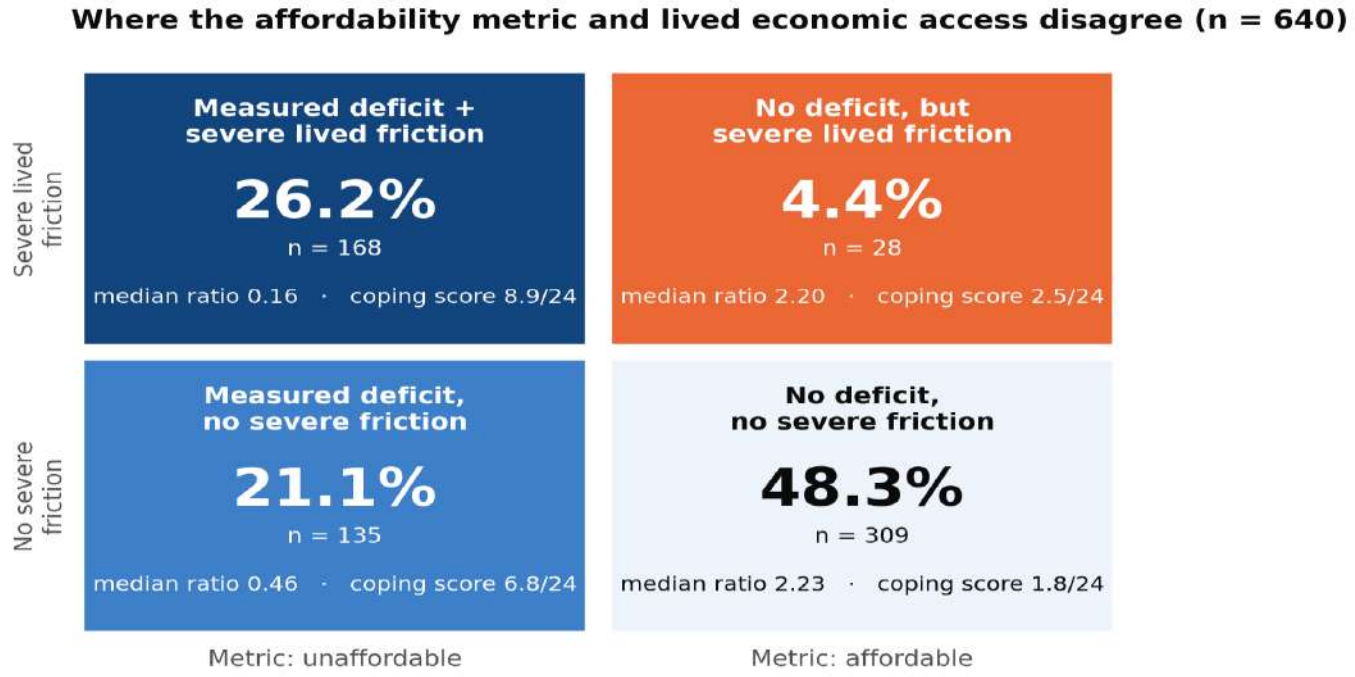


Figure 3

Joint display of the affordability metric against reported severe constraints on lived economic access. Severe friction denotes a rating of 4 or 5 on at least one of five constraint items.

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Table 4

Metric-by-lived-access groups and sensitivity to the affordability threshold

Group	n	% of sample	Median ratio	Coping score (0–24)	Skipped a meal (%)	Nutrient-dense days (0–42)	Own/in-kind food (GH¢)
Panel A. Four groups							
A. Deficit and severe friction	168	26.2	0.16	8.90	71.4	18.9	76
B. Deficit, no severe friction	135	21.1	0.46	6.82	50.4	20.1	69
C. No deficit, severe friction	28	4.4	2.20	2.46	21.4	21.9	40
D. No deficit, no severe friction	309	48.3	2.23	1.82	12.6	22.9	63

Table Household Food Affordability and Lived-Access Constraints: Classification Groups and Sensitivity to Alternative Affordability Thresholds

Panel B. Threshold definition	Households identified as burdened (%)
Resources after essential non-food spending below basket cost (primary)	47.3
Same, with a 10% tolerance above the basket (ratio < 1.1)	50.9
Same, with a 10% tolerance below the basket (ratio < 0.9)	44.5
Cash resources only, excluding own production and in-kind food	50.3
Food expenditure at 40% or more of cash income	43.6
Food expenditure at 50% or more of cash income	5.8

Note. Only 9.2% of households identified as resource-deficient by the primary definition also met the 50% food share rule, so that rule would have missed 90.8% of them.

4.1.5 Consequences of the Burden for Diet and Other Deprivations

Objective 5 asked whether comparable burdens produce comparable consequences, and for whom. The first part of the answer is that measured burden does show up in what households eat and give up, and here the gradient is unambiguous (Table 5). Adults in households with no affordability gap ate 2.39 meals on the previous day; adults in households with a severe gap ate 1.77, a reduction of 26%. Children's meals fell from 2.54 to 1.93. What households protected is more interesting than how steeply the totals fell. Days of staple consumption barely moved, from 6.01 to 5.61 across the full range of gap severity, while nutrient dense food group days fell from 22.8 to 17.8. Animal source foods fell from 4.37 days to 3.64, fruits from 3.15 to 2.15, dairy from 2.87 to 2.02. Households defended the quantity of the cheapest energy and gave up dietary quality, which is exactly how participants described it: the amount of food is protected first and variety is sacrificed, with children still getting eggs while adults eat less preferred foods. Children ate more meals than adults in every gap band. Adults absorbed the shortfall first.

Deprivation extended well past the plate. Among severely constrained households, 94.5% had reduced portion sizes at least once in 30 days, 90.9% had bought cheaper foods, 86.4% had skipped meals, 84.5% had reduced variety, 79.1% had borrowed or used credit, 51.8% had postponed health care, 47.3% had postponed school or utility payments and 44.5% had sold assets or drawn on savings. Among households with no gap the equivalent figures ran between 8.3% and 14.5%. The health postponement gradient matters most for the argument in section VI, since a shortfall in the food budget converts into deferred medical care for half the households carrying it.

Regression separates the two channels. Holding residence, special need and social protection constant, the affordability gap expressed as a share of the basket predicted coping intensity strongly ($b = 8.39$, $p < .001$), while the lived access index contributed independently though more modestly ($b = 0.59$, $p = .027$); together they explained 64.5% of the variance. For dietary quality the two channels were closer in size: nutrient dense food group days fell by 1.89 days with unaffordability and by 2.23 days for each point of lived access constraint, both significant at $p < .001$. Deferred health care was driven by the size of the shortfall ($b = 0.68$, $p < .001$) rather than by friction. Money appears to determine how much a household gives up; friction shapes what it gives up.

Comparable burdens did not produce comparable consequences. Among the 208 households whose shortfall exceeded half the basket cost, urban households recorded a coping score of 10.05 out of 24 against 9.22 in rural ones, and 49.4% of urban households in this group had postponed health care against 39.1% of rural ones. Rural households in the same position ate slightly better, at 18.7 nutrient dense food group days against 18.1, which is consistent with the higher value of food they obtained from their own production. These differences are not large and we would not press them hard. They point in a direction the next section takes up: an identical measured deficit does not end in identical deprivation.

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Table 5

Dietary and deprivation outcomes by depth of the affordability gap

Outcome	No gap (337)	Small, ≤500 (52)	Moderate, 501–1,500 (141)	Severe, >1,500 (110)
Meals eaten yesterday				
Adults	2.39	2.38	1.92	1.77
Children	2.54	2.54	2.20	1.93
Days of consumption in last 7 days				
Staples, roots and tubers	6.01	6.17	5.73	5.61
Fish, meat or poultry	4.37	4.65	3.63	3.64
Eggs	3.43	3.37	2.98	2.59
Fruits	3.15	2.88	2.42	2.15
Milk or dairy	2.87	3.00	2.21	2.02
Nutrient-dense food-group days (0–42)	**22.8**	**23.1**	**19.3**	**17.8**
Coping in last 30 days (% at least once)				
Reduced portion sizes	14.5	25.0	66.0	94.5
Bought cheaper or less preferred foods	12.2	30.8	73.8	90.9
Skipped meals	13.4	23.1	57.4	86.4
Reduced dietary variety	12.8	11.5	61.0	84.5
Borrowed or used credit	12.5	17.3	49.6	79.1
Postponed health care or medicines	11.6	25.0	36.9	51.8
Postponed school, utility or transport payments	11.0	15.4	31.2	47.3
Sold an asset or drew down savings	8.3	21.2	29.8	44.5
Mean coping score (0–24)	**1.87**	**3.10**	**7.55**	**10.82**

Note. Gap bands are in GH¢ per month.

4.2 Discussion

Taken one at a time the objectives report a cost, a distribution, a set of judgements, a measurement discrepancy and a consequence gradient. Read against each other they support several claims that none establishes alone. Start with the discrepancy, because it reframes an old complaint. The affordability ratio measures a resource deficit; the lived access items measure the friction through which a deficit becomes deprivation. They share about a quarter of their variance, and the regressions show both acting on outcomes at once but differently, with deficit governing how much a household surrenders and friction shaping which surrender it makes. The long standing objection that affordability metrics miss lived experience (Tuholske et al., 2020; Agyapong et al., 2024) has usually been read as an accuracy problem to be fixed by refining the ratio. Our evidence suggests it is closer to a dimensionality problem. A better single number would not have located the households with more than twice the resources they needed and severe practical constraint on obtaining food, because no resource ratio is built to see them.

Sharpest of the empirical results is the divergence between the two burden metrics. Burden was concentrated at −0.594 while the food budget share was flat at 0.007, computed on the same households in the same month. One recorded a steep gradient and the other recorded none. Headey et al. (2024) established that methodological choices move prevalence estimates; what this adds is that the choice also determines whether inequality in burden is visible at all. A programme designed around food share thresholds is not a slightly less accurate version of one designed around resource ratios. It is looking at a distribution with the slope taken out.

That measurement finding connects to the region's absence from national monitoring, and this is where the study moves from method to ethics. The Central Region was left out of Ghana's 2025 comparisons for want of price data, and the estimates here show what the omission concealed: a lean season basket 22.0% dearer than the harvest basket, an urban premium of 12.2%, and a rural unaffordability rate of 53.6% higher than either other stratum. None of that could have been inferred from a national mean. Measurement is not a neutral precondition of policy but a distributive act, and households recognised as much. Given a choice between funding an unmonitored region and a monitored one, 36.7% chose the unmonitored region and 12.5% the monitored one. That respondents in an unmonitored region reasoned this way without being prompted is the observation we find most theoretically loaded.

A fourth pattern emerges from putting three things side by side. Within households, scarce food moved toward need, with children eating more meals than adults in every gap band. In judgement, majorities endorsed need based allocation across two vignettes, and 41 of 48 interviewees accepted some differentiation. In practice, transfers reached 10.9% of the poorest quintile and 18.8% of the richest and offset 3.2% of the mean shortfall. Households were operating a prioritarian rule that the transfer system was not. The targeting debate is usually framed as an egalitarian public resisting a technocracy that wants to target; here the gap runs the other way.

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These results engage the theory in three ways. They extend equal consideration by identifying a precondition the principle does not contain. Equal consideration requires that comparable interests carry comparable moral weight (Singer, 2011), and it presupposes that the interests are known. The Central Region case shows what happens when they are not: a region's nutritional interests could not be weighed against others because the instrument that makes weighing possible did not cover it. That is not a failure to apply the principle but a condition the principle is silent about. Applied to public policy instead of individual conduct, equal consideration seems to us to generate a derivative institutional duty to measure. Where a state runs a monitoring system that determines which populations become comparable, systematic exclusion from that system removes a population's interests from the calculus before any weighing occurs. We offer this as a friendly extension, not a refutation.

They also discipline the consequentialist premise in a way that strengthens it. Singer's (1972) argument turns on preventing serious harm where doing so costs nothing of comparable importance. The results supply the empirical link Ghanaian food research has generally assumed: half of severely constrained households postponed health care, and the size of the shortfall, not the friction around it, predicted that postponement. At the same time, the same households repeatedly warned that support financed by pushing retail prices below cost recovery would harm traders and farmers. The comparable importance clause is doing real work here, and it points toward transfers and infrastructure, not price suppression.

The partiality objection turns out to be more complicated than the literature anticipates. Berkey (2018, 2021), Molefe (2016, 2017) and Lange (2022) each press, in different registers, the claim that special obligations resist impartial reasoning. Our evidence does not support the version usually applied to distributive policy. Intra household allocation was not simply partial; it was need sensitive in a direction equal consideration would endorse, protecting children and members on medical diets over earners. Twenty of 48 participants described sharing that aims at equality but bends to need, and none described allocating by economic contribution. What partiality produced instead was a distortion of another kind: family and community support, on which 6.1% of households mainly relied, was no more available to households that could not afford an adequate diet (8.9% reported strong support) than to those that could (7.7%). Fifteen interviewees said as much, observing that informal help can hide hardship in the statistics while remaining unreliable. The relational critique holds as description and does not convert into a remedy. Obligation exists; it does not scale with need.

Against the wider literature the study affirms more than it challenges. It supports and localises the global finding that healthy diets exceed the reach of a large share of households (Bai et al., 2021; FAO et al., 2026), while showing why a national aggregate cannot substitute for a regional estimate, since the seasonal amplitude inside this one region exceeds the difference between its own urban and rural markets. It supports Hannah et al. (2022) on the persistence of open air markets, with 55.2% of households naming them as their main source. It corroborates McCullough et al. (2024) by a different route: the flat food budget share combined with the steep resource gap suggests that what separates households is not the price they face, which is common to everyone in a given market, but the resources they bring to it. Where it pushes back is on the assumption that lived poverty indicators and consumption-based measures broadly converge. Agreement held for three quarters of the sample and broke down for the rest, and it broke down precisely among the households whose treatment is most contested.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study asked what an adequate diet costs in Ghana's Central Region, how that cost is distributed, how households judge the resulting burden, whether standard metrics track lived access, and what the burden does to those carrying it. It answered all five for a region that Ghana's own monitoring left out. An adequate diet cost GH₵10.84 per person per day on locally collected prices, varying by 30.6% across the year and 12.2% between urban and rural markets. Just under half of households could not meet it, the poorest fifth carried 58.2% of the shortfall, and transfers reached the richest quintile more often than the poorest while offsetting 3.2% of the mean deficit. A quarter of households were sorted differently by the metric and by their own accounts. And the burden showed up as fewer meals, thinner diets and postponed health care along a gradient steep enough to leave little doubt about its consequences.

Theoretically the study delivers the integrated empirical and ethical account the literature lacked. It confirms a premise Ghanaian food research had assumed but not measured, by showing that the size of a household's food shortfall predicts deferred medical care. It qualifies the partiality critique by showing that obligation inside households runs toward need and not against impartiality, while informal support fails to scale with hardship. And it extends equal consideration with an institutional duty to measure and a friction adjusted delivery rule, neither of which the original formulation contains. For the Central Region the practical contribution is a working evidence base where none existed. District assemblies now have a seasonal cost profile identifying June to August as the months when assistance matters most and December to February as the months when it can be scaled back. The Regional Coordinating Council has a

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stratum specific estimate showing rural exposure at 53.6%, which cannot be read off any national figure. Social protection administrators have a documented mismatch between coverage and need that is actionable at the level of the eligibility formula, not the budget envelope. Market authorities have a costed account of the small unit price penalty and the transport constraint. And the price protocol is cheap enough to keep running.

Implementation has a natural sequence. In the immediate term, restore Central Region price collection through district agriculture directorates and replace food share eligibility rules with resource based ones in existing assistance programmes. In the medium term, index transfer values to measured shortfalls, publish the eligibility formula with community validation and appeals, and introduce certified small unit retailing alongside storage at aggregation points. Over the longer term, sustain the gains through feeder road maintenance, market information services and a statutory minimum coverage rule preventing any region from being dropped from national monitoring for want of data. Current policy requires only the first two steps. Future policy requires the coverage rule and a standing budget line for regional price collection, without which the evidence base that makes any of this possible will lapse again.

How far the findings travel should be claimed carefully and can be claimed usefully. The cost estimates belong to the sampled markets and the sampled year. The mechanisms do not. Any monitoring system that determines which populations become comparable will produce the visibility problem documented here. Any targeting rule built on food share thresholds will be blind to concentration in the same way. Any cash transfer delivered into a market with transport, package size and credit frictions will underperform its own design for the same reason. Those propositions should apply to Ghana's other under covered regions, to comparable coastal and forest districts in West Africa, and to the wider social sector. That includes education, through which food costs already travel: nearly half of severely constrained households postponed school and utility payments to protect the food budget, which makes food affordability a determinant of educational participation and not only a nutrition concern.

Our position is simple enough to state. Food affordability in the Central Region is not primarily a price problem and cannot be solved as one. It is a distribution problem, compounded by a measurement problem, and delivered through a market with frictions that cash alone does not cross. Singer's principle of equal consideration remains the right standard for judging it, once extended with a duty to measure and a friction adjusted delivery rule. Applied to Ghana more broadly, that standard yields a clear judgement: a monitoring system that omits a region, and a transfer system that reaches the comfortable more often than the deprived, do not fail because resources are scarce. They fail because comparable nutritional interests are not yet being given comparable weight.

5.2 Recommendations

Recommendations follow the objectives in order (Table 6). Each states the action, the body responsible, the implementation route and the condition on which its sustainability depends.

Table 6

Recommendations, implementation strategies and sustainability measures

Objective and recommendation	Implementation strategy	Sustainability measure
Objective 1 — Cost and affordability. Reinstate Central Region price collection and publish seasonal rather than annual diet cost figures. Ministry of Food and Agriculture, with the Central Regional Coordinating Council.	Use the protocol validated here: four markets across the three strata, twelve core items, three independent vendor quotations weekly, with local units weighed directly. Publish quarterly, showing lean and harvest ranges separately, and report a locally adapted basket alongside the national one.	Embed collection in district agriculture directorates and contract market queens and trader associations as enumerators on a stipend, so marginal cost stays low and capacity remains once project funding ends. Legislate a minimum coverage rule so no region can be dropped for want of data.
Objective 2 — Distribution of burden. Replace food share thresholds with resource-based eligibility and index assistance to the measured shortfall. Ministry of Gender, Children and Social Protection; LEAP management; district assemblies.	Define eligibility as resources remaining after essential non-food spending relative to the locally priced basket. Set transfer values as a stated proportion of the assessed shortfall rather than a flat rate, and re-rank the register against the new formula before the next enrolment cycle.	Automate annual revaluation against the published basket so transfer values do not erode with inflation. Audit coverage by income quintile each year and publish the result, since the counter-targeting found here is invisible without that check.
Objective 3 — Fairness and legitimacy. Make targeting criteria public and contestable. District assemblies, social welfare offices and community targeting committees.	Publish the eligibility formula in plain language and in Fante at the assembly and in participating markets. Hold a community validation meeting each enrolment round and run a documented appeals route with a stated response time.	Constitute validation committees with fixed, staggered membership drawn from market associations, traditional and faith authorities and beneficiary representatives, so legitimacy does not depend on the incumbent administration.

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Objective 4 — Metric versus lived access. Add a short lived-access module to routine assessment and pair cash with friction-reducing measures. Ghana Statistical Service; Ministry of Food and Agriculture; district market authorities.	Append the five constraint items used here to household assessment instruments and report them beside the affordability ratio rather than folding them into one index. Introduce certified small-unit retailing with verified measures, storage at aggregation points, and market boards giving current prices per standard unit.	Fund small-unit certification through a modest market-levy rebate so compliant traders gain rather than lose, protecting margins while removing the unit-price penalty. Tie feeder road maintenance for market-serving routes to a recurrent district budget line rather than periodic capital projects.
Objective 5 — Consequences of burden. Protect the health and schooling expenditures households sacrifice first, and target seasonally. National Health Insurance Authority; Ghana Education Service; district assemblies.	Waive or defer premiums and point-of-service payments for households on the resource-based register, since half of severely constrained households postpone care. Scale assistance up over April to August and down over the harvest months, using the seasonal profile published under Objective 1.	Integrate the affordability register with health insurance and school feeding enrolment through a shared identifier, so a household qualifies once rather than repeatedly. Review the seasonal calendar every three years against updated price data.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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