

1 **Socio-Economic Drivers of Poverty and Food Insecurity: Nigeria a Case Study**

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8 **Abstract**

9 This narrative review paper considers the link between poverty and food security in urban
10 and rural Nigeria, with emphasis on the economic (food availability & accessibility), social
11 (people related factors) and environmental (effective resource use) implications. This study
12 suggests that appropriate governance mechanisms must be put in place while developing
13 strategies and policies to address problems of poverty and food insecurity in Nigeria.
14 Improving infrastructure, mitigating the impact of continuing population growth, and uneven
15 distribution of income, and identifying opportunities for education are important components
16 to consider in developing food security policies and strategies for the Nigerian people.

17 **Key words: poverty, food security, food poverty, livelihoods, infrastructure, migration**

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20 **Introduction**

21 Poverty is the state or condition of being “poor.”^[1] Poverty reflects the inability of
22 individuals or communities to afford or meet the minimum needs that are classified as
23 reasonable human requirements, based on the nature of the society that people find themselves
24 in.^[2] Poverty is a threat to the human population, it is complex, multidimensional, multifaceted
25 and it reveals its challenges in economic, social, political and environmental aspects of human
26 existence.^[3] Further poverty is ‘the failure of basic capabilities to reach minimally acceptable
27 levels,’^[4] introducing the question as to whether acceptable livelihood levels can be determined
28 as economic or social constructs, or indeed quantifiable indexes. Poverty can be “absolute” or
29 “relative”, i.e. deprivation can be described as “the poverty line,” determined as a distinct
30 income level or amount of consumption.^[5] Relative poverty is then a wellbeing measure that is
31 expressed in terms of income, consumption, or welfare terms.^[6] Poverty as a construct is thus,
32 multidimensional and influenced by a wide range of factors including lack of access to earning
33 income, productive resources and activities that are adequate to underpin sustainable
34 livelihoods and/or essential social services such as housing, health care and education.^[7-8] In
35 this context, sustainable livelihoods encompass adequate nutrition and health and a defined
36 level of civic, cultural and social inclusion.^[7]

37 In order to avoid poverty, basic goods and services need to be congruent with the degree
38 of social participation, and inclusion of individuals within society.^[9] Within any social setting,
39 the standard of living may vary based on (a) the availability or provision of goods and services
40 (b) the price of food and other forms of goods, and (c) social norms.^[2] Poverty has
41 conventionally been viewed as being financially driven i.e. as a consequence of insufficient
42 income for individuals and households to secure basic goods and services that realise some
43 level of satisfaction. The concept of a poverty line i.e. a given monetary value that references
44 a given level of personal welfare for ‘a given person, at a given place and time’ that

45 differentiates those who are in need from those who are financially secure.^[10] If poverty is seen
46 purely as a function of income, then economic instruments can be used to rank consumption
47 and expenditure of people, households, communities and nations^[10] i.e. stakeholders can
48 simply frame poverty, or indeed relative poverty as an income level. Examples include the
49 World Bank derived metric of the number of global citizens with an income of less than \$1/day
50 or as amended later \$1.25/day.^[11] However, the Millennium Development Goals (MDGs) and
51 the Sustainable Development Goals (SDGs) were developed based on a multidimensional view
52 of poverty and its mitigation.^[11] The literature identifies that there are also social and structural
53 drivers that interface with poverty so as a result, Olowa (pg 25) asserts that poverty can be seen
54 as ‘the outcome of inefficient use of common resources ... [resulting].. from weak policy
55 environment, inadequate infrastructure, weak access to technology, credit etc.’^[10]

56 ***Food security***

57 Security can be described as the “secure ownership of, or access to, resources and income-
58 earning activities including reserves and assets to offset risk, ease shocks and meet
59 contingencies.”^[12] The Food and Agriculture Organization of the United Nations in 2001
60 defined food security as “a phenomenon that occurs when people have access physically and
61 economically at all times to safe, nutritious and enough food to meet their dietary requirement
62 for a healthier life.”^[13] This definition illustrates the different concepts of food security at the
63 household level where, it considers both food availability and its affordability.^[14] In addition,
64 this definition can scale to reflect the status of communities, state and country level. Food
65 security consist of four major dimensions/or elements namely: availability,
66 accessibility/affordability, utilization and sustainability. While food availability reflects the
67 physical presence of food; food access implies the ability to acquire food in the right
68 proportion; food utilization indicates food sufficiency in both quality and quantity and
69 sustainability refers to the uninterrupted access at all times to food.^[15-16] Historically, the term

70 food security came into existence at the World Food Conference in 1974, being defined in
71 terms of food supply as: the availability at all times of food supplies in good quality and
72 quantity to sustain a steady expansion of food consumption and to balance fluctuations in
73 production and prices.^[15] More simply, the report states:

74 “food security occurs when all people, at all times, have access to sufficient, safe and
75 nutritious food both physical and economic, which meets their dietary needs and food
76 choice for an active and healthy life.”

77 Food availability, affordability, accessibility, utilization and wider notions of sustainability
78 are the essential elements of food security and reflect a wide range of interrelated economic,
79 social and environmental factors affecting the food security vulnerability of any household or
80 community.^[17-18] A study in Nigeria showed that only 53.3% of rural households (53.3%) and
81 62.2% of urban households are able to meet the recommended food intake calorie measurement
82 of 2500Kcal per capita per day.^[19] Factors that influenced food security status of households
83 in this study were age, household size and household income; as well as environmental factors
84 of influence (limited land availability for the expansion of agricultural activities, unfavorable
85 climatic and weather conditions and the potential for animal/crop disease) and economic
86 influencers (poverty, lack of private or non-farm income generating income, problems arising
87 with processing and/or storage, and poor access by farmers to credit compounded by war and
88 crisis and limited access by women to farmland).^[19]

89 ***Food poverty***

90 Household food poverty is driven primarily by low-income growth and inadequate
91 price controls of common food staples; this challenge being a common phenomenon in Africa
92 and around the world.^[20] Food poverty is defined as the incapacity to access, afford, make or
93 prepare food^[21-22] and is often experienced as a result of a shock or a more prolonged squeeze

94 situation in food supply chains leading individuals to become food poor.^[23] A “shock”
95 represents a sudden socio-economic or environmental situation that leads to food poverty such
96 as war, earthquake or natural disaster, an event that causes harvest loss or failure or a
97 government payment sanction that can result in the need to source or rely on support or food
98 aid. Squeeze situations arise from the presence of long-term food insecurity and extended
99 periods of food poverty, e.g. a prolonged low level of income/or reduction in financial funds
100 which lead to household food insecurity.^[23] Financial difficulty can arise from unemployment,
101 low income and debt.^[21] Social causes of food poverty include the lack of skills in household
102 food budgeting or food preparation, but those with very low incomes that are insufficient for
103 basic food needs find themselves in food poverty regardless of their skillset.^[23-24] Indeed,
104 multiple lifestyle and behavioral factors are of influence such as level of education and skills,
105 lifestyle choices and cultural acceptability.^[25] The physical and infrastructural causes of food
106 poverty lead to poor accessibility to good quality and affordable food^[23] especially food deserts
107 i.e. geographical locations with poor access to healthy and affordable food. This situation,
108 occurs mostly in areas with high deprivation, where there is limited food access together with
109 broader socio-economic inequalities.^[26]

110 ***Livelihoods***

111 The Advisory Panel of the World Commission on Environment and Development
112 define livelihood as the “adequate stocks and flows of food and cash to meet basic needs.”^[12]
113 A livelihood is simply a means of gaining a living, initially ascribed to an individual due to
114 birth situation, gender, socialization or inheritance, education, migration status or economic
115 agency.^[5] A livelihood is determined at the personal, household and community level and
116 research or policy instruments will often use the household as the unit of analysis, observation
117 or action.^[5] A sustainable livelihood can:

118 “cope with, and recover from stress and shocks, maintain or enhance capabilities and
119 assets, and provide sustainable livelihood opportunities for the next generation and which
120 contributes net benefits to other livelihoods at the local and global levels and in the short and
121 long term.”^[12]

122 Thus, livelihood strategies need to be resilient to economic, social and environmental
123 stresses and shocks. Livelihood resilience depends on an actor’s capacity and agency in a given
124 situation and having the *buffer capacity* i.e. the ability to decrease, cushion, soften, neutralise
125 shocks and squeezes and also the *adaptive capacity* to identify and utilise emergent
126 opportunities to maintain or increase existing assets and achieve better livelihood outcomes.^[27]
127 Building secure, sustainable, resilient livelihoods will reduce vulnerability to poverty so
128 improving livelihood strategies should reduce vulnerability to food insecurity too. The aim of
129 this narrative review is to explore how poverty and food insecurity are interlinked and mutually
130 persist as socio-economic conditions in rural and urban areas of Sub-Saharan Africa (SSA),
131 with particular focus on Nigeria as a case study. The research question considered here is:

132 *What are the socio-economic drivers of poverty and food insecurity in rural and urban*
133 *communities in Nigeria?*

134 This question is posed in order to postulate potential policy instruments that could address the
135 socio-economic challenges identified. Poverty can be transient or persistent and the factors of
136 influence situated in a given context as a result. The case study of poverty and food insecurity
137 in Nigeria is used in the next section of the paper as a lens through which to explore the situated
138 factors of influence identified in the literature in more detail.

139 **Nigeria, a case study**

140 *Background context*

141 Nigeria is in West Africa on the Gulf of Guinea borders Cameroon (1,690 kilometres) to
142 the east, in the Northeast, Chad (87 kilometres), in the North the Niger Republic (1,497
143 kilometres) and the Republic of Benin to the west with (773 kilometres).^[28] Nigeria's economy
144 is one of the largest in Africa, its military power ranks third in the continent, and Nigeria is the
145 largest African producer of crude oil and 10th largest producer globally.^[28] Nigeria has an
146 abundance of natural and human resources, and yet the majority of its citizens are living in
147 abject poverty.^[29] Though Nigeria is one of the largest and fast-growing economies in Africa,
148 the country's national poverty level in 2010 was 69%, highlighting the developmental
149 challenges faced by Nigeria, especially in attaining self-sufficiency in food production
150 (availability), access and affordability.^[30] The majority of Northern households in Nigeria are
151 food poor (84.85%), and over half of this population is without any formal education.^[20]
152 Indeed, the average annual per capita expenditure on food in the group in this study was 25,524
153 naira (or \$128.23), well below the World Bank derived metric of less than \$1/day or as
154 amended later \$1.25/day.^[11]

155 Nigeria is the most populous nation in Africa with a population in 2016 of 193.3 million.^[28]
156 In developing countries including Nigeria, the population in cities and suburbs (urban) is
157 anticipated to increase from 1.9 billion in 2000 to 3.9 billion in 2030.^[31] As the national
158 population increases, Nigeria's food demand also increases, while the ability to produce food
159 declines because of pressures from increasing population and net migration to urban
160 centres.^[29,31-32] Nigeria has experienced moderate industrialization aligned with rapid urban
161 growth. At the same time, the country's lack of focus on agriculture has resulted in many rural
162 dwellers migrating to cities in pursuit of work and higher paying jobs.^[33] These trends have led
163 to unplanned developments around and within urban cities and increased depopulation of the
164 countryside, leading to overcrowding, unemployment, infrastructural decay, and a decline in
165 urban services, exacerbating the problem of urban food insecurity.^[33]

166 Nigeria consists of three major city settings: urban, peri-urban and rural, with the majority
167 of people living in peri-urban and rural areas. The dual challenge of poverty and national and
168 household food insecurity is found in all these areas driven in part by the weak performance of
169 the Nigerian agricultural sector affecting availability and accessibility to food.^[34-35] Food
170 access in many Nigerian urban settlements includes formal markets (which are centrally
171 located in most cases), informal markets, subsistence urban food production and street food
172 vendors.^[33] Whilst the urban wealthy may access emergent supermarket channels with the
173 associated product standards, in contrast the urban poor mainly rely on these informal food
174 markets and street food vendors.^[33] In Nigeria, one major barrier is that food insecurity is often
175 been misconceived as a purely rural problem, so the focus has been on rural food insecurity
176 with most policy interventions targeting rural dwellers by trying to enhance their food
177 production capacity^[36], rather than focusing on a more holistic and nuanced approach. There
178 are several external factors (infrastructure, migration, and extension services) that frame
179 physical and financial performance on farm and these are now considered in more detail.

180 *Infrastructure*

181 Infrastructural development plays an important role in poverty alleviation, empowerment,
182 and economic development.^[37] Nigeria is generally characterised by inadequate and low
183 infrastructure development especially in terms of road, electricity, health care facilities,
184 educational facilities etc. significantly so in the rural parts of Nigeria.^[38] Poor infrastructure
185 influences poverty and a lack of capital investment in good road networks and transport
186 infrastructure, limited availability of electricity and/or piped bore-hole water, a lack of agro-
187 processing facilities or health care facilities impacts on community welfare and wellbeing^{[37,}
188 ^{39-41]} and the capability for agricultural development.^[42] Further the provision of good quality
189 road infrastructure would lead to a reduction in food waste, and allow access for farmers to the
190 necessary agricultural inputs (equipment, seeds, seedlings, and labor) at the appropriate

191 cropping period and the absence of such infrastructure currently is hampering food production,
192 distribution or supply.^[42] The lack of access to essential inputs for food testing, packaging,
193 grading and distribution represents another major challenge in the agro-processing industry,
194 hence limiting the ability to drive quality standards and add value within supply chains.^[43]

195 Rural-urban migration is also driven by factors such as lack of physical infrastructure,^[32]
196 and inadequate social infrastructure such as poor schools, and poor medical care services in
197 rural areas.^[44] Motives for rural-urban migration including socio-cultural issues where people
198 are forced to migrate to avoid social problems, pursuit of better economic opportunity and also
199 the low level of rural infrastructural development, lack of basic amenities and poor
200 transportation and communication facilities.^[45]

201 *Migration*

202 Migration is the movement of individuals or communities that involves either permanent
203 or semi-permanent physical and/or social change of residence from one place of settlement to
204 another.^[46] Migration can also be considered as crossing a boundary or region with aspects that
205 are spatial (distance), and others that are time bound (period of residence), or reflecting
206 permanence, suggesting a different aspect of time.^[47] In the Nigerian context, rural-urban
207 migration influences by food insecurity and poverty and is driven by over-supply of labor in
208 rural areas as a result of population growth, under employment or unemployment;^[32] variability
209 of work opportunity as a result of seasonal, social or economic change,^[31.44] a lack of education
210 opportunities;^[44] environmental degradation;^[32] and/or climate change.^[32] In reality, many
211 rural migrants do not find gainful employment and often reside in shanty-towns and slums that
212 are the homes of the urban poor.^[12] Significantly, urban poverty is rising and the urban poor,
213 urban unemployed and low-income earners in Nigeria utilise a good proportion of their income

214 on the procurement of food leading to food insecurity and an inability to purchase other basic
215 necessities.^[36]

216 In one study, just under a third of the people interviewed in Kaduna City, Nigeria were born
217 there (32.5%), and of the other two thirds, only 14.5% of immigrants had spent 30 years of
218 their lives in the city.^[31] Young rural males migrate to urban areas looking for white collar jobs
219 leaving the farming responsibilities to the female members of the family, reducing the
220 agricultural labor force and associated agricultural productivity, and this leads to a drop in
221 annual household income in rural areas and the continuous involvement of aged people in
222 farming activities^[44] which will affect food production productivity, another driver of food
223 insecurity in rural and urban areas.

224 *Extension services*

225 Nigeria's economic development over recent decades is predicated on oil resources
226 and, as a result, the agricultural sector has been largely neglected. Food security for the
227 Nigerian population is addressed largely through food trade and net food imports.^[48]
228 Industrialization and urbanization trends have led to a lack of investment in agricultural
229 production and also poorly developed market access especially to urban markets.^[49] Overall,
230 the drop in the performance of the Nigerian agricultural sector has brought food shortages, and
231 low agricultural performance has an indirect effect on agricultural food supply and marketing.
232 Due to the high cost of food/produce preservation and transportation, food reaching urban areas
233 increases in price, leading urban households to cut down on their budget for other household
234 purchases to afford food.^[35.50] Intense soil utilization allied to poor agricultural practices
235 diminishes soil resources,^[31] more so where climate change and erosion further threatens food
236 production and supply level. In summary, in Nigeria, within country food production is not
237 sufficient to meet the demands of the ever-growing population.^[51-52]

238 The first National Development Plan of 1962-1968 focused on industrialization and the
239 exploitation of Nigeria's abundant resources to improve living standards as against an
240 agricultural sector that had a GDP growth targeted at 4% per annum.^[53] [27]. In essence,
241 investing in the agricultural sector was not the focus of the Nigerian government at that time.^[48]
242 Instead, the provision of infrastructural facilities was the pivotal development focus. Following
243 a civil war and associated food shortages, the second National Development Plan between
244 1970-1974 targeted the development of the agricultural sector in order to promote food
245 production. However, the Nigerian government only allocated 7.7% of budgetary spend to
246 agriculture, in comparison to the transport sector (23%) and this suggests that the Nigerian
247 government focused more, as previously state, on food importation rather than strengthening
248 the country's capacity to produce food.^[54]

249 The National Accelerated Food Production Project (NAFPP) that began in 1974 purely
250 focused on assisting the supply of agricultural input resources and for education of farmers.^[55]
251 ^{56]} As a result of poor planning and the untimeliness of the provision of extension service to
252 farmers, the project failed to achieve this objective and a year later the failure of this program
253 led to the unveiling of the Agricultural Development Programme (ADP) with a better approach
254 to agricultural development compared to the NAFPP.^[55] The ADP led to the setting up of 470
255 agricultural extension service centres over the next ten years. Other later agricultural programs:
256 Operation Feed the Nation (OFN) in 1976, and the Nigerian Green Revolution-1980 fell within
257 the policy initiatives of the third Nigerian National Development Plan from 1975-1980. The
258 shift in these policies included the promotion of farmer subsidies and incentives to improve of
259 food production but due to weak governance they had limited impact. After this time (1962-
260 1986), the Nigerian government promoted the agricultural sector through fiscal plans to
261 enhance sustainable investment in agriculture via commercial bank lending to farmers at

262 reduced interest rates, tax reduction and the subsidization of agro-inputs by government
263 agencies such as the Federal Ministry of Agriculture and Rural Development.

264 In terms of extension service delivery in Nigeria, the agricultural system was structured
265 with several policies, one of which is the National Agricultural Policy approved in 1988. The
266 goal of this policy was to structurally transform rural areas in terms of socio-economic
267 development, agricultural credit and insurance schemes, poverty alleviation, targeting rural
268 self-sufficiency as well as increased production of raw material and addressing environmental
269 threats to food security and combining the development of rural areas and the agricultural
270 sector in general.^[56] At the same time, agricultural research institutes, colleges and universities
271 of agriculture were created/established in a bid to promote modern agricultural practice and to
272 established modern techniques/technologies within the agricultural sector and ensure adequate
273 supply of manpower.^[57]

274 Agricultural extension as a system of farmer information, communication, information
275 sharing, skills transfer, teaching and advising on new and improved practices, ideas/technology
276 and research findings is expected to drive increased productivity, sustainable development,
277 income and as a result the livelihood of farmers^[40,44,58-59] essentially via a “rural-urban” and
278 “urban-rural” information linkage system. Agricultural extension can improve decision-
279 making in order to drive agricultural development^[60] and can link farmers to markets and other
280 actors such as aggregators and processors in the agricultural value chain.^[40] One of the factors
281 of influence on agricultural productivity and practice is farmers’ perception of the level of agro-
282 support they can access,^[61] but in many developing countries like Nigeria, smallholder farmers
283 in rural areas are largely without such support.

284 The Nigerian Government provides extension services to farmers through its agricultural
285 development programme (ADP). Private extension organizations also provide extension

286 services to farmers through agro-input dealers and associations.^[40] Historic Nigerian extension
287 services can be divided into three categories: (a) public sector extension, (b) private agencies
288 (in it for benefits), and (c) private organization non-profit sector extension services.^[62]
289 Examples of the types of extension service in Nigeria include: training and visit (T&V)
290 extension, University operated extension, Ministry of Agriculture operated extension,
291 Commodity/Sectoral agency extension, Special programme for food security (SPFS),
292 Sasakawa Global 2000 (SG 2000), and Community based agricultural and rural development
293 approach (CBARDA).^[63]

294 The Nigerian extension system is characterised by certain challenges which include: fund
295 inadequacy and instability, poorly trained extension personnel, lack of transportation support
296 for field staff, inappropriate technology channelled to farmers, poor extension service staff ratio
297 to farming households, poor communication (bottom-up approach) between extension staffs
298 and farmers, irregular evaluation of extension programs etc.^[58] One study shows that the Lagos
299 State Agricultural Development Authority (LSADA) has good linkages with agricultural
300 research agencies, private sector input supply firms, and cooperatives/consumer organizations;
301 whilst it has poor linkages with agricultural universities, schools and colleges, private sector
302 markets/exporters, non-governmental organizations (NGOs), local government
303 agencies/authorities, banks/micro-finance institutions, and other public/semi-public extension
304 service organizations.^[60] This shows that that there is a potentially a gap between extension
305 services and the education and institutional systems in Nigeria.

306 **Discussion**

307 In the Nigerian context, food security can be characterised as uninterrupted access to
308 food (availability and affordability) for households either through own farm production or
309 market supply. However, food security has continued to be a major developmental challenge

310 in Nigeria, subverting the health, survival and productivity of individuals and communities.^[20]
311 This narrative review has shown that in Nigeria a vast range of factors influence food security.
312 These include low food production levels, seasonality in food availability, increased post-
313 harvest food loss, increase in price of food, the rate of unemployment, the quality of health care
314 facilities and nutrition education, and the quality of extension service delivery. These factors
315 are further influenced by local taboos and cultural factors.^[64] Unstable policy formulation and
316 poor agricultural policy implementation, and a lack of government strategy has led to food
317 insecurity problems.^[65] The effectiveness of the Nigerian agricultural system has been
318 questioned over time and much could be attributed to the absence of adequate articulated
319 extension policy as a pivot for agricultural development, which is clearly lacking in the
320 Nigerian agricultural sector, in the past and current times.^[57] Therefore governance
321 mechanisms must be adopted that enhance the development of social and human capital in the
322 Nigerian agricultural sector and this must combine indigenous knowledge and skills with more
323 general knowledge and skills that may currently sit outside the agricultural community.^[66]

324 It is important when developing food insecurity and poverty alleviation strategies that
325 there is appropriate governance i.e. policies need to be formulated in order to create a roadmap
326 for the provision of the basic necessities of life.^[56] Multiple policies are required to catalyse
327 reversing the decline in productive growth of the Nigerian economy; improving industrial
328 capacity utilization, reducing poor infrastructure and reducing inflation all need to be
329 implemented to reduce child poverty.^[41] Further, policy needs to address population growth
330 and its impact on resource demand; the uneven distribution of income; minimise political, civil
331 and ethnic clashes and political instability; and how to reduce illiteracy levels across Nigeria
332 and eliminate bad governance and corruption that diverts sorely needed state resources.^[41]
333 Existing food and agricultural policies have not had a major impact on food availability in
334 Nigeria and policy needs specifically to focus on supporting farmers' access to finance.^[50]

335 Initiatives could include commercial bank lending to agriculture, agricultural credit guarantee
336 scheme fund loans and foreign exchange measures. Inherent in this narrative review is
337 addressing the research question

338 *“What are the socio-economic drivers of poverty and food insecurity in rural and urban*
339 *communities in Nigeria?”*

340 The drivers identified in this paper have been drawn together in Figure 1.

341 **[Figure 1 near here]**

342 The interaction between food insecurity, poverty and rural and urban livelihoods is
343 central to the argument put forward in this paper. A good understanding of urban-rural food
344 insecurity, its interface with poverty and the linkages, will help to deliver better strategies for
345 successful policy, intervention and aid provision.^[31] Affordability and availability of food is
346 influenced primarily by the mass balance of food production and the amount of food imported
347 or exported from the country, and then the proportion of pre and post harvest loss in the supply
348 chain or food waste in the domestic situation.^[67] Whilst three factors, infrastructure, migration,
349 and extension services, that frame physical and financial performance on farm have been
350 considered in this paper, it has allowed for the analysis of a range of other factors of influence
351 that are mapped in Figure 1. One factor that has multiple interactions is inadequate
352 infrastructure at the national, urban and rural scale in Nigeria. The four elements of food
353 security are highlighted in orange in the figure. Poverty has been highlighted in blue with the
354 associated interactions shown in Figure 1. The lack of resilience associated with both poverty
355 and food insecurity in Nigeria stems from the lack of adaptive capacity to identify and utilise
356 emergent opportunities to achieve better livelihood outcomes.^[27] This limitation to develop
357 personal, household or community livelihood resilience reflects not only a lack of adaptive
358 capacity, but also limited buffer capacity to be resilient in the face of financial, environmental,

359 political and social shocks and squeezes, especially climate change.^[68] Developing appropriate
360 policy initiatives to improve livelihood strategies should reduce vulnerability and build secure,
361 sustainable, resilient livelihoods that will reduce poverty and food insecurity.^[69]

362 **Conclusion**

363 This narrative review has positioned how poverty and food insecurity are interlinked and
364 mutually persist with particular focus on Nigeria as a case study. Potential policy instruments
365 have been postulated that operate at the urban, rural and rural-urban scale. Improving
366 infrastructure, mitigating the impact of continuing population growth, and uneven distribution
367 of income, and identifying opportunities for education are important components to consider
368 in developing food security policies and strategies for the Nigerian people. Whilst national food
369 production and economic growth have a role to play in addressing food insecurity and poverty
370 in Nigeria in order to improve livelihoods the multiple factors that operate and interact require
371 a very nuanced policy approach. Options have been considered in this paper that can be
372 combined to produce a cohesive governance structure to mediate and alleviate food insecurity
373 and poverty in Nigeria.

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375 All authors have given approval to the final version of the manuscript.

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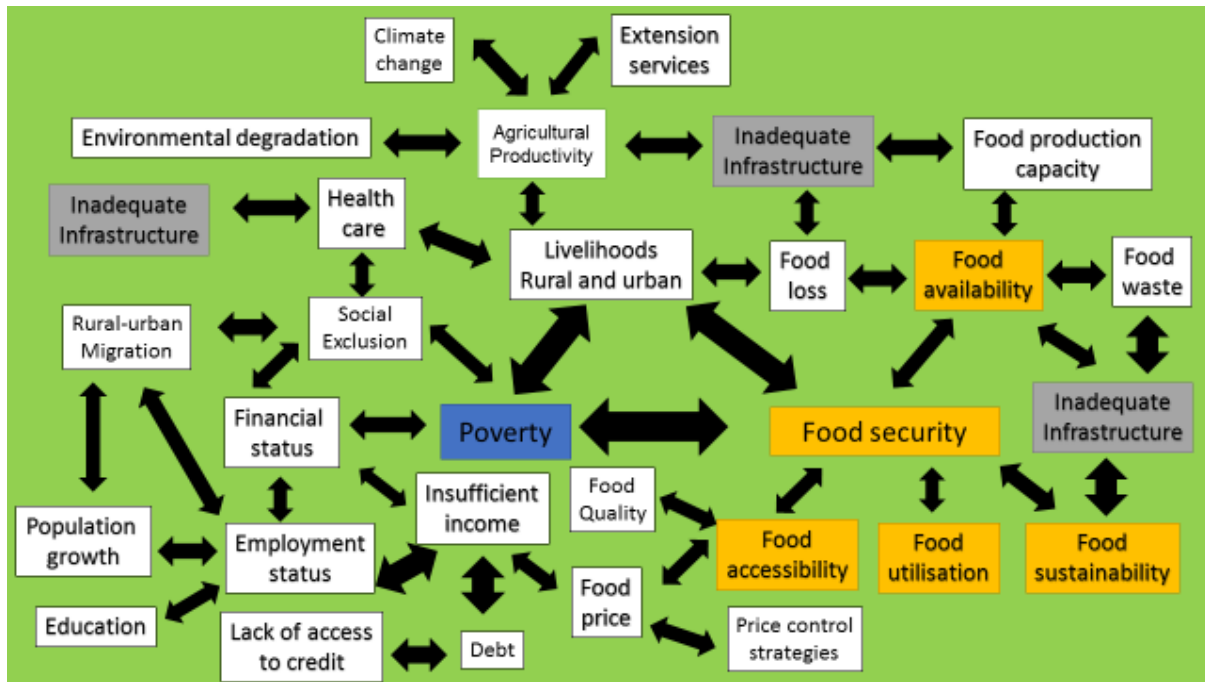
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Figure 1. Interacting socio-economic drivers of poverty and food insecurity in rural and urban communities in Nigeria

569