The Scope of Hidden Hunger in Zambia

Lincoln JF*

Academic Member, Sociology Research Unit, Athens Institute for Education and Research, (ATINER) Athens Greece

*Corresponding author: Lincoln J Fry, Academic Member, Sociology Research Unit, Athens Institute for Education and Research, (ATINER) Athens Greece, Email: Lincolnfry@Bellsouth.Net

Abstract

Hunger is a worldwide problem, and Africa is the continent with the world's highest percentage of hungry persons; Zambia is the research setting, particularly because in 2016 it was ranked the third hungriest country in the world by the Global Hunger Index. This paper addresses hunger in that country, especially hidden hunger, and then identifies the factors that predict hunger. Rural respondents will receive some attention because of the literature's suggestion that African farmers may be hungrier than the rest of the population; gender is another focus for the same reason. The objective is to search for policy related factors that might help alleviate Zambia's hunger problem. To preview the results, 56percent of this Zambian sample reported some degree of hunger, with 10 percent indicating they are always hungry. Four factors emerged as predictors of hunger. In order they were age, education. Ownership of certain assets and respondent assessment of how the government was handling the problem of raising the living standards of the poor. The Spector of the HIV/AIDS epidemic looms over the study's results and recommendations for possible governmental actions designed to address the hunger problem in the future.

Keywords: Zambia; Hunger; Rural; Agriculture; Farmers

Introduction

In 2016, the Global Hunger Index rated Zambia as the third hungriest country on the planet. Poverty and food insecurity are widespread in both rural and urban areas. As Kangwa (2017) [1] stressed, little has been done by the government in Zambia to reduce poverty and to improve food security. It is not unfair to see the country as a "train wreck", especially in terms of health. The chronic malnutrition prevalence for children under age five is ninth highest in the world at 45.4 percent. Some 53 percent and 46 percent of Zambian children have Vitamin A and iron deficiency respectively, compromising their long term development. Standard national statistics for malnutrition levels amongst under-fives are 5 percent wasting, 28 percent underweight and 47 percent stunting (low height for age). In addition, the national HIV prevalence rate is ranked seventh globally at 12.7 percent.

Hunger is the major problem this paper assesses, and it is the third paper in a series that included Like the previous two papers this study is based on self-reported hunger indicated in Zambia respondents and the analysis identifies factors that predict hunger in that country. Even though Zambia has been somewhat neglected, the literature devoted to what is commonly called food insecurity will be reviewed. Some of the issues raised in the African food insecurities literature will be addressed

and are question central to this paper's analysis. These include whether rural residents, especially agricultural workers, are hungrier than other Zambian respondents, as well as whether there are gender differences in the degree of hunger. The discussion section will attempt to answer the question as to whether this paper has any implications or adds any knowledge about hidden hunger in Zambia.

Hunger in the World and Africa

According to the WHES (World Hunger Education Service) World Hunger and Poverty Facts and Statistics [2], hunger has three meanings. Two of those meanings deal with craving or desire for food. The third meaning refers to the want or scarcity of food in a country, and it is in this sense that this paper addresses hunger. There are two classifications of hungry person that are of interest here. The broadest classification includes those who suffer from what is known as "hidden hunger." Since this paper utilizes a self report measure to assess hunger, the results reported in this paper may be seen to more closely reflect hidden hunger. These are an estimated two billion persons that are affected by a chronic deficiency of essential vitamins and minerals. Among this population the signs of malnutrition and hunger are less visible, but it has negative and long term consequences, often for long term health, productivity and cognitive development [3]. The second classification includes those who demonstrate clear cut hunger; in the latest UN Food and Agriculture Organization [2], the estimate was that 925 million people were hungry worldwide, and that 239 million people in sub-Saharan Africa were hungry or undernourished. This made Africa the continent with the second largest number of hungry people, following Asia and the Pacific with 578 million. Due to the difference in population sizes, Sub-Saharan Africa actually had the largest proportion of hungry/undernourished people, estimated at 30 percent of the population compared to 16 percent for Asia and the Pacific.

Food Insecurity in Sub-Saharan Africa

As Clover (2003) [4] has suggested, despite the fact that the right to food is one of the most consistently acclaimed assertions in international human rights law, no other human right has been so frequently and spectacularly violated. Her discussion of food insecurity in Sub-Saharan Africa leads to the conclusion that hunger is a multi-faceted issue in Africa, and that just growing more food will not eradicate the problem. Agriculture is important and Clover points out that Africa has gone from being a key agricultural commodity exporter into being a net importer; the African continent now receives the most food aid. Perhaps the most important point Clover made was to suggest hunger will not be eradicated by just throwing money at the problem. Hunger is a political creation which must be ended by political means, a theme which will be mentioned below and revisited in the Discussion section.

Hunger Related Factors

According to Sanchez and Swaminathan (2005) [5] roughly half, 50 percent of the hungry worldwide are found in small holder farming households and most likely this is accurate for three-quarters of the hungry in sub-Saharan Africa. This paper will look at farmers, in order to determine if they are in fact hungrier than other Zambian respondents. There are several issues that emerge from the rural hunger literature that will affect all farmers. The first is climate change and Shisanya and Mafongoya (2016) [6] suggested that smallholder subsistence farmer swill face severe negative impacts from climate change, with their household food security being seriously affected. This paper addresses the way gender affects hunger in Zambia, As Adebayo and Adekunie (2016) [7] have indicated, the division of labor is becoming blurred. Many men have left the land to work in the towns or neighboring countries. Also, HIV related diseases and deaths have had a major effect on the agricultural labor force As a result, women sometimes comprise up to 80 percent of the adult rural population and are made to take on jobs that were traditionally done by men..

Identified Hunger in Zambia

Zambia is a landlocked country in Southern Africa. Roughly the size of France, it is boarded by Tanzania to the northeast, Malawi to the east, Mozambique to the southeast. Zimbabwe and Botswana to the south and a narrow strip of Namibia to the southwest and the Democratic Republic of the Congo to the northwest. Two sources of information about hunger in Zambia appear to be relevant here.

The first comes from the World Food Prgram (2018) [8] and provides facts that are designed to shed light on the hunger situation in Zambia, a country whose population is slightly over 16 million. The first fact is the 60 percent of the of Zambians live below the poverty line, with over 42 percent classified as extremely poor. The prevalence of HIV and AIDS is 14.3 percent and the number of HIV/AIDS orphans is estimated to be 1.5 million, which translates to about one in 5 children in the country are orphans. Zambian children do suffer, with Stunting, low growth for age, is 40 percent, and the prevalence of anemia is 53 percent. 15 percent of the

children are underweight... More than 350,000 people in the country are food insecure, with no access to a regular supply of healthy food. In both urban and rural areas, poverty levels are highest among female headed households, with extreme poverty levels of more than 60 percent in rural areas and15 percent in urban settings.

A recent paper by Kangwa (2017) [1] is of interest to this research because it provided some baseline results for this study. Conducted at the community level, Ndola City, this research utilized both qualitative and quantitative methods. The purpose of the research was to determine how far Zambia's current economic policies have gone to create a positive impact at the community level. Poverty was a major focus of the study, especially as it is related to hunger and how policy affects families and children. Energy was also a major focus of the study, especially the effect of the government stopping subsidizing fuel and electricity the study pointed to the economic shock that action sin fuel and electricity caused in triggering price increases in all other sectors of the economy.

Among the issues Kangwa (2017) [1] cited as contributors to Zambia's economic and food problems were excessive external dependence, the fact that mining dominates the Zambian economy, the volume of unemployment, as well as the volume of low income and female headed households. The findings revealed thatthere was a growing disparity between the needs of people and governmental policies. The conclusion was that little effort is being made to improve the living conditions of the majority of households in Zambia. Further, the country risks sliding back on the achievements previously achieved under what are known as the MDGs Millennium Development Goals, including achieving universal primary education. Kangwa suggests that is a greater concern, with poverty the primary reason families keep their children out of school. He concludes that policy makers should understand the need to dev economic shock eop multiple agricultural programs to enhance food security at the community level, providing training, infrastructure development and overall to promote agricultural programs.

The Study: The Research Question the picture of Zambia presented above is grim. It is described an impoverished country with limited resources that cannot overcome its hunger problem in the near future. Against that backdrop, this study looks at the scope of hunger in Zambia and attempts to identify the factors that are related to hunger in the present day country. As the title of this paper suggests, the search will be to determine scope of hunger, especially what appears to be hidden hunger in Zambia.

The study's sample is a national probability sample and capable of providing some baseline for that issue. Hop fully the findings will indicate whether there are any rays of hope for the hunger problem in Zambia.

Method

The Data

This study's Data Source is the Afro barometer project, As recently described by ((it is a collaborative research effort formed in 1999 when three independent research projects merged,. There were three core partners involved, Michigan State University, the Institute for Democracy in South Africa and the Center for Democratic Development. The Project's objectives are as follows; 1) to produce scientifically reliable data on public opinion in sub-Saharan Africa; 2) to strengthen institutional capacity for survey research in Africa; and 3) to broadly disseminate and apply survey results in 2000, Afrobarometer joined other regional barometers to form the Global Barometer Network; the following year, Afro barometer completed the Round 1 survey. The project started with 12 countries in Round 1, and by 2016 when Round 6 was completed, it included 36 African countries. The project uses a standardized questionnaire, with new questions or country specific questions added by round.

The individual country is the unit of analysis and sampling goal is to create national probability samples which represent cross sections of adult citizens, 18 years and older, for each country. Sampling sizes are set at either 1,200 or 2,400 respondents, depending upon the country's population size. In this research Zambia was the country of choice and Round 6 had been conducted there in 2014and the sample size was 1.200 respondents. The sampling procedures used in all of the Afro barometer surveys are explained in detail in Bratton, Mattes and Gyimah-Boadi (2005) [9]. An ordered logistical model was appropriate because the study had a categorical dependent variable. The statistical program used for all of the analysis presented in this paper was Stata, and Long and Freese discuss the use of regression models for categorical dependent variables when using Stata.

The Dependent Variable: Hunger

The study's questionnaire included what is called The Lived Poverty Index used in the Afro barometer studies which was adopted from Mattes (2003) [9]. One of the five questions in the Index asked "over the past year, how often, if ever, have you or anyone in your family gone without enough food to eat". Fixed responses to this question were: never, just once or twice, several times,

many times, always. These responses were coded as follows Never =1, just once or twice = 2 and many times and always =3. These categories provide the basis for the ordered logistical analysis presented in the Results section.

The Independent Variables

The questionnaire did not ask respondents to report their income in the Afro barometer survey. As Bratton (2008) [10-13] indicated, this is because many citizens in poor countries operate in informal market squere cash transactions, including income, are unrecorded and difficult to measure. Instead, this research used what is called an Asset-based wealth Index, a summed index created from four questions that ask about household assets. The survey asked respondents: "Which of these things do you personally own: A radio? A television? A motor vehicle, car or motorcycle? a cell phone?" Responses to these questions were coded as binary. Either (0=don't own; 1=own), and used to create a summed index for this study.

Other control variables are listed in (Table 1) and were measured by a single item, like age, and others were collapsed into fewer categories. Education was reduced to five categories by combining no school, informal only and completion some primary. Religion was reduced to three categories, Christians, Muslims and others. Respondents were asked a series of work related questions, like their employment status, and to identify their occupations. Respondents were asked hypothetical questions, like their first priority for additional investment if the country could increase spending. Fixed responses were provided, which included education, infrastructure, security, healthcare, agriculture and development, energy supply or none of the above. A final set of questions asked responded to judge how the government was handling assuring that people had enough to eat and how the government was improving living standards for the poor. The responses to the demographic related questions are also listed in Table 1.

Social and Demographic Characteristics of the Zambia Sample (N=1,199)	
Variable	N (%)
Gender	
Male	600 (50)
Female	599 (50)
Education	
No formal/informal schooling	100 (8)
Some / Primary school completed	421 (35)
Some/completed high school	516 (43)
postsecondary/college /graduation	158 (13)
Employment	
Unemployed	847 (71)
Employed part time	123 (10)
Employed full time	218 (19)
Residence	
Urban	520 (43)
Rural	679 (57)
Age	
18 through 29	489 (42)
30 through 49	489 (42)
50 and over 193 (16)	
Occupation	
Agriculture	328 (27)
Retai/'shop	285 (24)
None/ student/ housewife/	272 (23)
Trader/hawker/vendor	260 (17)
Unskilled' skilled labor	55 (5)
Asset-based Wealth	
None of these	269 (23)
Radio	401 (34)
Radio and TV	376 (32)
Radio, TV and motor vehicle (car or motorcycle)	138 (12)

Table 1: Social and Demographic Characteristics of the Zambia Sample (N=1,199).

(Table 1), shows that Afro barometer met its stated sampling objective for this sample, with equal numbers of males and females, 600 each. This Zambian sample was relatively young, with 84 percent under the age of 50. The sample contained more rural residents, 57 percent, than urban respondents. Agriculture was the most frequent occupation reported by respondents, 27 percent, followed closely by retail/shop positions, 23 percent, and another 24 percent of the sample indicated they had no occupation, or were either were students or housewives. Eight percent of the sample reported no or informal education only, while 13 percent reported some post secondary or advanced education. The responses to the asset ownership question ranged from 23 percent reporting they had none of the assets to 12 percent indicating they owned all 3, radio, TV and motor vehicle. Please note that race and religion are not included in (Table 1) or the remainder of the analysis. This is because there was no variation on that measure. Ninety nine percent of the samplerepondents were classified as Black African and 100 percent of the respondents reported being Christians, with only 3 non-Christians in the sample to 12 percent indicating they owned all three of the assists on the list.

Results

The next task in the analysis was to identify the respondents self-reported level of hunger and perceptions of problems the government should address or where the government should direct funds if money was available. The responses to those items appear in Table 2.

Table 2 reveals that 56percent of this Zambian sample reported some degree of hunger, with 10 percent indicating they are always hungry. In terms of their basic needs, 37 percent indicated they do not meet their basic needs (food) several times a week or every day. Seventy six percent indicated the government was doing badly ensuring that citizens had enough to eat. In terms of improving living standards for the poor, 68 percent of these respondents responded that the government was doing a bad job in terms of improving the living conditions of the poor. Education was the number one area where respondents would invest more funding if it was available, followed by infrastructure and health care. Agricultural development was fourth, chosen by 15 percent of the respondents.

Self-Reported Hunger, lack of Access to basic necessities (Food), and perceptions of governmental priorities and possible investment (N=1,200)	
Variable	N (%)
Hunger	
Never	528 (44)
Sometimes	545 (46)
Always	123 (10)
Go Without Basic necessities (food)	
About one or two or three months	244 (27)
Two or three times a month or once a week	337 (37)
Several times a week or Everyday	339 (37)
Respondent first choice of government priorities (Top 8-50 votes or more)	
Unemployment	195
Water supply	133
Health	109
Education	101
Farming/agriculture	100
Infrastructure	90
Poverty/destitution	87
Management of the economy	69
Government ensuring everyone has enough to eat	
Badly	877 (76)
Well	270 (24))
Government handling improving living standards for the poor.	
Badly	788 (68)
Well	373 (32)
Votes for Top Priority for additional government investment	
Education	555 (47)
Energy supply	213 (18)
Agricultural development	208 (17)
Infrastructure	151 (13)
Security	43 (4)
Healthcare	23 (2)

Table 2: Self-Reported Hunger, lack of Access to basic necessities (Food), and perceptions of governmental priorities and possible investment (N=1, 20)

The next task in the analysis was to cross-tabulate the study's independent variables by hunger. These results appear in Table 3.

Cross-tabulation Hunger and Selected Independent Variables (N=1,200)			
Hunger level	None	Some	a lot	Total
	N (%)	N (%)	N (%)	P
Variable Gender				
Male	253(42)	281 (47)	64 (11)	598.44
Female	259 (43)	237 (40)	104 (17)	598
Age				
18 through 29	250 (51)	199 (41)	38 (8)	487 .000
30 thru 49	210 (43)	227 (46)	52 (11)	489
50 and over	59 (31)	103 (54)	30 (16)	192
Education				
No formal/informal only	27 (27)	59 (59)	14 (44)	100
Some / Primary school completed	141 (35)	220(52)	59(14)	420
Some/completed high school	255 (50)	213 (41)	46 (9)	514
Postsecondary/college/graduation	103 (65)	51 (32)	4 (3)	158
Employment				
Unemployed	339 (34)	404 (48)	102 (12)	845
Employed part time	61 (50)	49 (40)	12 (10)	122
Employed full time	122 (56)	88 (41)	8 (4)	218
Residence				
Urban	251 (48)	225 (43)	43 (8)	519.02
Rural	277 (41)	320 (47)	80 (12)	677
Agricultural worker as occupation				
Yes	95 (34)	144 (51)	45 (16)	285
No	403 (47)	377 (44)	73 (9)	853
Asset-based Wealth				
	98 (37)	133 (50)	37 (14)	268
Radio	141 (35)	207 (50)	53 (13)	401
Radio and TV	192 (51)	158 (42)	25 (7)	375
Radio, TV and motor vehicle	91 (66)	39 (28)	7 (9)	137
Government ensuring everyone has enough to eat				
Badly	356 (41)	425 (49)	94 112)	971
Good	149 (55)	108 (40)	12 (5)	269
Government handling improving living standards for the poor.				
Badly	308 (39)	388 (49)	91 (12`)	7 87.000
Well	208 (56)	141 (38)	22 (6)	371
Go Without Basic necessities				
About once/two/ three months	89 (36)	136 (56)	19 (8)	244 0.001
Once a week/two /three a week	121 (36)	178 (53)	38 (11)	337
Several times a week or Everyday	99 (29)	173 (51)	65 (19)	337

Table 3: Cross-tabulation Hunger and Selected Independent Variables (N=1,200).

At first glance (Table 3) suggests that this study could be seen as suffering from an abundance of richers, This is because the table shows that almost all of the variables included in Table 3 were statistically significant, with gender being the only exception Most variables included in Table 3 were highly significant, but there was a range in terms of the magnitude of statistical significance among these variables. The importance of these differences will become more clear when the results of the study's ordered logistical regression analysis are presented in Table 4 below. The ordered logistical model was appropriate for this study because the study had a categorical ordered dependent variable and the reason for using this procedure was to identify the factors that predict hunger in Zambia.

Variable	Coefficient	Standard Error	Z	P
Govt ensure people can eat	0.92	0.14	-6.38	.000
Meeting basic needs	0.55	0.09	6.21	.000
Total assets	0.23	0.07	-3.44	0.00
Improve living standards	0.53	0.16	3.4	0.00
Age	-2.5	0.09	-2.69	0.01
Religion	-2.3	0.09	-2.62	0.01
Agricultural worker	0.54	0.24	2.26	0.02
Employment status	0.13	0.09	1.46	0.15
Education	-0.07	0.08	-0.85	0.39
Occupation	0.11	0.12	0.96	0.34
Urban-rural	0.07	0.13	0.56	0.58
Gender	-0.08	0.15	-0.52	0.6

Table 4: Logistic regression with self-reported hunger as the dependent variable.

Table 4 shows that four variables reached significance in the regression equation. In order of their strength these were age, education, total assets and whether respondents thought the government was handling improving the living standards of the poor. (Table 3) helps explain those results.

Look at age in Table 3, where 51 percent of those who reported none in terms of hunger were in the 18 through 29 age group, with 8 percent of that group reporting a lot in terms of hunger. For those over 50 years of age, 16 percent were in the hungry a lot category. In term of education, 65 percent of those who reported post-secondary education reported none in terms of hunger. Only 4 percent of those in the post-secondary category indicated they were hungry a lot. Remember that the asset measure is a crude indicator of wealth and as the number of possessions in Table 4.

Perhaps what are most interesting are those variables that were expected to be significant and were not. These include gender and the rural-urban dimension, which the literature suggested were both significant predictors of hunger. Perhaps this can be explained by the significance of agriculture as an occupation. These issues will be included in the Discussion below. The total asset measure cross tabulated in Table 3 by hunger shows that 66 percent of those in the highest own ship category reported none.

Discussion

The results presented in this paper should have been expected and can be interpreted. It must be remembered that the study's dependent variable, hunger, was measured by a single item included in the Afro barometer poverty index [9]. The study doers point to poverty as the main source of hunger in Zambia. The fact that the total assets indicator was highly significant is again consistent with that interpretation.

This is not to say that there were some slurping findings this paper, especially the importance of respondent perceptions about how well the government was handling the problem of raising the living standards of the poor. These results were contrary to earlier findings about African governments and the HIV/AIDS epidemic. In those papers, countries with the world's highest HIV/AIDS prevalence rates, including rising HIV/AIDS rates, incated they thought the government was handling HIV/AIDS well. The way government was handling the HIV crisis was included in earlier Rounds but

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not Round 6. How the government was handling health was included and 54 percent of these Zambian respondent indicated the government was doing well. It should be noted that Zambia has the world's 5th highest HIV/AIDS prevalence rate and HIV/AIDS was the leading cause of death in Zambia, 5th in the nation and the leading cause of total deaths in Zambia. Life expectancy is extremely poor and the youth of the Zambian sample cab be attributed to HIV/AIDs. In terms of the age breakdown in the country, the 0-14 age group is the 5th highest in the world. By way of contrast the 15-64 and the 65 plus age group both ranked 189 Th in the world. This may be interpreted to mean that the reason age and education were the two most significant predictors of hunger in this study is that these respondents may be seen as the survivors of the HIV/AIDS epidemic in Zambia.

The results of this study that appear actionable relate to the role of government. The government must convince the citizens of Zambia that they care about the living standards of the poor as well as whether people have enough to eat. This will require an action plan, one that is devised to reach as many citizens as possible. The plan should be made available through the media and existing community based groups. Zambians must be convinced their government care about them and doing whatever is possible to address the hunger problem. This means acknowledging it and attacking hunger with every possible resource, domestic as well as foreign. Agricultural development should most likely be the center piece of all planning and media releases.

In conclusion, the study revealed that 56 percent of this Zambian sample reported some degree of hunger, with 10 percent indicating they are always hungry. Four factors emerged from the ordered logistical regression analysis as predictors of hunger. In order of their magnitude they were age, education. Ownership of certain assets and respondent assessment of how the government was handling the problem of raising the living standards of the poor. The recommendation of the study was that the Zambian government launches a public relations campaign designed to show citizens that it was acutely aware of the hunger problem and to communicate its willingness to seek relief through committing its own resources to address the hunger problem and to explore receipt of further assistance from every possible external source. The Spector of the HIV/AIDS epidemic does loom over the interpretation of the study's results and recommendations for possible governmental actions designed to address the hunger problem in the future.

References

1. Kangwa F (2017) the food Insecurity and Poverty in Zambia: Strategic Solutions for Mitigation. Imperial Journal of interdisciplinary research 3(9): 258-266.

2. Hunger (2011) World hunger and poverty facts and statistics. Washington, DC: World Hunger Education Service.

3. Muthayya S, Jee H, Sugimoto J, Roos F, Kraemer H, et al. (2013) The global hidden hunger indices and maps: an advocacy tool for action." PLoS One 8(6): e67860.

4. Clover J (2003) Food security in sub-saharan Africa: feature. African security review 12(1): 5-15.

5. Pedro AS, Swaminathan SM (2005) Hunger in Africa: the link between unhealthy people and unhealthy soils. The Lancet 365(9457): 442.

6. Shisanya S, Mafongoya P (2016) Adaptation to climate change and the impacts on household food security among rural farmers in uMzinyathi District of Kwazulu-Natal, South Africa. Food Security 8(3): 597-608.

7. Adebayo S A, Ogunlade I (2016) Socio-economic status of women in group membership in selected areas of Kwara State, Nigeria 6(1): 57-64.

8. Zambia (2018) World life expectancy.

9. Mattes R, Bratton M, Davids Y (2003) Poverty, Survival, and Democracy in Southern Africa, Afro barometer Working Paper 23.

10. Bratton M, Krishna A (2008) Poor People and Democratic Citizenship in Africa. Poverty, Participation and Democracy. New York: Cambridge University.

11. Bratton M, Mattes R, Gyimah-Boadi E (2005) Public opinion, democracy, and market reform in Africa. Cambridge University Press.

12. Robert M (2008) The material and political bases of lived poverty in Africa: Insights from the Afrobarometer. In Barometers of Quality of Life Around the Globe 161-185.

13. Burundi (2013) World Health Rankings.