



Poverty Profile and Determinants of Agricultural Households in the Madimba Territory of Kongo Central in the Democratic Republic of Congo

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Summary

This research focuses on the profile and determinants of poverty among rural populations in the Democratic Republic of Congo. It focuses specifically on the case of agricultural households in Madimba in the province of Kongo Central. To achieve this, a survey on a sample of 755 agricultural households was carried out. Poverty was measured on the basis of daily food expenditures. Socio-demographic characteristics (gender of the head of household, level of education, size of the household, etc.), environmental characteristics (climatic shocks: floods, drought, erosion; pests (insects, diseases, animals), economic factors (activities carried out, traditional agricultural practice, income, access to credit, savings, access to a subsidy, membership of a ton-tine, housing status) as well as institutional factors (access to water, access to health care) have been selected as potential explanators of poverty. The Foster-Greer-Thorbecke poverty indices (FGT) were calculated. The logistic regression model (Logit) was used to estimate the factors associated with poverty.

The results revealed that at the poverty line of \$1, 83% of households are poor (incidence or P0). Thirty-five percent of the poor are far from the poverty line (depth or P1) and 17.4% of households are further away (severity or P2). Family composition, the number of children under 15 years of age, non-agricultural activity, money transfer, housing status, health care and children's schooling expenses have been significantly associated with household poverty.

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Introduction

The first of the Millennium Development Goals (MDGs) aimed to reduce extreme poverty and fight hunger by 2015. This goal also remains a priority for the new Sustainable Development Goals (SDGs) and the post-2015 Agenda. It aimed to "end poverty in all its forms and everywhere" (Ibrahima et al., 2011). According to the United Nations (FAO et al., 2023), between 691 and 783 million people worldwide suffered from hunger in 2022. This represents nearly 122 million more people than in 2019. In Africa, several countries are generally facing different challenges that undermine development and the fight against poverty, hunger, malnutrition and food insecurity (Kanazoe, 2017).

In addition, nearly one in six people living in extreme poverty in sub-Saharan Africa is in the Democratic Republic of Congo (World Bank, 2022). The incidence of poverty in the Democratic Republic of Congo (DRC) is around 85%, while the average for this indicator for sub-Saharan Africa is 45%. The DRC is lagging far behind in achieving the MDGs, including halving extreme poverty, access to water, sanitation and reducing child mortality (AfDB, 2007). A significant share of the population, nearly 27 million, suffers from high levels of food insecurity, usually food poverty (FAO and WFP, 2021; Moummi, 2010). To feed themselves, the population resorts to subsistence agriculture, in which 70% of the working population is involved.

However, in the DRC, particularly in the Madimba territory, empirical studies on poverty among agricultural households are scarce. This article aims to examine the standard of living of this category of people, in the context of a question, namely: What is the level of poverty of the agricultural population in this territory, and what are the factors associated with it?

Literature Review

Poverty is a phenomenon addressed by several researchers. It illustrates a situation of insufficient material resources (lack of money) and living conditions (housing, facilities, participation in social

and economic life, etc.). A condition that does not allow individuals to live a dignified life on a daily basis (Coulibaly, 2017). Poverty becomes the minimum of well-being that an individual should achieve in order to be at standard of living in the reference society. According to the utilitarian (welfarist) approach, each individual has a utility function. However, the assessment of well-being remains delicate and well-being can only be assessed by the individual himself (Attanasso, 2004).

Two leading institutions in the fight against poverty, the World Bank and the UNDP, observe divergences as to the exact definition of poverty. However, they agree on the causes of it. It results from "a lack of access to assets, insufficient or inappropriate economic growth, and poor governance". It is considered to be the absence of basic human capacities: illiteracy, malnutrition, reduced longevity, poor maternal health, preventable disease. The UNDP refers to income poverty without giving a precise definition (Emmanuel, 2001).

In other words, poverty is a multidimensional phenomenon that encompasses all aspects of human life. For an individual or a household, monetary poverty (also referred to as the monetary dimension of poverty) reflects the lack of money that prevents them from meeting their needs, and is estimated using the poverty line. The poverty line is the line or limit below which a household or individual is considered poor (Ibrahima et al., 2011). Poverty lines are then a function of the characteristics of the distribution of resources (Renganaden, 2008).

Several theories explain the measurement of poverty (Idriss, 2017). Some explain it by the lack of monetary resources, others by multidimensional deprivations (health, education, housing, freedom), and still others by structural factors linked to social and institutional inequalities. These can be grouped into four approaches, including the utilitarian or welfarist (classical) approach, according to which poverty is seen as insufficient income or consumption. It is based on a monetary poverty line (e.g. a threshold of \$1/day in rural areas). According to this approach, households whose income is below a threshold that changes according to the distribution of

living standards are considered poor (Renganaden, 2008; Varinia, 2018). This approach depends largely on the conventions adopted both for the definition of income and for the setting of the threshold. However, it ignores the social and human dimensions of poverty. It is this approach that constitutes the common thread of this article.

As for the approach to basic needs or living conditions, poverty is defined as the inability to meet basic needs, including food, housing, health, education. It focuses on living conditions and not only on income, but it does not universally define what is meant by basic needs (Moummi, 2010).

According to Sen's (1976) capabilities' approach, poverty is a deprivation of freedom and choice. In addition to income, this theory includes access to education, health and social participation. This approach has given rise to the Human Development Index (HDI) and the Multidimensional Poverty Index (MPI). With regard to the structural and institutional approach, poverty is linked to social, economic and political inequalities. It is the result of discrimination, social exclusion, weak institutions and public policies. These dimensions are not discussed in this article.

The existing literature provides information on the explanatory factors of household poverty. These include economic factors (low income and unemployment, limited access to markets, lack of productive assets: lack of land, capital or equipment), socio-demographic factors (household size, level of education, gender and marital status of the head of household, age and experience), institutional factors (access to public services: health, education, infrastructure, governance and social policies, etc.). distance from markets and institutions) and environmental factors (climate shock: floods, droughts and deforestation; land degradation: reduced fertility; access to water and natural resources: major determinant in rural areas) (Elena et al. 2009; Kaboré, 2006), i.e. the figure of factors:

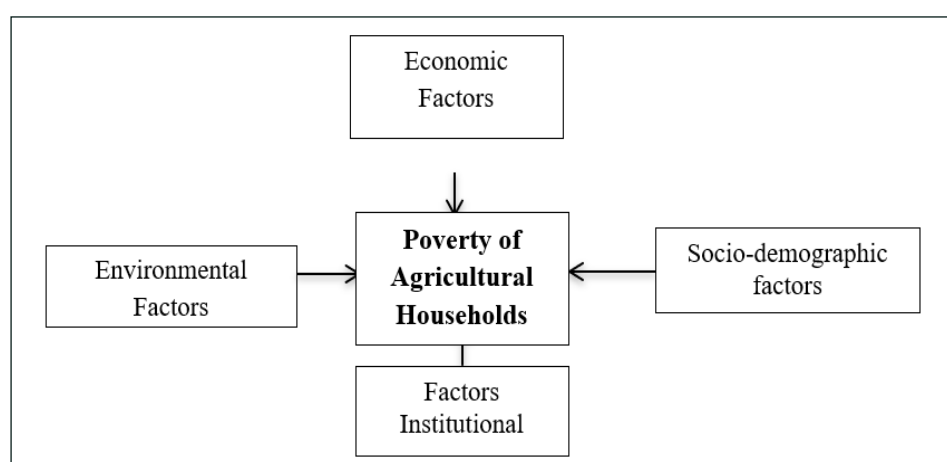


Figure 1: Conceptual framework of poverty in agricultural households

Several studies have analysed the level of poverty in different countries. Santos and Ura (2008) estimated multidimensional poverty in Bhutan in South Asia, using data from the Living Standards Survey. The dimensions considered are income, education, availability of rooms, access to electricity and access to drinking water. For rural areas, access to roads and land ownership have been added. Alkire and Foster (2007), based on standard measures of well-being (HDI and income poverty), found that lack of schooling is the key factor in multidimensional poverty. Alkire and Seth (2009) studied multidimensional poverty in India, and found that 60% of poor households identified under multidimensional measures of poverty were not included in India's social welfare program.

Moser (1996) focused his research on a comparative survey of four poor urban communities in developing countries: Guayaquil in Ecuador, Manila and Budapest in Hungary, and Lusaka in Zambia. His study made it

possible to measure the vulnerability of disadvantaged households to the adversity of poverty. By choosing human capital as the key determinant of poverty, she demonstrated that in addition to education, poverty is also associated with institutional factors such as transportation, access to water and electricity, and health care.

Touhami and Fouzia (2009) measured poverty in the city of Marrakech, in central-western Morocco. They observed a strong disparity, in terms of non-monetary poverty, between the municipalities of the city in 2004. Grooteart et al. (1995); Attanaso (2005); Medjedji (2004); Moser (1996); Ndremitsara (2012); Gondard (2004); Bizimana (2004), analysed poverty. They found that human factors, including age, level of education, household size, number of dependents, determine household poverty in Côte d'Ivoire and Benin, respectively; in Tunisia; Cameroon; in Madagascar and Rwanda.

In the DRC, Murhula et al (2021) found that official aid had a positive impact on poverty reduction. Anki and Dukken (2020) found that the determinants of poverty are household size, age (30-39) and 60 years and older, education, and gender (women are more affected in rural areas). Tshimanga (2012) found that the incidence of poverty at the national level is 75.7%. In the provinces, it is 89.1% in Bandundu, 84.7% in South Kivu and 93.6% in Equateur, but without mentioning Bas Congo, the current Kongo Central.

Materials and Methods

Midfield

The study was conducted in the Madimba territory, located at 4°9'S, 15°2'E and 210 m above sea level in the province of Kongo Central, in the Democratic Republic of Congo; 100 km from Kinshasa. It covers an area of 8,260 km² and has a humid subtropical climate with distinct seasons, rainfall and dry seasons. The average annual temperature is about 25°C and an average rainfall of 1273.9 mm and has a population of about 465,000 (Kalala, et al., 2025).

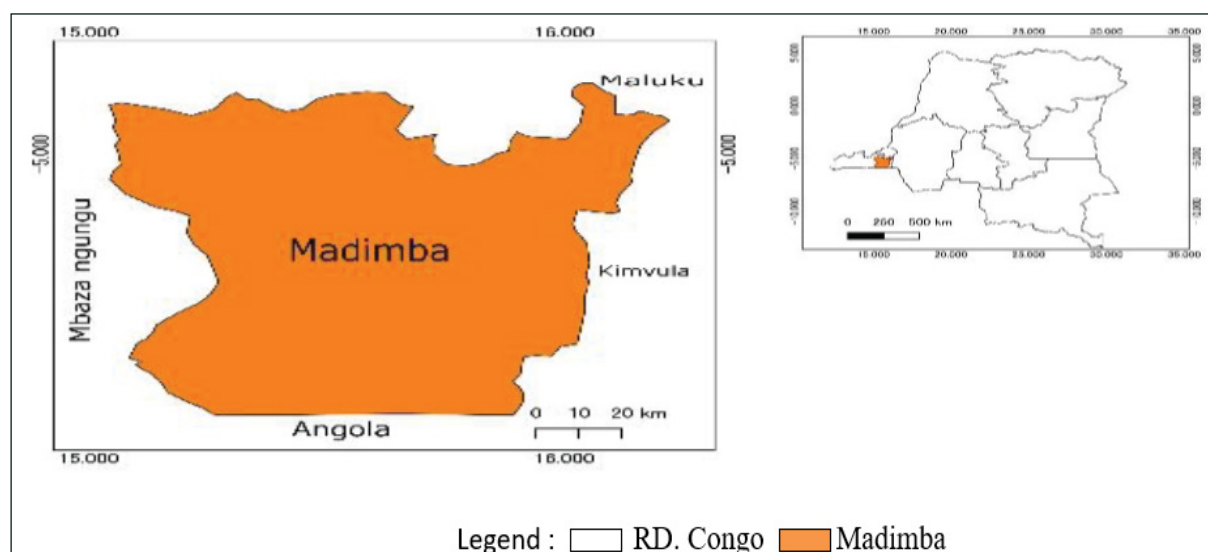


Figure 2: Map of Madimba territory in the Democratic Republic of the Congo (Source: Kalala et al., 2024).

Data Base and Analytical Aspects

The data were collected following a survey of agricultural households conducted between July and September 2025 using a paper-based questionnaire, the responses of which were recorded on paper questionnaires. The non-probability proportional quota sampling method was used. The sample size is 755 households, questioned on the basis of 48 qualitative and quantitative variables.

Data entry and control were done on Excel 16. Mathematical and descriptive analyses were performed. The relationship test is based on the following assumptions: H0: the null hypothesis, if P-value $\geq$ 5% and H1: there

is an effect, if P-value $\leq 5\%$. For this purpose, the Manwithny/Wilcoxon and Kruskal Wallis independence test as well as the comparison of the means were carried out. Also, studies have been carried out in this area, Table 1:

Table 1: Illustration of some Previous Work

Authors	Country	Methods
Dean Jolliffe [2006]	USA	FGT, spatial analysis
Touhami et Fouzia [2009]	Morocco	ACM ; CAH, partition
Diarra Ibrahim [2018]	Cote d'Ivoire	ACM, Logit
Ibrahim [2011]	Mali	Logt
Renganaden [2008]	Mauritius	Indices, Logit
Backiny and Wodon [2009]	Congo	FGT, Logit
Moumi [2010]	RD. Congo	Indices FGT

The table shows that different methods have been used in poverty analysis, including advanced statistics, spatial analysis, poverty indices and logistic regression. For some studies, after the calculation of the FGT indices, for the analysis of the determinants, econometric estimation was used using the Logit/Probit model, given the dichotomous nature of the variable of interest.

For this study, FTG indices were calculated. Poverty, (dichotomous variable), was calculated on the basis of daily consumption expenditure divided by household size expressed in US dollars. The variable was then made binary qualitative by comparing the value to the \$1 threshold. If the average of a household is more than \$1, the household is not poor and Poverty = 0. Otherwise, the household is poor and Poverty = 1.

The FGT class of indices was developed in 1984 by Foster, Greer and Thorbecke.

The general formula is: $FGT \propto = \frac{1}{n} * \sum_{i=1}^q \left(\frac{z-y_i}{z} \right)^\alpha$ With, q: Number of poor people in the sample (those with income/consumption $< z$; n: Sample size; z: Poverty line; α : Degree of aversion to poverty (is a whole number greater than or equal to 0); α

y_i : Indicator of well-being (income or expenditure of the individual). From this expression, it is possible to determine three indicators depending on whether α takes the values 0, 1 and 2. If $\alpha = 0$, we have: $FGT_{\alpha=0} = H = q/n$.

FGT0: corresponds to the H-index, also known as the incidence of poverty, which corresponds to the proportion of poor people in the total population. This index has some limitations, although it is requested by researchers because of its simplicity to implement. Among other limitations, it does not take into account individual deviations. Also, the H-index does not respect the "monotony axiom" essential for poverty indicators. If $\alpha = 1$, we have: α

$FGT1 = \frac{1}{n} * \sum_{i=1}^q \left(\frac{z-y_i}{z} \right) \frac{q}{qn} * \sum_{i=1}^q \left(\frac{z-y_i}{z} \right) = H * I$; With $I = \frac{1}{q} * \sum_{i=1}^q \left(\frac{z-y_i}{z} \right)$ Index I measures the average relative gap of the poor at the poverty line.

The FGT1 index: called the depth of poverty or the poverty gap is the product of the H index and the I index. It measures the gap between the well-being indicator and the poverty line. This index verifies the axiom of monotony but not the axiom of transference.

In policy terms, the depth of poverty provides the resources needed to lift the poor out of their situation through cash transfers.

If $\alpha = 2$, we have: $FGT2 = \frac{1}{n} * \sum_{i=1}^q \left(\frac{z-y_i}{z} \right)^2$ The FGT2 index; Called the severity of poverty measures the squared deviation of the well-being indicator and the poverty line. In addition, the squared poverty gap takes into account inequality among the poor (Diarra, 2018; Ibrahima et al., 2011).

This article uses the Logit model to estimate poverty among farm households. Then, $Y_i = 1$ if the household is poor and $Y_i = 0$ if the household is not poor. In the case of variables with p modalities, only $p-1$ modalities are tested in the model.

By definition, in the Logit model, we have $P_i = P(Y_i = 1 | X_i) = \frac{1}{1 + e^{-(\alpha + \beta \sum x_i)}}$

The probability of household i knowing the event $Y_i = 1$ given the values of the explanatory variables X_i , and $1 - P_i = P(Y_i = 0 | X_i) = 1 - P_i$, is the probability that household i has of experiencing the event $Y_i = 0$ given the values of the explanatory variables X_i . In short, $\text{logit } P_i = \ln \frac{P_i}{1 - P_i} = \frac{1}{1 + e^{-(\alpha + \beta \sum x_i)}} \frac{e^{-(\alpha + \beta \sum x_i)}}{1 + e^{-(\alpha + \beta \sum x_i)}} \alpha + \beta \sum_{i=1}^K X_i + \varepsilon_i$. Or With the error term and Z_i a vector of exogenous variables. The estimator is made by the maximum likelihood (Muisha $\varepsilon_i \log \frac{P_i}{(1 - P_i)} = \alpha + \alpha_i Z_i + \varepsilon_i$. $\log \frac{P_i}{(1 - P_i)} = \ln \text{logit}$, α et $\alpha_i =$ les coefficients à estimer, ε_i et al., 2023 and Ndaya, 2013).

Results

Descriptive Analysis

From the point of view of diet, according to the food consumed in the last 7 days, the households surveyed have cassava as a staple food, consumed in the form of paste, fufu, chikwangu or porridge. All the respondents also eat bread, fish and various vegetables. Other secondary foods consumed abundantly are maize (98%), groundnuts in various forms (97%), sweet potatoes (86%), animal offal (57%), bananas and beans (48%) and caterpillars (34%).

Table 2: Non-Farm Expenditure Per Year

Topics	Amount (FC)	%
Food expenditure	3 181 700	83
Non-food expenditure	271 430	7
Education	234 020	6
Health Care	147 143	4
Total	3 834 293	100

Households bear non-agricultural expenses which are, on average per household and per year, 3,834,293 FC, or \$1369.

Table 3: Daily Consumption (1USD=2800FC)

Variables	Medium	Standard deviation	Min	Max
Daily Expense household (\$)	3.378879	1.454036	1.178571	8.928572
Daily Expense Individual (\$)	0,7520568	0,5458341	0,1507937	6.071429

Each member of the household consumes an average of $\$0.75 \pm 0.54$, with a minimum of \$0.15 and no more than \$6.

Table 4: Distribution of Poverty at the \$1 Threshold

Population		Frequency	percent
\$1 threshold	Not poor	129	17
	Poor	626	83

The results in Table 4 show that 83% of agricultural households in this territory are poor.

Table 5: Sociodemographic Variable Independence Test

Variables	Workforce N=755	Proportions Non-poor	Poor	Chi2	Pro/Chi2
Gender				0.1678	0.682
Male	333	59 = 17.72	274=82.28		

Female	422	70=16.59	352=83.41		
Marital status				0.1678	0.682
Singles	60	23=38.33	37=61.67		
Bride and groom	574	77=13.41	497=86.59		
Divorced	47	12=25.53	35=74.47		
Widows	74	17=22.97	57=77.03		
Level of education				13,41	0.009***
Uneducated	65	14=21.54	51=78.46		
Professional Training	51	15 = 29.41	36=70.59		
Primary	254	31=12.20	223=87.80		
Secondary	353	60=17.00	293=83.00		
Higher and University	32	9=28.13	23=71.88		
Free education				12,123	0.000***
Beneficiary	150	40=26.67	110=73.33		
Non-beneficiary	605	89=14.71	516=85.29		
Non-agricultural activities				14,55	0,039**
None	526	83=15.78	443=84.22		
Liberal professions	53	19=35.85	34=64.15		
Salaried civil servant	56	10=17.86	46=82.14		
Commerce	120	17=14.17	103=85.83		
Main activity				5.1135	0.078*
Agriculture	655	104=15.88	551=84.12		
Commerce	51	13=25.49	38=74.51		
State civil servant	49	12=24.49	37=75.51		
Variables	Workforce N=755	Proportions Non-poor	Poor	Chi2	Pro/Chi2
Agriculture	655	104=15.88	551=84.12		
Commerce	51	13=25.49	38=74.51		
State civil servant	49	12=24.49	37=75.51		
Member of a producers' association				0.6535	0.419
Member	191	29=15.18	162=84.82		
Non-member	564	100=17.73	464=82.27		

Note: *** (significant at 1%), ** (significant at 5%) and * (significant at 10%)

The independence test of the qualitative sociodemographic variables shows that with regard to the proportions of the modalities of each variable and in the light of the value of chi2 and that of the associated probability; The poverty profile is related to the marital status of the head of household, his or her level of education, the fact that the household benefits from free basic education, the non-agricultural activities of the head of household and his or her main activity.

Table 6: Comparison of Subgroup means of Quantitative Sociodemographic Variables

Variables	Non-poor		Poor		Prob/Ch2
	Medium	Standard deviation	Medium	Standard deviation	
Age of the head of household	44.2	1.39	43	0.53	0.7645
Household size	3	0.14	6	0.09	0.000***
Children under 15 years of age	1	0.13	2	0.05	0.0675*
People 65 years of age and older	2	0.06	2	0.02	0.7435
Experience in agriculture	20	1.41	20	0.52	0.2835
Experience in agroforestry	9	1.09	10	0.46	0.1931
Person with AGR	2	0.05	2	0.02	0.1235
Children in school	2	0.11	2	0.07	0.2213

Note: *** (significant at 1%), and *(significant at 10%)

The results in Table 6 indicate that the variables household size and children under 15 years of age are statistically associated with household poverty. The average household size is 3 persons for non-poor households and twice as large for poor households. The average number of children under 15 years of age is one person for non-poor households, compared with 2 children for poor households. However, dependence was not established between poverty and the variables age, person aged 65 and over, experience in agriculture and agroforestry, person with income-generating activities and the number of children in school.

Table 7: Institutional Variable Independence Test

Variables	Workforce N=755	Proportions Non-poor	Poor	Chi2	Pro/Chi2
Grant				2.7148	0.099*
Yes	111	25=22.52	86= 77.48		
Not	644	104=16.15	540=83.85		
Traditional practice				0.1969	0.657
Yes	217	35=16.13	182=83.87		
Not	538	94=17.47	444=82.53		
Access to drinking water				0.4647	0.495
From source	737	127=17.23	610=82.77		
Régideso and others	18	2=11.11	16=88.89		
Health Center				0.5578	0.455
Yes	590	104=17.63	486=82.37		
Not	165	25=15.15	140=17.63		
Housing status				5.8118	0.055*
Owner	519	99=19.08	420=80.92		
Tenant	157	17=10.83	140=89.17		
Family	79	13=16.46	66=83.54		

Note: *(10% significant)

Poverty is dependent on the status of housing and subsidies. On the other hand, it cannot be said that there is a statistical link between the poverty profile and traditional practice, access to drinking water and the existence of a local health centre.

Table 8: Economic variables and poverty

Variables	Workforce N=755	Proportions Non-poor	Poor	Chi2	Pro/Chi2
Savings				0.2441	0.621
Yes	325	53=16.31	272=83.69		
Not	430	76= 17.67	354=82.33		
Access to credit				0.6105	0.435
Yes	123	24=19.51	99=80.49		
Not	632	105=16.61	527=83.39		
Tontine				0.0327	0.856
Yes	171	30=17.54	141=82.46		
Not	584	99=16.95	485=83.05		
Transfer				3.5951	0.058*
Yes	617	113=18.31	504=81.69		
Not	138	16=11.59	122=88.41		
Ageing				12.9468	0.000***
Yes	281	66=23.49	215=76.51		
Not	474	63=13.29	411=86.71		
Income (In thousands of CF)			Fisher exact = 0.093*		
Less than 100	22	0=0	22=100		
100 to 200	234	38=16.24	196=83.76		
201 to 300	262	45=17.18	217=82.82		
More than 300	237	46=19.41	191=80.59		

There is a significant difference between poverty and remittance, livestock and household income. However, the independence test does not establish a link between poverty and the variables savings, access to credit and participation in a tontine with regard to the probability value of each variable.

Household poverty is also statistically significant on all quantitative variables of living standards, Figure 3.

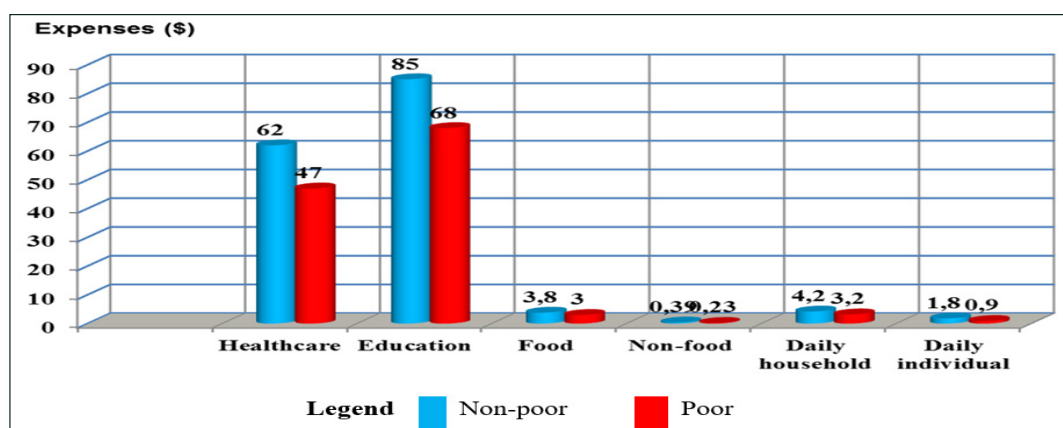


Figure 3: Distribution of Nonfarm Expenditure by Household Poverty

The non-poor consistently spend more than the poor in all categories (health, education, food, non-food, daily expenses). The most marked differences concern individual daily expenditure (\$1.8 compared to \$0.9), revealing a very contrasting daily consumption.

Poverty Indices (FGT)

The population under study has an incidence of poverty of 0.83, which means that on average 8 out of 10 households live on less than \$1 a day. The depth of poverty is 0.35, which requires filling a gap equivalent to just over a third of the threshold to lift every poor person out of poverty. The severity of poverty is 0.17. This shows that poverty is not only frequent and deep, it is also unevenly distributed among the poor and therefore the poorest are very far from the poverty line.

Table 9: Determinants of Poverty in Agricultural Households

Poverty	dy/dx	z	P> z
Household size	0.1090339	21.33	0.000***
Children under 15 years of age	-0.0148866	-1.69	0.091*
Educational Level (Uneducated = Reference)			
Vocational training	0.0313361	0.51	0.607
Primary	0.0715809	1.35	0.176
Secondary	0.0379823	0.72	0.469
Higher and University	0.0055269	0.09	0.929
Free basic education	0.0283736	1.18	0.239
Non-farm activity (no activity = Baseline)			
Commerce	-0.0987898	-1.94	0.052**
State civil servant	-0.0352685	-0.83	0.407
Liberal professions	0.0122515	0.45	0.652
Tontine	0.0284371	1.22	0.224
Transfer	-0.0866824	-3.01	0.003***
Ageing	-0.0326762	-1.56	0.119
Housing (Owner=Reference)			
Tenant	0.0836848	3.53	0.000***
Family home and care	0.0890187	3.08	0.002***
Health Care	-2.86E-07	-4.68	0.000***
Education	-3.97E-07	-7.32	0.000***
Observation = 55 Wald chi2(17) = 150.92 Prob > chi2 = 0.0000			
Log pseudolikelihood = -180.26618 Pseudo R2 = 0.4778			

Note: *** (significant at 1%), ** (significant at 5%) and * (significant at 10%)

The model is generally good at the 1% level, Prob > chi2 = 0.0000. The state of poverty in a household is influenced by household size, child under 15 years of age, trade, money transfer, housing status, health care and education.

Marginal effects indicate that when the household size increases by one unit, the probability of that household falling into poverty increases by 11%. This implies the importance of family planning within households. Also, when the household registers an additional child under the age of 15, the probability that this household

will leave poverty decreases by 2%. The fact that this age category does not contribute financially to the life of the household, its increase makes the latter vulnerable. With regard to non-agricultural activities, it has been established that household engagement in trade has a significant impact on poverty. When trade activity increases by one unit, the probability of escaping poverty increases by 10%, unlike the household, which has no other income-generating activity. Regarding access to money transfers, if it increases by one, the probability of the household remaining in poverty reduces by 9%. This situation highlights African solidarity. Households in rural areas receive money from their relatives.

In terms of housing status, when the renter household increases by one unit, the probability of the household falling into poverty increases by 8% compared to the household that owns the home. This shows how much of a burden rent is for households. This is also the case for households that live in the family home and or that look after the homes of others. As for health care, when the expenditure allocated to it increases by one unit, the probability of the household falling into poverty decreases significantly. This is also the case when schooling expenditure increases by one unit, vulnerability to poverty decreases.

Table 10: Model Specification

Poverty	Coef	Std Err	Z	P>Z	[95%ConfInterval]	
Has	1.079139	0.121895	8.85	0.000	0.8402287	1.318048
Hatsq	-0.0330189	0.0310175	-1.06	0.287	-0.093812	0.0277742
Cons	0.0372697	0.1549582	0.24	0.810	-0.2664429	0.3409822
Observation = 755 Log likelihood = -179.79521						
Prob > chi2 = 0.0000 LR chi2(2) = 330.86 R2 nickname = 0.4792						

The model is well specified with respect to the P>Z value of hatsq. The model used in this study is specifically robust.

Discussion

The results of this article showed that 83% of farm households are poor. However, the World Bank (2025) found a rate of 85.3% of Congolese living in extreme poverty. Moumi (2010) found poverty levels by province to be 90%. This study found an incidence of 83% while Anonymous (2002) found it 84% for the country as a whole. Poverty is influenced by household size. These results confirm those of the two-dimensional analysis and are in line with those found by Tshimanga (2012); Anki and Dukken (2020) in DRC, Grooteart et al. (1995) in Côte d'Ivoire, Attanaso (2005) and Medjedji (2004) in Benin, (Bizimana, 2004) in Rwanda and Ibrahima et al. (2011) in Mali. For these authors, demographic composition plays a crucial role in the exit or maintenance of the household in poverty. They noted that a large household size makes it vulnerable to poverty. The results of this research also supported bivariate analysis, which showed that age was associated with the level of poverty. With regard to the number of children under 15 years of age, the results confirm those found by the average comparison test, showing the existence of a link between the number of children under 15 years of age and poverty. This statement goes hand in hand with that of Grooteart et al. (1995). According to the latter, the household with fewer children in this category has a high chance of escaping poverty.

This study did not show the statistical influence of education on poverty. So much so that they go against those found by the independence test that revealed the existence of an affair. These results are also contrary to those found by Medjedji (2004), Attanaso (2005), Tshimanga (2012) and Grooteart et al. (1995), (Bizimana, 2004), Moser (1996) and (Ndremitsara, 2012) in Cameroon and Alkire and Seth (2009); attesting that the high level of education determines the household's exit from poverty. For non-agricultural activities, the results are similar to those found in the two-dimensional analysis. At this stage, it can be said that the fact that a household has other income-generating activities; Trade, in particular, increases the likelihood that a household will be lifted out of poverty. These results are similar to those of Ibrahima et al. (2011) according to which having

agriculture as a main activity determines household poverty.

As far as the transfer of money is concerned, the results are in the same direction as those encountered at the second level of analysis. Indeed, the fact that a household receives money outside of household production is more likely to lift that household out of poverty. As for the status of housing, he presented the results that go in the same direction as those encountered at the second level of analysis with a strong assertion that the renter household increases the probability of falling into poverty, compared to the household for which the head of household owns the house. These results are consistent with those found by Idriss (2017) in Djibouti. It also supports the claim that owning a home constitutes wealth (Diarra, 2018). As far as health care is concerned, the results confirm those found by comparing the averages. Indeed, there is a strong relationship between health care and poverty. Poor households invest less in household health, which significantly reduces the likelihood of such households escaping poverty. Regarding schooling, the results of the multivariate analysis are identical to those found in bivariate. Poor households result in too little investment in children's schooling. This increases the likelihood of remaining in poverty.

Conclusion and Implication

The purpose of this article was to assess the state of poverty among agricultural households in Madimba territory in Kongo Central in the DRC. It collected information from 755 households selected using the non-probability approach. Univariate analyses, the independence test; the comparison of the means and the estimation by the Logit logistic model were carried out, under stata 15; as well as the FGT indices.

The results revealed a high level of poverty, i.e. 83%, with a depth of 35% and severe cases of 17%. These households have a strong disparity in terms of consumption between the poor and the non-poor. Also, socio-demographic factors and living conditions determine this poverty.

This implies that efforts will have to be made to lift this population out of poverty. Households will be advised to take good care of their members to ensure

productive health. It is up to the public authorities to rely on raising awareness among households with a view to responsible family planning. Housing incentives will also have to be combined so that households have the ease of obtaining their own housing.

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