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Small Ruminants as a Source of Financial Security: A Case Study of Women in Rural Southwest Nigeria

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Rearing of small ruminants plays a very important role in the lives of households in developing countries. This is because small ruminants provide the easiest and most readily accessible source of credit available to meet immediate social and financial obligations. In southwest Nigeria for instance, rural women are involved in the raising or rearing of small ruminants – sheep and goats especially around homes by feeding them kitchen wastes or at most times leaving them to graze on surrounding herbs and shrubs. Because of the high poverty level in Nigeria, this study examines the extent to which small ruminants have assisted women in rural southwest Nigeria in meeting financial obligations with the overall goal of ensuring its sustainability and enhancing the benefits inherent in the practice of small ruminants' husbandry.

I. Background to the Study

The World Development Report (2010) estimated that about 410 million people in sub-Saharan Africa still live in absolute poverty, surviving on less than one dollar per day. According to Olayemi (1995), the poor have no access to the basic necessities of life such as food, clothing and decent shelter, are unable to meet social and economic obligations, lack skills for gainful employment, have few if any economic assets and a general lack of self-esteem. In most cases, the poor lack the capacity to liberate themselves from the shackles of poverty, and this perpetual situation makes the conditions of extreme poverty persist and they are transmitted from generation to generation (Obadan, 1997).

In Nigeria for instance, the incidence of poverty is widespread. It is much higher in the rural areas where a greater proportion of the population lives. The World Bank (1996b) recorded the total population of the poor in Nigeria at 34.7 million, with the incidence, depth and severity of poverty more in the rural than in urban areas. Meanwhile, small ruminants (sheep and goats) form an important economic and ecological niche in agricultural systems of rural communities across developing countries. This is because small ruminants make a very valuable contribution to household income, especially to the poor in the rural areas. These contributions range from precious animal proteins (meat and milk) to fibre and skins to draught power in the highlands as well as food security in some cases.

Small ruminants and poultry are of economic importance to small-holder farmers and especially women. The total income share of small ruminants tends to be inversely related to size of land-holding, suggesting that small ruminants are of particular importance for landless people especially women. In some cultural settings, women are often not entitled to own land and since agriculture (crop production) provides only seasonal employment, rearing small ruminants would provide employment and income as a subsidiary occupation. Livestock are often regarded as producers of milk and meat, income generators, and reservoirs of wealth (Coppock et al, 2006; Andrew and Flintan, 2007).

In fact, among the pastoralists, herd building is the main source of survival. Pastoralist women traditionally have exclusive rights to sell milk and milk products to obtain a modest amount of income. However, the low marketable milk output in pastoral area poses limitations on the possibilities of exploring distant but rewarding markets due to high transaction costs arising from transportation and high opportunity costs of labor (Sadler et.al, 2009). Moreover, the environmental adaptation of indigenous breeds facilitates livestock production in a wide range of agro-ecological conditions and constraints. Compared to exotic breeds, indigenous varieties entail lower workloads, especially for women (Köhler-Rollefson, 2000).

Meanwhile, many researchers have found women work various roles in small ruminants rearing. According to Dunstan and Clair (1997), women play a much greater role in the production of food crops than export-oriented crops and within cropping systems they perform certain tasks, like weeding, fertilising and harvesting. Jibowo (2000) stressed that women in rural areas not only assist their husbands in harvesting and carrying farm products from the farm, but also raise small ruminants like sheep, goats and local birds. These animals are kept to serve as emergency sources of funds for household and personal use. In particular, Fulani women (women tendering cattle) in Nigeria milk the cows for the production of cheese and yogurt. Also, one estimate suggests that women's labor accounts for 25 percent of value addition in post-harvest processing of rice alone (Scott and Carr,

1985). In addition to domestic chores, rural women are also involved in other important sub-sectors like fishery, livestock and poultry.

However, rearing of small ruminants like sheep and goats would have lasting effects in bringing about social change by improving the incomes of these people. The ruminants provide their owners with a vast range of products and services. Very often, there are no banking facilities in rural areas and an easy way to store cash for future needs is through the purchase of sheep and goats (IBC, 2004). In fact, in some areas, small ruminants have been described as the 'village bank'. From the foregoing, small ruminants play an important role in ensuring rural women's financial security and data supports (Maxwell, 1990) that women are better managers of household resources than men. Thus, an improvement in the financial security of rural women through rearing small ruminants would inevitably translate to better living conditions for households; hence the need for this research.

Objectives of the Study

The main objective of this study is to examine the roles of small ruminants as a source of financial security among women in rural southwest Nigeria. Specifically, the objectives are to:

1. Identify the socioeconomic characteristics of women engaged in small ruminants' production/rearing in rural southwest Nigeria.
2. Examine how small ruminants are being used as a source of financial/economic security by women in the study area.
3. Explore other available and accessible assets/strategies employed by these women in meeting household/domestic obligations or needs.
4. To unravel the constraints associated with using small ruminants as financial security among the women.
5. To make policy recommendations based on the findings of the study.

II. Literature Review

Challenges of Credit Acquisition in Small-holder Agriculture in Developing Countries

It is a well known fact that the agricultural sector in developing countries has been receiving the lowest level of credit facilities from banks (Koza, 2007). The banking sector's role in the provision of micro-credit has been low. In a nutshell, agriculture has been the most neglected sector in the banking business for credit due to the various risks it poses, such as lack of collateral and unpredictable earning structures. Thus, lack of capital has been among the prevailing problems that are frequently raised in relation to the stagnation of agriculture in general and small-holder farming in particular. According to Assefa (1987), the poverty trap in the sector, i.e. low income and the low productivity cycle, can only be broken through the availability of credit for the

small holders so that farmers will be fortunate to adopt new technologies, improve productivity, and increase bargaining power to market their outputs at higher prices.

In Nigeria like other developing countries in sub-Saharan Africa, farming households are faced with different constraints among which access to credit according to Olomola (1990) is a major factor militating against agricultural production and development in the country. Such difficulties in credit procurement have also been confirmed by various authors (Nto and Mbanasor, 2008; Olaitan, 2005; Okorie, 1998). This lack of credit resources according to Lawal and Shittu (2006) causes setbacks to the productivity of farmers. As a result, these farmers do not have the resources to procure improved seedlings, fertilizer, and labor nor resources to transport and market their produce which can improve their productivity and welfare. This deficiency in the availability of credit has ultimately affected agricultural production, leading to food insecurity and perpetual poverty. Adegbite et al (2007) noted that in this situation, credit is the only tool required to break this vicious cycle. In their findings, Akande and Igbi (1984) reported that only a few females benefited from formal credit facilities given out to farmers for larger scale agricultural production in rural Nigeria. This is because women are constantly faced with diverse socio-economic, political and cultural factors which have continued to hinder the realization of their potentials in agricultural production. These factors had resulted in their poor and inadequate access to production resources and services (Gabriel, 1993).

There is a growing recognition by the Nigerian farmers of the effect of improved inputs and new technologies on agricultural yield. The use of these inputs and the adoption of high yielding techniques have given rise to an increased need for agricultural credit since the majority of Nigerian farmers are small-scale farmers and are often limited by unfavorable economic, social, cultural and institutional conditions (Olubiyo and Hill, 2000). Insufficiency of capital has prevented agricultural development (Agu, 1998), and in order to improve agricultural production, modern farm inputs such as fertilizers, improved seed, feeds and plant protection chemicals and agricultural machineries are needed over the hoe and machete technology. Most of these technologies have to be purchased, yet very few farmers have the financial resources to make such purchases.

Women and Asset Ownership in Traditional African Setting: The Nigerian Case

African women farmers face enormous constraints toward increasing their productivity. They lack the means of production, have little or no access to those inputs that enhance productivity, have no security in terms of rights of land ownership, are severely constrained in time and labor, and they have almost no outlet to improve their human capital (Cheater, 1981; Due, 1991). The reality in most of Africa is that few women have traditional or legal title to land. Their access to land is limited on the supply side by legal and institutional factors that affect availability, and on the demand side, by economic, social and cultural factors that affect women's ability to obtain and retain land (Mehra, 1995).

Similar observations were made by Ezeanyika and Okorie (1994b) while studying presumably 'liberated' men of certain communities of Eastern Nigeria, where only 10 percent of the women owned land from a survey of 20 communities with a population

approximated to be 165,400 people, the majority being women. In sub-Saharan Africa where traditionally women have some degree of land use rights, women are often allocated smaller and low quality plots (Date-Bah, 1985; Ezeanyika and Okorie, 1994b). Quisumbing (1993) observed that in five African countries studied, female-headed households had smaller land-holdings and cultivated from 31 to 74 percent of the land cultivated by male-headed households. Economic theory suggests that security of tenure which offers farmers a potential stream of future returns gives them a stake in ensuring its sustainability, and is linked to higher productivity and better management (Feder and Feeny, 1991).

Thus, lack of proper and easy access to and effective control over land reduces farm productivity in a number of ways. One, it tends to increase risk and lower profitability. Two, it provides no incentive for farmers. Three, it discourages investments needed to improve productivity. Since banks and other institutional creditors often require land as collateral for credit, women are particularly constrained and almost totally excluded because most of them do not have title to land. Women are allocated land in general through their husbands; when the husbands die, women are often dispossessed of these lands.

Meanwhile a number of studies have asserted that assets are important for reducing poverty, because they cushion risk and vulnerability from natural disasters, illness, or financial crises. Asset inequality, combined with market failures, leads to differential productivity between the asset poor and asset rich, which creates poverty and inequality traps (Banerjee and Duflo, 2003; Barrett and Carter, 2005; Carter and Zimmerman, 2000). The limited existing information shows that women in many countries are far less likely than men to have ownership or control of productive assets. In addition, women may not receive the benefits of assets held by men, even when they live in the same household (Deere and Doss, 2006a). Asset ownership influences the "fallback" position of each spouse in negotiations over key household and family decisions. and other ways of coping with shocks (Quisumbing and Hallman, 2006; Doss, 1996).

Beyond empowering women, productive assets play an important role in reducing poverty. A key element in poverty reduction is strengthening the ability of households and individuals to respond to aggregate shocks, such as droughts or floods, as well as idiosyncratic shocks, such as illness or divorce. The possession of assets helps households and individuals to cope with vulnerability and avoid impoverishment (Hulme and McKay, 2005; Hulme and Shepherd, 2003).

It is now generally accepted that African women represent a large proportion of the population on the continent, and are a very significant group of farmers. Unfortunately, the position and role of women in Africa's agricultural production, and the circumstances under which they are forced to operate are not well understood and appreciated. This undermines their position and contributions to their household economy and agricultural productivity. Traditionally, there is a general gender division of farm work in most African societies. The actual tasks performed by women differ between and within regions, sub-regions, and agro-ecological zones. The pattern of women's participation also varies over time, in response to actual economic, demographic, political, and other changes (Mehra, 1994).

In a survey of 20 villages in Eastern Nigeria, Ezeanyika and Okorie (1994a; 1994b) estimated that women in the villages surveyed in Abia, Anambra, Ebonyi, Enugu and Imo States contributed, on the average, 69 percent of the household income, and their earnings represented 82 percent of the subsistence food consumed by the household. Although there is ample evidence from

many African countries showing that rural women's contributions and financial share in their families are greater in poor households (Mehra, 1995), studies by Quisumbing (1993) carried out in the Northern regions of Nigeria and Kenya on a variety of crops showed, in most cases, that the marginal product of women's labor was lower than that of men. In other words, women work for longer hours than men.

In sub-Saharan African countries, there exists a common, but not general pattern of production based on gender division of labor between cash and food crops. Women are principally engaged in the production of subsistence crops while men are primarily responsible for growing cash crops with labor support from women. The Economic Commission for Africa (ECA) estimates that African women contribute, on the average, 70 percent of the labor force for food production, and a 100 percent in household food production, 50 per cent in animal husbandry, and 60 per cent in marketing (Cloud, 1986). Also, men and women have different degrees of access to resources, including natural resources, economic resources, and political resources. As such "women's entitlement to productive resources is not just a legal or policy matter; it is essentially a question of social transformation of gender relations and social institutions" (IFAD 2007: Musinga, Kemagne and Kivolonzi (2008).

Role of Small Ruminants in Household Social and Financial Security

The importance of small ruminants in income generation and households' social and financial security are well established in literature (Zelalem and Fletcher, 1993; Barrs, 1998; Workneh Ayalew, 1999). Small ruminants have a number of advantages for being an integral component of the pastoral production system. The small size of sheep and goats has distinct economic, managerial, and biological advantages. Economically, low individual values mean a small initial investment and correspondingly small risk of loss by individual deaths. Managerially, they are conveniently cared for by women and children, occupy little housing space, lower feed requirements, and supply both meat and milk in quantities suitable for immediate family consumption.

Moreover, sheep and goats are kept for a variety of economic reasons including savings and investment, security and insurance, stability, and social functions. Sheep and goats appear to withstand drought better than cattle, and their short reproductive cycle allows them to quickly recover from rapid resumption of breeding following drought or devastating disease infestation. The role of sheep and goats as a continuous source of protein during and immediately following a period of drought is one major reason for making them the most important component of livestock in pastoral and agro-pastoral production system (Wilson, 1991).

In contrast to large ruminants like cattle which are normally concentrated and remain in the hands of a restricted number of producers (high income rural households), small ruminants are dominant in almost every low income rural household. In the dry areas of Northern Nigeria, fewer than 20 percent of farmers own cattle (ILCA, 1980). In Côte d'Ivoire, Barry (1985) reported that, on average, fewer than four cattle are found on farms where there are ten sheep/goats. This ownership pattern characterises the legacy of sub-Saharan Africa's rural economy as capital constraints limit access to cattle among poor households whilst small ruminants are well suited for their financial and labor resource capabilities.

Small ruminants are a source of food and financial security for the rural poor. According to FAO (1983), more than 50 percent of milk produced for human consumption is from sheep and goats in Niger and Somalia. Thirty-five percent of the total Nigerian meat supply comes from small ruminants (Bayer, 1982) and almost 30 percent of the total meat consumed in the semi-arid zone is from small ruminants (Wilson, 1982). Little (1982) found that in pastoral production systems in Kenya, goats are usually the only source of milk available for households in the dry season when both sheep and cattle have migrated. Because of their small size, sheep and goats provide more convenient sources of meat than cattle as shown by Sarniguet et al., and Bayer (1982) found that small ruminant meat contributes three times more than beef to the total meat consumed in rural areas of northern Nigeria. It is generally more suitable to slaughter a sheep or a goat than a large animal such as a cow to feed community members engaged in communally private fieldwork.

Also, small ruminants provide cultural and economic benefits for households. In the same vein, while a 10 to 15 kg small ruminant carcass is easily handled by a rural household for either home consumption or sale without means of preservation, slaughtering even a steer (when it is available) for the same purposes is generally impracticable and uneconomical and is therefore a rare event. Where access to cash is limited and livestock marketing is not organized, small ruminants are directly exchanged for grain. Small ruminants are often slaughtered in honor of a special guest, a visiting friend or relative, for festivities and religious rituals. Small ruminants are also kept by poor rural households for ready cash income to meet immediate needs such as acquiring agricultural inputs, paying school fees and purchasing larger animals such as cattle. This is because rural households find it easier to find a buyer for a goat or a sheep than a cow. More importantly, small ruminants play a key role in stock association building between members living in the same community in rural areas (Okello, 1985).

From the foregoing, one can no longer overlook the importance of small ruminants in the economy of sub-Saharan Africa and in that of the low income families in particular. That sheep and goats allow poorer households to maintain their subsistence calls for an urgent need to examine how important they are in contributing to households' well-being. As Gatenby (1986) put it, "if the aim of a development project is to raise the living standard of the poorer sectors of the community, it is much more likely to do so if it concentrates on the production from small ruminants".

III. Methodology

Study Area and Sources of Data

The study was carried out in southwest Nigeria. The region is composed of six states – Ekiti, Lagos, Ogun, Ondo, Osun and Oyo. Primary data were collected from rural women from the six states. Information sought through the questionnaire include: socioeconomic characteristics, socio-cultural and environmental backgrounds, different activities and enterprises engaged in, different livestock raised or reared, incomes from these activities, the different kinds of transactions within the communities in which these animals are exchanged, other occupations, other livelihood assets, food security (availability, access and stability), health and income security, household welfare (housing, electricity, communication and other conveniences), and uses

of household wealth (especially animals). These were also complemented with information collected from livestock institutions in the study area.

Sampling Technique

A four-stage random sampling method was employed in selecting three states out of the six states in rural southwest Nigeria. The first stage of the sampling technique was a random selection of three states. The second stage involved selection of three Local Government Areas (LGAs) from each of the selected states. The third stage was a random selection of two communities or villages in each of the selected LGAs while the last stage was a random selection of households based on probability proportionate to size. In all, a total of about 500 questionnaires were administered out of which 450 were used in this study. The rest were discarded because of incomplete information.

Methods of Data Analysis

A number of statistical tools were employed to address the stated objectives of this study. Analytical methods employed include: descriptive statistics, poverty index measure, ordinary least squares regression analysis, and the coping strategies use index.

Descriptive statistics were used to analyse, describe and summarise respondents' socioeconomic, cultural and environmental related variables. The two-third poverty measure was employed to categorise respondents into two classes: the poor and non-poor class.

Regression modeling was on the other hand used to examine the extent to which small ruminants have assisted in helping rural women in the study area meet their financial obligations while an estimation of the *coping strategies use index* was done to rank the frequency of use of other available and accessible ways of meeting these obligations.

The implicit and explicit form of the regression model (Greene, 2003) employed is of the form:

$Y = f(X_1, X_2, X_3, X_4, \text{----------}, X_{10}, e_i)$

$Y = a_o + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + e_i$

Where,

Y = Income in Naira generated from livestock sales

X_1 = Age of respondents (years)

X_2 = Marital status of respondents (married = 1, single/divorced/widowed = 0)

X_3 = Educational status of respondents (years)

X_4 = Poverty status of respondents (poor = 1, non-poor = 0)

X_5 = Household size (number)

X_6 = Extension contact (yes = 1, no = 0)

X_7 = Membership of cooperative society (yes = 1, no = 0)

X_8 = Flock size (number)

X_9 = Experience in livestock husbandry (years)

X_{10} = Other assets (value of other assets in Naira)

e_i = Error term

Coping Strategies Use Index (CSUI) - In analysing the frequency of use of all available and accessible coping strategies by women in the study area, a coping strategy index (CSI) was developed by ranking. The extent of use of the coping strategies was expressed by using a four-point scale with the scoring order 3, 2, 1, and 0 for frequently used, occasionally used, rarely used and not used respectively. The formula used to obtain the CSI score was adapted from Islam and Kashem (1999) where they estimated the use of ethno-veterinary medicine in livestock management and rearing. This was modified to obtain the CSI as:

$$CSUI = N_1X3 + N_2X2 + N_3X1 + N_4X0$$

Where:

CSUI = Coping strategies use index

N_1 = Number of households using a particular coping strategy frequently

N_2 = Number of households using a particular coping strategy occasionally

N_3 = Number of households using a particular coping strategy rarely

N_4 = Number of households not using a particular coping strategy.

The CSUI was used in a rank order to reflect the relative position of each of the CSI in terms of their use. The extent of use of the coping strategies was obtained for all respondents in the study area.

IV. Results and Discussion

Socioeconomic Characteristics of Respondents

A number of socioeconomic characteristics of respondents were subjected to statistical analysis and the results are presented below. In our data analysis in Table 1, the average age of respondents in the study area is 48 years old, implying that they are young and able to work. Distribution of respondents by marital status reveals that more than half are married (57.6 percent), while only about 22.9 percent are single. The rest are either divorced or widowed (19.5 percent). Educational distribution of respondents indicates that only about one-third (33.8 percent) are educated up to the tertiary level. While about 48.7 percent did not receive formal education, the rest received either primary or secondary education. Average household size of respondents is seven, and this large household size decreases respondents' per capita income, further lowering their poverty status. Also, respondents' distribution by membership of social group/association (especially cooperative societies) indicates that over three-quarter (77.3 percent) belong to one association or another . Such association is very important in creating a platform to showcase what they have to sell thereby enhancing the ease of converting small ruminants into credit facility or ready-made cash. Occupational distribution of respondents shows the relatively high importance of farming (agriculture – crop/animal husbandry) compared to other occupations available in the study area. Thus, while about 58.7 percent of the respondents indicate agriculture as their main source of livelihood, over two-thirds indicate farming as an alternative source of income. In other

words, farming remains the highest source of labor among women in rural southwest Nigeria. Next to this are artisans (21.1 percent). Only about 11.3 percent are engaged as civil servants in the government parastatals or ministries.

Table 1: Distribution of respondents by socioeconomic characteristics

Variable	Frequency	Percentage
Age		
< 30	53	11.8
31 - 40	92	20.5
41 – 50	155	34.4
51 – 60	108	24.0
> 61	42	9.30
Marital status		
Married	259	57.6
Single	103	22.9
Widowed	37	8.2
Divorced	51	11.3
Educational status		
No formal education	219	48.7
Primary	47	10.4
Secondary	32	7.1
Tertiary	152	33.8
Household size		
1-3	81	18.0
4-6	98	21.8
7-9	161	35.7
10-12	70	15.6
13 and >	40	8.90
Membership of social group		
Yes	347	77.1
No	103	22.9
Primary occupation		
Farming	264	58.7
Trading	23	5.1
Civil Service	51	11.3
Artisans	95	21.1
Private salaried job	17	3.80
Total	**450**	**100.0**

Source: Computed from survey data

Types of Livestock Raised by Respondents

Analysis of respondents based on the types of livestock raised reveals the highest preference for goats with about 72 percent (Table 2), and this is largely due to its wide acceptability and ease of domestication in terms of adaptability to the prevailing environmental conditions in the study area. Again, the fact that goat meat is consumed by all households in the study area and that it has no religious or cultural restr ictions make it better placed among residents of the study area. Moreover, in terms of marketability, goats are very easy to market since they have a higher rate of survival when compared with other small ruminants/livestock. The second highest is poultry (53.5 percent) and this is closely followed by sheep (28.1 percent) and swine (11.3 percent).

Table 2: Distribution of Respondents by Types of Livestock Reared

Livestock	Number	Percentage
Poultry	241	53.5
Sheep	127	28.1
Goats	324	71.9
Swine	51	5.8
Rabbits	13	2.9
Others	21	4.7

Source: Computed from survey data

Poverty Status of Respondents

An estimation of poverty status of respondents was done using the two-third mean per-capita expenditure. The result obtained reveals that income per-capita of about two-thirds (65.1 percent) of the respondents is below N3,120 ($20.5) per month. This indicates high levels of poverty, especially among rural women living on less than one dollar per day. Respondents were categorised into poor and non-poor class as shown below:

Total expenditure on food and non-food items (Monthly) = N2,106,000.00
Number of respondents = 450
Mean per-capita expenditure = N2,106,000/450 = N4,680.00
Core poor = 1/3 * 4680 = N1,560.00/month
Moderately poor = 2/3 * N4,680 = N3,120.00 /month

Respondents are then categorised based on two-third mean per-capita expenditure. This method divided the respondents into two groups (Table 3): the poor whose expenditure is below N3,120 ($20.5) and non-poor whose expenditure equal to or above N3,120 ($20.5). One USD = N152 and daily per-capita expenditure as estimated is N104 ($0.68) which is far below one dollar.

Table 3: Distribution of respondents by poverty status

Variable	Frequency	Percentage
Core poor	195	43.3
Moderately poor	98	21.8
Non-poor	157	34.9
Total	450	100.0

Source: Computed from survey data

Explaining Different Ways by which Small Ruminants are Being Employed as a Source of Financial Security in Rural Southwest Nigeria

In ascertaining the various ways by which small ruminants have assisted women in rural southwest Nigeria in meeting important social and financial obligations, respondents were given the freedom to express their minds and the responses were summarised as presented in Table 4. Most of the respondents (67.7 percent) expressed the income generated from their involvement in small ruminants rearing helped them significantly to attend to other important issues in the welfare of household members since the income generated from other sources is not enough to cope with increasing demands on the home front. For example, small ruminants rearing has provided a leeway for important unforeseen financial demands like paying hospital bills (10.4 percent) and assisting relations in emergency situations (7.8 percent). From the interviews conducted, most of the households surveyed rely on income from small ruminants' sales especially when there is scarcity of food either due to lean harvest or when the stock of available food is exhausted. Again, a sizeable number of the respondents rely solely on small ruminants rearing in paying the school fees of their wards. This is done in such a way that the repayment plan of any money borrowed/loan taken to meet this important obligation coincides with the time these animals are ready for the market (i.e. attain market weight).

Table 4: Ways by which small ruminants assist women in meeting households' obligations

Variable	Frequency	Percentage
Buying food	15	3.3
Paying school fees	189	42.0
Paying house rent	45	10.0
Paying medical bills	47	10.4
Building house	33	7.3
Buying other household needs	09	2.0
Assisting relations in settling contingencies	35	7.8
Performing burial rights	23	5.1
Collateral/pledge for land used for farming activities	13	2.9
Performing marriage rights	17	3.8
Meeting naming ceremony obligations	24	5.3
Total	450	100.0

Source: Computed from survey data

Explaining Determinants of Income Realised from Small Ruminants' Rearing among Women in Rural Southwest Nigeria

In explaining the determinants of income realised from small ruminants' rearing (Table 5) among women in the study area, the ordinary least squares regression model was employed and the result shows that:

Respondents' age, educational status ($p<0.01$), household size ($p<0.00$), poverty status ($p<0.01$) extension contact, membership of cooperatives ($p<0.10$) and size of flock ($p<0.00$) are important determinants. Thus, while the coefficients of educational level, extension contact, membership of cooperatives and flock size are positively related to income realised from small ruminants rearing, the coefficients of age, household size and poverty status are negatively related to it. For example, the higher the educational status and the higher the flock size of respondents, the higher the income realisable from small ruminants rearing. This is because education enhances adoption of better management practices that can boost productivity and sales of farm produce especially among farmers. Thus, increased/enhanced income is assumed to be a precursor of being able to meet household financial obligations.

Table 5: Regression result showing how small ruminants assisted respondents in meeting financial obligations

Variable	Coefficient	Standard Error
Age (X_1)	0.0143	(0.947)
Mstat (X_2)	-0.0093	(0.085)
Eduyrs (X_3)	0.371**	(0.129)
Povstat (X_4)	-0.011**	(0.006)
Hsize (X_5)	-0.136***	(0.034)
Extcont (X_6)	3.731	(2.146)
Coopmem (X_7)	0.043*	(0.023)
Flock size (X_8)	0 .910***	(0.192)
Experience (X_9)	0.0207	(0.035)
Other asset (X_{10})	0.105	(0.391)
Constant	0.859***	(0.093)

*Coefficients significant at 10%; **Coefficients significant at 5%;
***Coefficients significant at 1%; Source: Computed from survey data

Strategies Employed by Women in Southwest Nigeria in Meeting Domestic/Household Obligations

Women in rural southwest Nigeria employ a number of strategies to cope with household demands in terms of ensuring that every member of their households is adequately catered for. These strategies range from skipping meals and reducing food intake to migrating to city centres in search of jobs to staying with relatives. Again, the frequency of use of these strategies was assessed to ascertain the most employed available and accessible strategy in the study area using the coping strategies used index (CSUI). Thus, the strategy with the highest index takes the highest value while the least patronised of all the strategies take the least value. Ranking these strategies according to their patronage can be useful to assist policy actors for effective intervention strategies that will impact the lives of these women and also have a multiplying effect on the respondents. From the result presented in Table 6, taking loan from cooperatives (27.5 percent) was the most employed strategy and this is closely followed by reducing expenditure on non-food items (18.8 percent). The least patronised of these strategies is begging for alms and assistance with only about 2.6 percent of the respondents using it.

Table 6: Ranking of accessible strategies employed based on the frequency of use

Coping Strategy	Frequently Used	Occasionally Used	Rarely Used	Not Used	CSUI	% Households	Rank
Withdraw from personal savings	31	22	31	11	168	8.1	5
Take loan from cooperatives	158	43	10	08	570	27.5	1
Going to Friends/Relatives	15	26	44	18	141	6.8	6
Borrowing from banks	23	42	48	12	201	9.7	4
Reduce expenditure on non-food items	79	54	45	14	390	18.8	2
Withdrawing children from school to assist	8	17	63	110	121	5.8	7
Run to local authorities	4	6	54	123	78	3.8	8
Reduce food intake	67	21	44	120	287	13.8	3
Migration to cities	3	10	35	35	64	3.1	9
Begging for alms	3	18	20	57	55	2.6	10

Source: Computed from survey data

Enablers of and Constraints to Monetizing Small Ruminants in Rural Southwest Nigeria

Small ruminants' rearing is a common practice in rural Nigeria especially among women with little or limited access to productive resources. In fact, a closer analysis of the information gathered revealed that women involved in this practice even as secondary source of livelihood are better able to cope with shocks arising from loss of job from private organisations. Meanwhile, a notable enabler of small ruminants' monetization includes being a member of social groups and associations (cooperatives in particular) since this provides an avenue to showcase one's prowess and skills through participation in regular meetings and getting to know the financial needs and positions of members. Also, the issue of social capital in the form of trust and family ties confers some degree of confidence in those ready to shoulder the financial needs of these women in anticipation of a handsome reward after the sales of these small ruminants. Again, the recent professionalization of animal science as a special discipline in Nigeria has helped those involved in animal husbandry (small and large scale) be better informed about ready markets for their livestock and what can be done to make the profession sustainable. On the other hand, the process and ways of monetizing these small ruminants is fraught with a plethora of problems, some of which directly hampers women trying to enhance the financial security of their household members. Prevalent among these constraints are increased mortality of the animals especially during the raining season, theft or pilfering of these animals since most of them are left to graze unmonitored, disease and pest infestation, exorbitant prices charged by veterinary doctors which invariably add to production costs, inaccessible credit facilities resulting from lack of collaterals, stringent repayment plans, poor management skills on the part of women, and unstable socioeconomic environment resulting from volatile government policies.

V. Summary of Findings, Conclusion and Recommendations

This study examined the extent to which small ruminants' rearing assisted women in rural southwest Nigeria in meeting household and other important obligations. Analysis of socioeconomic data obtained through questionnaires reveals that respondents are young and are able to work with over two-thirds of the respondents below 50 years of age. Distribution of respondents by household size shows that the general household size is fairly large with over two-thirds of those surveyed living on less than one dollar a day, poverty in rural southwest Nigeria is endemic. Farming is also found to be the highest employer of labor among respondents and this is closely followed by those engaged in the informal sector. Among the small ruminants and other livestock raised, it was discovered that goat is the most preferred of all the small ruminants raised in the study area because it has no religious or cultural restrictions, and it is consumed by all households.

In our tables and regressions, we presented the degree of the importance of the determinants of income realisable from small ruminants' rearing, years of formal education, flock size, household size, poverty status and membership in cooperatives. Thus, a change in any of these variables will affect their income (proxy for ability to meet financial obligations) either positively or negatively. For instance, the coefficients of years of formal education, extension contact, and being a member of cooperatives are positive indicating that an increase in any of these variables will positively affect income realisable from small ruminants' rearing, while the variables of poverty levels and household size will negatively affect the income from small ruminants. In general, small ruminants rearing and husbandry are ways of storing wealth and meeting unexpected financial obligations especially among the poor in the study area.

Conclusion

The place of small ruminants in meeting social and economic needs of women in rural southwest Nigeria cannot be overemphasised. This is closely connected to the different roles that these animals play in providing a sigh of relief, especially when there are production shortfalls or unexpected contingencies resulting from ill health, changes in government policies, etc. It is a well known fact that these animals are the easiest and readily accessible means of coping with shocks (especially the idiosyncratic type), and this underscores the need for governments to provide enabling environments that will better enhance and encourage investment in small ruminants' husbandry.

Policy Recommendations

Based on the findings from the study, it is recommended that:

1. Effort should be intensified at building capacity of women in rural southwest Nigeria through education which can enhance their productivity. In our study, the few women with tertiary education were able to manage the livestock-financial needs interface better than those without formal education. Again, education is empowerment which can translate to better adoption of technology that will invariably enhance output and increase revenue.

2. Governments should intervene to encourage women to engage in cooperative activities by providing the initial take-off capital needed and fostering an enabling environment for cooperative activities to thrive.

3. Household size of respondents in the study area should be put under check through sensitisation to family planning techniques and use of contraceptives as this will help reduce poverty. The increased household size reduces income per head (per-capita income) which invariably leads to increased poverty.

4. Government efforts should also be intensified at making more extension agents available and accessible to these women. This can be done through employing more hands to complement available personnel and giving them all necessary incentives.

5. Improvement in existing infrastructural facilities will help promote expansion of the present scale of operation. This is important once the small ruminants' rearers are assured of ready market and good bargaining for their efforts in meeting the protein needs of Nigerians.

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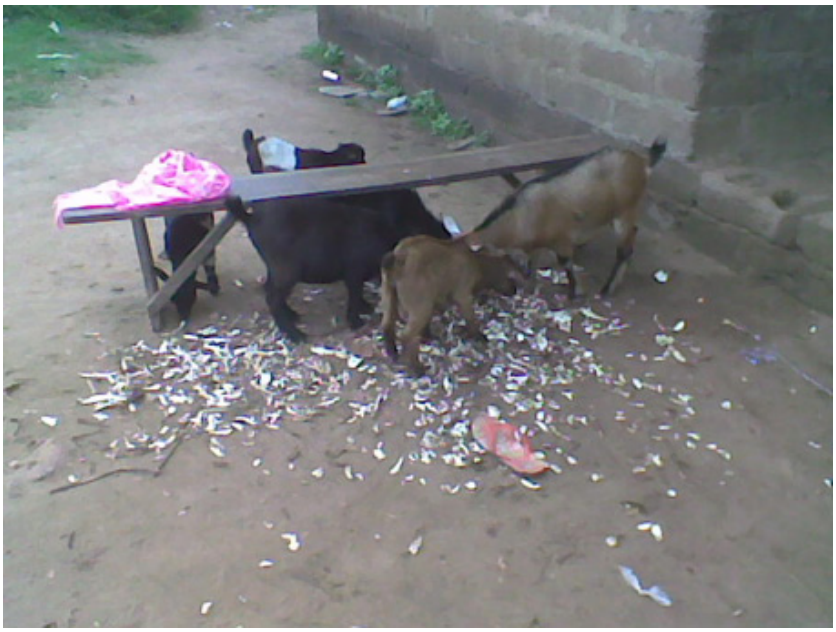
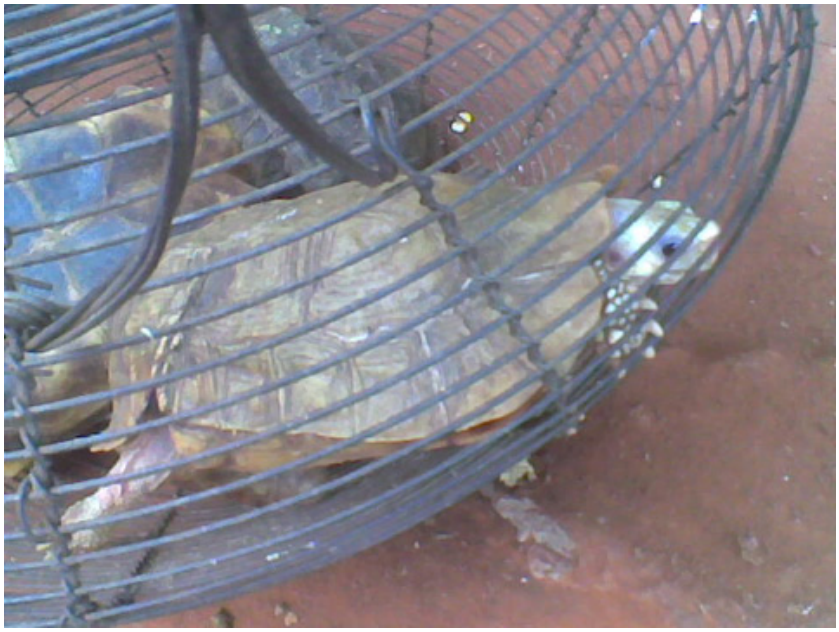
Picture 1. Women in the market selling livestock



Picture 2. Small ruminants feeding on cassava peel



Picture 3. Other animals (tortoise) dealt in by women in rural southwest Nigeria

Picture 4. A research assistant interviewing a respondent while on field survey