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Livestock and livelihoods spotlight

NIGERIA

Cattle and poultry sectors

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Livestock and livelihoods spotlight Nigeria

I. Introduction

Livestock contributes to people's livelihoods through numerous channels: income, food, employment, transport, draft power, manure, savings and insurance and social status. Livestock keeping is an essential part of the Nigerian society and economy: around 13 million households keep farm animals and the sector contributes 6 to 8 percent of the national GDP (ASL 2050, 2018). This brief provides evidence on the contribution of the dairy and poultry[1] sector to people's livelihoods in Nigeria, which both are given priority in the Agricultural Promotion policy 2016-2020.

The Nigerian poultry industry comprises about 180 million birds – Nigeria has the second largest chicken population in Africa after South Africa (SAHEL, 2015) – producing 650 000 tonnes of eggs and 300 000 tonnes of poultry meat in 2013 (FAOSTAT, 2017). Cattle milk production amounts to 585 000 tonnes of milk per year, that only covers 40 percent of the demand (ASL 2050, 2018). This brief summarizes available information on how cattle and chicken production contribute to people's livelihoods in the different production systems, as characterized by stakeholders (see Table 1). It relies on data from the Nigeria General Household Survey (NGHS) 2015/16 of the National Bureau of Statistics, a representative multi-topic household survey with a focus on agriculture. NGHS data allows to determine income from different activities, production practices and consumption patterns, shedding light on cash income and nutrition related benefits from livestock.

Table 1 Cattle production systems in Nigeria

Nomadic pastoral systems (extensive)	In pastoral or free grazing systems, farmers move cattle from place to place in search of pastures and water. Herd size ranges from 100 to 300 heads of indigenous breeds. Production is subsistence oriented and animals are kept on uncultivated pastures and rely on grazing without any feed supplements. Main products include beef, milk, blood, hides, manure and horns. This system is dominant in Northern Nigeria.
Agro-pastoral systems	In agro-pastoral systems, farmers are engaged in growing crops and raising livestock. They keep mainly indigenous breeds, with herd size ranging from 20 to 100 heads. Dairy production's objective is hereditary or commercial. Family labour is mainly used and animals rely on grazing on demarcated rangelands and supplementary feeds. This system is present in the southern regions.
Commercial systems (intensive)	In commercial systems, animals are raised for maximum milk output and they are kept indoors in sheds or paddocks and are well supplied with necessary nutrition and bio-security. Farmers keep mainly exotic breeds, with herd size ranging from 50 to 1000 heads. Feed comes from cultivated pastures and there is no grazing. Eighty percent of the commercial dairy farms are located in the North Central region.

[1] All statistics presented in this brief for the poultry sector refers to chicken, which are the largest majority of domesticated birds in Nigeria.

Table 2 Poultry production systems in Nigeria

Free-range system (extensive)	Farmers keep indigenous chicken flocks, which are left to roam around and scavenge for food and water. Flocks contain birds of different species and varying ages. There may be rudimentary shelter, though most birds roost outside in trees or nest in the bushes. Production is subsistence-oriented, mainly for family consumption. This system is present mainly in the northern regions of the country.
Semi-intensive system	Farmers in semi-intensive poultry systems keep flocks of about 50 to 2000 birds, including both improved and unimproved breeds. It refers as small-scale family poultry keeping by house-holds using family labor and locally available feed resources, often complementary to other farming activities. Housing is not elaborate, sometimes wooden/metal cages are used to provide the chicken with shelter and some commercial feeds are used. The small-scale poultry producers tend to sell live birds through informal marketing channels. Semi-intensive poultry farms are mainly located in the southern regions of the countries.
Commercial systems (intensive)	In intensive systems, farmers keep more than 2000 exotic birds of one species, producing either meat or eggs for the market. This system ranges from medium to large scale commercial enterprises and high premium is given to stock breed, feeding, housing and health. The more advanced integrated holdings use automated chain feeding and watering systems. This system is dominant in the southern regions of the country.

II. Methodology

The Nigeria General Household Survey is a multi-topic household survey implemented by the Nigeria Bureau of Statistics with technical assistance from the World Bank's Living Standard Measurement Studies (LSMS) unit. Around 5 000 households are interviewed, and the data is representative at the national and zonal level. However, the representativeness of the survey is to some extent limited when attempting to generate livestock statistics as the sample has been designed based on the location and size of population in the country. The implication is that production systems that are easily associated with households (agro-pastoral systems, free-range and semi-intensive chicken systems) are better represented than others.

While households derive multiple benefits from owning livestock, the focus here is on income (revenue minus cost) and consumption of animal source foods, which can be measured with NGHS data. Revenue from livestock includes sales of live animals and livestock products as well as own consumption of animal source foods. Costs included in the calculation are expenditure on feed, housing, labour and medical services. However, as cost data are not asked by animal species, we cannot calculate livestock income separately for the different species[2]. Other sources of income included in the calculation are wages, net income[3] from crop activities, net income from off-farm self-employment (family enterprises) and remittances.

[2] E.g. Question on feed: How much has your household spent on animal feed in the last month? For how many months did your household purchase animal feed?
[3] Revenues minus operating costs

III. Poultry (chicken)

III.1 Poultry production in Nigeria

Poultry production in Nigeria amounts up to 454 billion tonnes of meat and 3.8 million eggs per year, with a standing population of 180 million birds. About 80 million chicken are raised in extensive systems, 60 million in semi-intensive systems and the remaining 40 million in intensive systems (ASL 2050, 2018). As the NGHS is a household survey, data on commercial systems is limited, with only three households in the sample reporting production practices that correspond to the intensive system.

To characterize extensive systems we have analysed data from households that keep only local breeds, do not purchase feed, and do not market their produce. Commercial systems include households (farms) that keep over 1000 exotic broilers or layers. Households "in between" these two categories represent the semi-intensive production systems. Table 3 presents summary statistics for the different production systems:

Table 3 Chicken keeping households in the Nigeria General Household Survey

	Average flock size	Average number of layers	Average number of broilers[4]	Vaccination rate %	Number in sample	Household numbers (thousand)	Chicken number (thousand)
Extensive	12	-	-	4%	1247	6 632	78 238
Semi-intensive	54	145	121	13%	204	1 256	68 345
Intensive	2 625	2 671	2 165	100%	3	17	45 156

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

From the sample we estimate that the 78 million chicken in the extensive (free-range) system are kept by 6.6 million households; the 68 million chicken in semi-intensive systems are kept by 1.3 million households; and there are 17 thousand commercial holdings keeping 45 million chicken altogether. In the sampled households, vaccination rate increases with intensification: only 4 percent of households vaccinate their animals among the free-range chicken keepers; this ratio is 13 percent among semi-intensive holdings, and all intensive holdings reported to vaccinate their birds.

III.2 Chicken keepers' income

Figure 1 presents the average annual income levels of chicken keeping households in the different production systems. Total household income is the sum of the net income from livestock activities, the net income from crop activities, the profit of a non-farm family enterprise owned by the household, wages of the household members and remittances received (both from private and public sources). As explained above, we cannot calculate the income of livestock activities by species due to the aggregation of expenditure, therefore in the third and fourth column we show the average income of those households that only keep chicken. As expected households keeping only chicken have, on average, a lower total income and a lower livestock income than households keeping both poultry and other animals.

[4] There is one farm reporting keeping a flock of 2 165 broilers, but there is a lot of missing information on income components and therefore they are not included in that section.

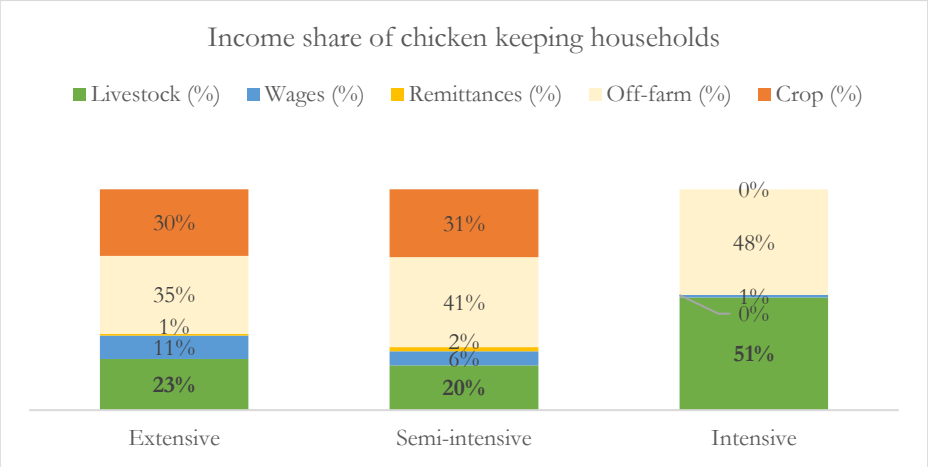
Table 4 Chicken keeper households' income levels

	All households keeping poultry		Households keeping ONLY poultry	
	Average HH income (NGN)	Income from livestock (NGN)	Average HH income (NGN)	Income from livestock (NGN)
Extensive	302 673	26 084	194 464	3 649
Semi-intensive	586 212	117 649	1 853 523	89 130
Intensive	17 004 561	15 868 348		

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

Income from livestock presents a significant share of total household income across all production systems, contributing 23, 20 and 51 percent of total household income in extensive, semi-intensive and intensive systems respectively. Off-farm labour is also an important source of income and can also include processing or marketing of milk, meat or eggs.

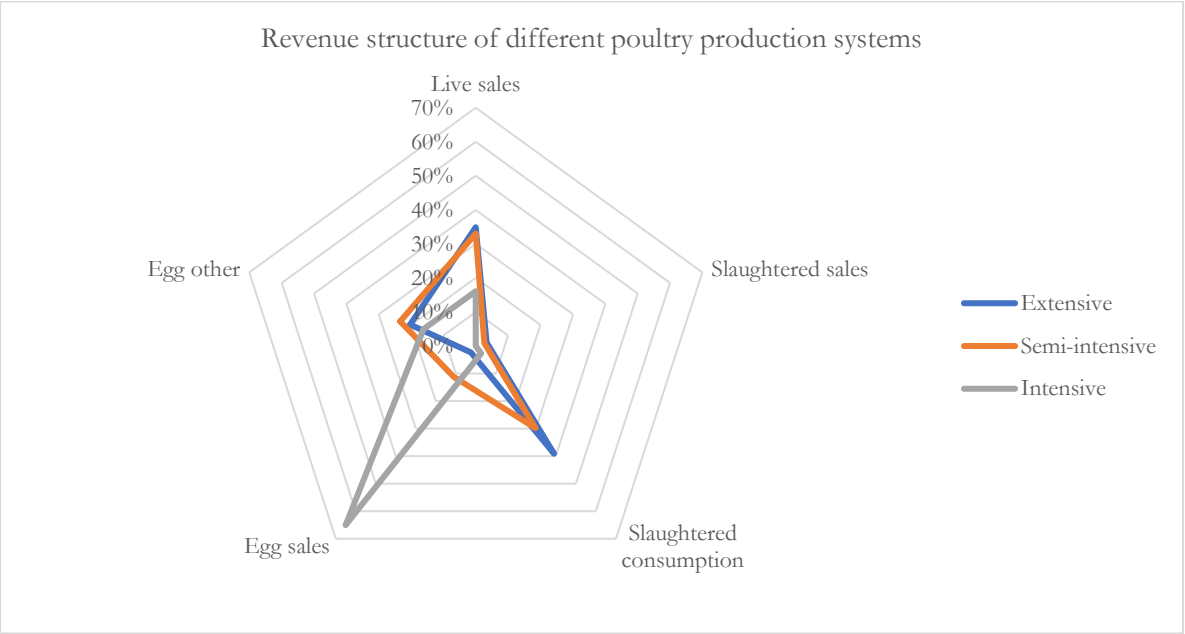
Figure 1 Income sources of chicken keeping households by production systems



Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

The level and structure of gross revenues from poultry are very different across production systems. Figure 2 shows that consumption of slaughtered birds and sale of live chicken is the main revenue source of poultry keepers in extensive and semi-intensive systems. In intensive systems, for which information is available only for layer farms, the main source of income is derived from sale of eggs, with other revenues coming from egg production (consumption, given away, used as in-kind payment) and sale of live birds. In terms of levels, Table 5 shows that average revenues grow immensely with intensification. Note, however, that Table 5 presents revenues from only chicken related activities, while Table 3 presents net income from all livestock-related activities.

Figure 2 Revenue structure of chicken production



Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

Table 5 Average revenues from chicken production activities

	Average gross revenue from chicken production (NGN)
Extensive	4 513
Semi-intensive	33 697
Intensive	19 171 837

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

III.3 Consumption of chicken meat and eggs

Beyond cash income, poultry keeping contributes to livelihoods through providing protein and other nourishments from consumption of own production. Table 6 shows the percentage of households consuming poultry meat and eggs, the average per capita weekly consumption and the share of consumption derived from own production. Consumption data are based on a recall period of 7 days and, as such, they only capture frequent or regular consumption. In intensive systems of production consumption of meat and eggs is continuous throughout the year and comes from own production. In other production systems, there are periods when there is no production and hence households might purchase poultry meat and eggs. Additionally, some households receive such products as a gift from neighbours or relatives.

Table 6 Consumption of chicken meat and eggs

	% households consuming in last 7 days		Average consumption per week per capita		Share of own production in consumption	
	Chicken meat	Eggs	Chicken meat (grams)	Eggs (grams)	Chicken meat	Eggs
Extensive	8%	14%	225	70	68%	26%
Semi-intensive	17%	29%	213	77	70%	48%
Intensive	53%	53%	750	263	100%	100%
Non-poultry keepers	4%	14%	228	87		

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

IV. Cattle (dairy)

Nigeria is a net importer of dairy products: currently, 60 percent of dairy products consumed are imported to satisfy the demand of about 1.3 billion tonnes of milk annually (ASL 2050, 2018). Nigeria dairy production is mainly subsistence oriented and with low productivity: the average production per cow per year is 213 litres, less than one tenth of the global average (Makun, 2018). FAOSTAT reports a cattle population of 20 million heads, including 2.2 million dairy animals (FAOSTAT, 2018).

IV.1 Dairy production systems

In Nigeria, there three major forms of dairy production systems, including the pastoral, agro-pastoral and intensive (commercial) systems. Due to their nomadic feature, pastoral households are less well represented in the NGHS survey with respect to agro-pastoral households, while commercial farms are underrepresented because of the nature of the survey, which targets households.

In order to generate statistics for the dairy sector, we consider as dairy households those that keep at least one cow or heifer. The sample includes thus 311 households or 57 percent of the 542 cattle keeping households in the sample.

Pastoral households are defined as those that do not purchase feed, have not constructed shelter for their animals, and derive no or a minimal income from crops. Commercial households of farms are considered as those keeping at least 50 cows, selling at least 50 000 litres of milk per year, and regularly purchasing feed. All other dairy households are assigned to the agro-pastoral production system.

IV.2 Cattle keepers' income

Income from livestock has been calculated as the sum of live and slaughtered animal sales, consumption of slaughtered animals, and value of milk and egg production minus operating expenses (feed, labour, housing) and purchase of animals. In pastoral systems, two thirds of total household income is derived from livestock, with the second most important income source being off-farm family labour (17 percent of total income), which also includes processing and marketing of livestock products. In agro-pastoral systems, crop income contributes 43 percent to total household incomes, with livestock activities contributing 30 percent. In the commercial dairy households in our sample, livestock keeping is the only source of income.

Table 7 Income level and structure of dairy cattle households

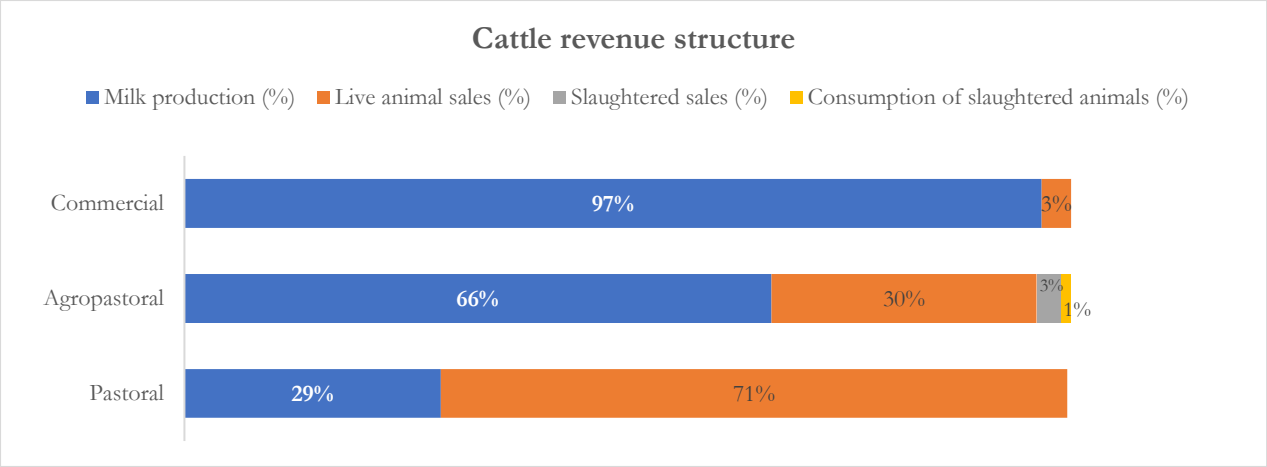
	Average HH income (NGN)	Income from livestock (NGN)	Livestock (%)	Crop (%)	Wages (%)	Off-farm (%)
Pastoral	447 869	341 743	67%	0%	15%	17%
Agro-pastoral	358 235	116 908	30%	43%	4%	23%
Commercial	8 732 000	8 732 000	100%	0%	0%	0%

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

The presented figures are an underestimation of the real value of cattle to household livelihoods because the data does not allow estimating the value of non-tradeables, such as the use of animal draft power, the value of dung to increase soil fertility, the insurance and social value of live animals.

Milk production is a key contributor to total revenue from cattle, constituting 29, 66 and 97 percent of total revenues for pastoral, agro-pastoral and commercial systems respectively. Sale of live animals is the other major component of cattle revenue, and sale and consumption of slaughtered animals is only 3 and 1 percent in agro-pastoral systems, and negligible in pastoral and commercial systems. The high share of live animal sales with respect to milk production in the total revenue of pastoral households is partially a result of low milk yields and short milking periods in this production system.

Figure 3 Gross revenue from cattle activities of dairy holdings



Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

IV.3 Dairy consumption

Beyond cash income, cattle provide protein and other nourishment to livestock-keeping households. Table 8 shows the percentage of households consuming dairy products, the average consumption per week per capita and the share of consumption derived from own production. Similarly to chicken production, these data are based on a recall period of 7 days and, as such, they only capture regular consumption. In intensive production systems consumption of milk and dairy productions is continuous throughout the year with all products originating from own production. In the other production systems, there are periods when there is no production and hence households might purchase some milk or dairy products. Additionally, some households receive such products as a gift from neighbours or relatives.

Table 8 Dairy consumption based on a 7-day recall period

	Share of households consuming dairy (%)	Average consumption per week per capita (litres)	Share of own production in consumption (%)
Pastoral	43%	0.61	25%
Agro-pastoral	53%	0.49	40%
Commercial	100%	2.00	100%
Non-dairy keepers	38%	0.11	

Source: Authors' calculations using Nigeria General Household Survey 2025/16, National Bureau of Statistics

V. Conclusion

Livestock, including cattle and poultry, are a major contributor to household livelihoods in Nigeria, through income and nutrition related benefits. In cattle production systems, livestock contribute between 30 to 100 percent to total household income, and in poultry production systems between 20 to over 50 percent. Additional benefits farm animals provide include non-tradable goods and services, such as draft power, manure, social capital and hauling services, which however are difficult to quantify because of lack of data. In addition, the low level of productivity and use of animal health services – only 7 percent of the holdings report to have at least one cattle vaccinated, and 28 percent report at least one cattle affected by diseases; only 6 percent of poultry farmers report to have vaccinated at least one bird, and 15 percent report diseases in their flocks – suggest there is major potential to enhance the contribution of livestock to household livelihoods and well-being. The way the livestock sector will evolve in the coming years, in response both to broad economic development and the implementation of the Agricultural Transformation Policy, can thus significantly improve the livelihoods of a large share of the Nigerian population.

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