

Research Application Summary

**Extent of commercialization of indigenous chicken production in Northern Uganda**

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**Abstract**

Indigenous chicken production has been recognized as an avenue to improve livelihoods of the rural households in Northern Uganda, where they provide meat, eggs and income. Venturing into commercial indigenous chickens is a pathway to meeting the current unmet market demand for indigenous chickens and their products. Although commercial indigenous chicken production is promising, little information exists on the degree to which the indigenous chicken farmers have taken it up. Thus, a household survey was conducted to determine the level of indigenous chicken commercialization in Northern Uganda. Using a multi-stage sampling procedure, a total of 180 indigenous chicken farming households were purposively and randomly selected to participate in the study. Data were analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics was used to characterize farmers; market participation index was used to measure the level of commercialization. Results showed that overall mean household size was seven and that all households reared and sold indigenous chicken. Mean experience in local chicken production was 17 years although it was significantly different between the two districts ( $p < 0.1$ ) with Omoro farmers having more experience than Oyam farmers. Average household flock size was 31 chickens consisting of 14 chicks, 5 cockerels, 6 pullets, 4 hens and 2 cocks. Although all households sold indigenous chickens, the level of commercialization varied from household to household. The overall proportion of chicken sales per household was 42%. Of the household flock structure, cocks and cockerels were more sold than hens and pullets. The level of commercialization (42%) reported shows that farmers in Northern Uganda are yet to become fully commercialized. The threshold for full commercialisation is 50%. Thus, efforts should be directed towards increasing commercialization of indigenous chickens. Additionally, there is need to train farmers on proper chicken management, record keeping and encourage group formation.

Key words: Commercialization, indigenous chickens, Northern Uganda

**Résumé**

La production de poulets locaux a été reconnue comme un moyen d'amélioration des conditions de vie des ménages ruraux du nord de l'Ouganda, où ces poulets sont source de viande, d'œufs et de revenus. S'engager dans la commercialisation des poulets locaux

est un moyen pour satisfaire la demande actuelle en poulets locaux et produits dérivés. Bien que la commercialisation des poulets locaux soit prometteuse, peu d'informations sont disponibles sur le niveau d'engagement dans cette activité par les producteurs de poulets locaux. Ainsi, une enquête a été menée auprès des ménages afin de déterminer le niveau de commercialisation des poulets locaux dans le nord de l'Ouganda. À l'aide d'une procédure d'échantillonnage en plusieurs étapes, 180 ménages de production de poulets locaux ont été choisis de façon aléatoire pour participer à l'étude. Les données ont été analysées à l'aide du logiciel SPSS. Des statistiques descriptives ont été utilisées pour caractériser les agriculteurs; l'indice de participation au marché a été utilisé pour mesurer le niveau de commercialisation. Les résultats ont montré que la taille moyenne globale des ménages était de sept et que tous les ménages élevaient et vendaient du poulet local. L'expérience moyenne dans la production du poulet local a été de 17 ans, bien qu'elle diffère significativement entre les deux districts ( $p < 0,1$ ) avec les agriculteurs d'Omor plus expérimentées que les agriculteurs d'Oyam. La taille moyenne des volailles était de 31 poulets composés de 14 poussins, 5 jeunes coqs, 6 poulets, 4 poules et 2 coqs adultes. Bien que tous les ménages commercialisent les poulets locaux, le niveau de commercialisation a varié d'un ménage à l'autre. La proportion globale de vente de poulets locaux au niveau ménage était de 42%. De la structure des ovins, les coqs étaient plus vendus que les poules et les poulets. Le niveau de commercialisation (42%) indique que les agriculteurs du nord de l'Ouganda ne sont pas encore totalement impliqués dans la commercialisation des poulets locaux. Le seuil de pleine commercialisation étant de 50%, les efforts devraient donc viser à accroître la commercialisation des poulets locaux. En outre, il est nécessaire de former les aviculteurs à une gestion adéquate des stocks de leurs volailles, à l'enregistrement des données et à la formation de groupes.

Mots clés: commercialisation, poulets locaux, Nord Ouganda

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## Introduction

Worldwide, chickens constitute the most widely spread and highest number of livestock species reared (Perry *et al.*, 2002; Moreki *et al.*, 2010). In Uganda, indigenous chickens (*Gallus domesticus* L.) are found in almost all rural homes. According to UBOS (2014), the poultry industry in Uganda consists of over 45 million birds with indigenous chickens dominating the industry at over 80%. Due to this dominance, it is evident that the indigenous chickens have the capacity to form the basis for improved rural poultry production and attain a commercial status; thus increasing food security and incomes (Kyarisiima *et al.*, 2004). So far, indigenous chicken contribute significantly to household nutrition and welfare through provision of high quality protein and additional income to poor farmers especially women through sale of chickens (Guèye, 2009). In terms of market, indigenous chickens are preferred to exotic breeds by rural, urban and peri-urban consumers due to their taste, leanness, pigmentation, freedom from antibiotics and hormones (Ssewanyana *et al.*, 2001; Mlozi *et al.*, 2003; FAO, 2010). Traditionally, indigenous chickens were only sold when there was need for money by farmers. However, currently they have gained commercial status with a significant number of farmers having

attained subsistence surpluses. The economic strength of the indigenous chickens lies in the low cost of production in comparison to the value of the outputs. The low cost is due to use of family labour and free-range management system where chicken scavenge for their food. Accordingly, almost all revenue obtained from local chicken sales is profits (Mlozi *et al.*, 2003). Additionally, Natukunda *et al.* (2011) reported that indigenous chicken farming was profitable in Uganda. Therefore, there is a possibility that commercial indigenous chicken production could be a viable and profitable agri-enterprise for smallholder farmers in Northern Uganda.

Commercialization of indigenous poultry production could meet the unmet market demand (Ondwasy *et al.*, 2006). Small scale indigenous chicken rearing exhibits low production cost per bird and supports the landless due to low costs and minimal skills required (Okeno *et al.*, 2011). Higher production potentialities could be realized under a commercial status (Natukunda *et al.*, 2011). However, insufficient information is available on the extent to which indigenous chicken farmers have commercialized their production in Northern Uganda. Thus, it is imperative that evidence regarding level of indigenous chicken commercialization be provided.

## Materials and methods

This study was conducted in Omoro and Oyam districts of Northern Uganda. The region was selected for the study due to the high poverty and malnutrition levels therein as a result of the two decades of war; and the potentially huge market of food products in Southern Sudan that has recently opened up. A cross-sectional household survey and focus group discussions of selected chicken farmers were carried out to collect both qualitative and quantitative data. Farmers were randomly selected at village level. Researcher administered pre-tested questionnaires were used to collect primary data from farmers. Data were collected on the respondent's background, local poultry enterprise, indigenous chickens, and level of commercialization of indigenous chicken production. Data analysis was done using the Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics was used to characterize farmers while market participation index was used to measure the level of commercialization.

## Results and discussion

**Socio-economic characteristics.** Majority of the respondents (72.2%) were males. A high percent (90.6%) of the households visited were headed by males with only 9.4% being female headed. Average age of the respondents was 41 years, with Oyam (38 years) having significantly ( $P<0.05$ ) younger respondents compared to Omoro (44 years). The mean household size in the study areas was 7, although the district effect was significant ( $P<0.1$ ). This mean is higher than the Ugandan average (4.7) and the district averages for Oyam (5.0) and Omoro (5.0) (UBOS, 2014). This is attributed to the fact that the study concentrated in the rural areas of the two districts where household sizes are usually high. Average education level in the two districts was 8 years and was significant ( $P<0.1$ )

between the study districts. Most of the farmers that participated in the study were married (86.1%). Mean experience in local chicken production was 17 years and significantly different between the two districts ( $P<0.1$ ). Farmers in Omoro were more experienced in rearing chicken than their Oyam counterparts. This was likely to be an effect of age since farmers in Omoro were much older than their counterparts in Oyam (Table 1).

**Flock size.** Average household flock size was 31 chickens consisting of 14 chicks, 5 cockerels, 6 pullets, 4 hens and 2 cocks. This is similar to flock size of  $32\pm 2$  birds per household reported previously (Nakazzi *et al.*, 2014). In Oyam, the average flock size was 29 chickens consisting of 13 chicks, 5 cockerels, 5 pullets, 4 hens and 2 cocks while in Omoro, average flock size was 31 chickens consisting of 14 chicks, 5 cockerels, 6 pullets, 4 hens and 2 cocks (Table 1). These flock sizes are within the Ugandan flock size range of 5–40 (Kyarisiima, 2004). However, it is much lower than the flock size range of 3–113 from another contemporary study done in Kumi and Apac districts (Ssewanyana *et al.*, 2006).

**Table 1:** T-tests of socio-economic characteristics and flock size by districts

Variable	Mean		Mean Diff	Pooled[N=180]
	Oyam	Omoro		
<b>Socioeconomic characteristics</b>				
Age (years)	38.0	43.9	-5.85(1.93)**	41
Education level (years)	7.7	8.4	1.42(0.49)*	8
Household size	6.0	7.0	-0.67(0.39)*	7
Experience in local chicken (years)	15.0	18.0	-3.25(1.90)*	17
<b>Flock structure per household</b>				
Chicks	13.0	14.0	-0.98(1.76)	14
Cockerels	5.0	5.0	0	5
Pullets	5.0	6.0	-0.63(0.86)	6
Hens	4.0	4.0	0	4
Cocks	2.0	2.0	0	2

\* shows level of significance

**Level of commercialization.** There was no household trading in chicks (0–3 months old). The overall proportion of chicken sales per household was 42%. In Oyam, the total chicken sales was 47% and this was significantly ( $P<0.01$ ) different from the total chicken sales in Omoro district (37%). Average sale of pullets per household was 33% of the monthly production. However, farmers in Oyam were selling significantly ( $P<0.01$ ) higher numbers of pullets than their counterparts in Omoro. Forty seven percent of the monthly household cockerel production was sold. However, farmers in Oyam were selling significantly ( $P<0.05$ ) higher numbers of cockerels than their counterparts in Omoro. The number of hens sold per household was the least at 29% of the total monthly production. The level of sale of hens between the two districts was significantly ( $P<0.05$ ) different with households in Oyam selling more hens than those in Omoro. The average number of cocks sold per household was the highest at 56% of the total monthly production. Households in Oyam were selling more cocks than households in Omoro, although this was not significant.

(Table 2).

Table 2: T-test on level of commercialization by districts

Flock Type	Average sales			Mean difference	p-value
	Overall	Oyam	Omoro		
Total flock	0.418 (0.213)	0.475 (0.196)	0.365 (0.216)	0.109 (0.032)	0.001
Pullets	0.327 (0.340)	0.413 (0.354)	0.247 (0.308)	0.170 (0.050)	0.001
Cockerels	0.478 (0.322)	0.540 (0.312)	0.421 (0.322)	0.119 (0.048)	0.015
Hens	0.294 (0.295)	0.354 (0.291)	0.241 (0.291)	0.113 (0.043)	0.01
Cocks	0.559 (0.325)	0.579 (0.314)	0.541(0.314)	0.038 (0.049)	0.430

() shows standard deviation

The trend of chicken sales signifies the importance of cocks and cockerels in generating income. Most farmers prefer selling cocks and cockerels that fetch higher prices as compared to hens and pullets that are preferred for reproduction and household consumption. The level of commercialization (42%) reported in this study shows that farmers in Northern Uganda are yet to become fully commercialized. This is because this level is below 50% which is the threshold for fully commercialized farmers (World Bank, 2007).

### Conclusion and recommendations

All households visited were involved in farming and all those households rear and sell indigenous chickens. However, no business association or group exists specifically for indigenous chicken production and sale. Although the farmers have potential to commercialize as observed for indigenous chicken production and sale, few have taken it up as a commercial enterprise. Thus, efforts should be directed towards increasing commercialization of indigenous chickens. Additionally, there is need to train farmers on proper management and record keeping, encourage group formation for indigenous chicken farmers, and advise farmers to take up collective marketing for higher bargaining power.

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