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Constraints to Smallholder Turkey Production in Zuru Emirate, Kebbi State, Nigeria

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ARTICLE INFO	ABSTRACT
Corresponding Author: Musa D. Baba musababs1970@yahoo.com 	The study examined the constraints to smallholder turkey production in Zuru Emirate of Kebbi State, Nigeria. Multi stage sampling technique was used to select one hundred and eighty seven (187) turkey producers from four Local Government Areas of the Emirate. Primary data were collected using interview schedule. Data analysis was carried out using descriptive statistics. Result revealed that an average turkey farmer is male, aged between 31 and 40 years, attended up to tertiary institution. Majority are civil servants, married, with a household size of about 1-5 persons, with average monthly income of ₦31, 728.34 and has about 1-5 years' experience in turkey production. The result also identified seven constraints associated smallholder with turkey production in the study area, they include high cost of feeds, low demand for turkeys, inadequate capital, high cost of poults, disease incidence, mortality rate and theft and predators. Result further indicated that high cost of feeds (78%), low demand for turkeys (37.9%) and inadequate capital (29.9%) were the major constraints facing smallholder turkey production in the study area as it is ranked first. As a way of minimizing cost, it is recommended that smallholder turkey farmers in the study area should learn how to formulate their feeds and utilize local feed stuffs. Low demand for turkeys and the seasonality of the sales of turkeys discourage many potential farmers. Awareness on the importance of turkey meat for household consumption should be stressed through various extension channels to stimulate demand for turkey products this will in turn stimulate production. Turkey farmers in the study area should form cooperative society to enable them have easy access to credit facilities from financial institutions, acquisition of inputs at a subsidized rate and other forms of assistance from the government. **Keywords:** Constraint, Smallholder, Turkey production, Zuru Emirate, Kebbi State.

INTRODUCTION

Turkey production which is an integral part of poultry production forms an important component of Nigeria's livestock sub-sector. Turkey industry in Nigeria has risen from 1.5 to 2 million tons of meat per annum. This fast growth in the industry was possible by intensification of production and development of large breeds with standard weights ranging from 15-17kg for male and 8-10kg for female; some of which come from homestead (Ajala and Adesehinwa, 2006). Turkey is one of the largest of the poultry species, reaching 10-15kg live-weight. In Nigeria however, large strains or hybrids of 8-12kg live-weight and of white plumage are reared. The potential of local turkeys cannot be overlooked considering the huge foreign exchange implication of the importation of improved exotic stock and genotype – environment interaction which leads to considerable loss of fitness of the exotic stock (Nwagu, 2002). Local turkeys are natural foragers and can be kept as scavengers. Turkeys can be reared intensively, semi-intensively or extensively.

Ironkweand A|kinola (2010) advocates that turkeys are easier to manage, have relatively high turnover and quick returns to capital invested. Turkey production is a means of livelihood and a way of achieving certain level of economic independence in Nigeria. Its production is carried out in all parts of the country with no known religious, social or cultural inhibitions associated with its consumption. Specifically, investment in turkey enterprise is attractive because the production cost per unit is low compared to other type of livestock. Owing to these obvious advantages of turkey production, large number of farmers both men and women venture into turkey production mostly for income generation purpose, besides meeting the protein needs of the households. Turkey production for meat and eggs is practiced by urban and peri-urban dwellers. The turkey population in Nigeria is estimated at 0.2 million turkeys (Eduvie, 2002). This is said to constitute a major animal protein source in the country. In Nigeria, the supply of meat falls short of demand, most Nigerians are poorly fed and suffer from malnutrition due to lack of adequate protein of animal source (Ajala and Adesehinwa, 2006). In a nutritional profile of Nigeria, Okoruwa *et al.*, (2006) reported that the protein supply per capita was 44g, out of which animal products constituted less than 2%. With the continued rise in the cost of production of cattle, sheep and goat, which are the primary sources of animal protein in Nigeria, it has become very necessary to explore efficient and less common but potential sources of animal protein for economic viability (Okoruwa *et al.*, 2006).

Turkey production in Zuru Emirate is relatively low compared to other poultry species (Broilers, Layers, Duck, Guinea fowl and Pigeon). While the sales and marketing of turkeys in the study area is carried out by residents with the highest sales recorded during festive periods such as Sallah, Christmas and New Year, the potentials of turkey production in the study area if properly harnessed, will increase farmer's income, improve household food security and nutrition thereby improving their livelihood. It is in view of the importance of turkey production in the study area that this study intends to examine the constraints of smallholder turkey production.

MATERIALS AND MRTHODS

Zuru Emirate is one of the four Emirates in Kebbi state. The Emirate comprise of four Local Government Areas (LGAs) namely; Danko-Wasagu, Fakai, Sakaba and Zuru. The Emirate is located within latitudes 11° and 12° N and longitudes 4° and 5° E of the equator (KSG., 2003). The state was carved out of the former Sokoto State in 1991; the Emirate is located in the extreme South-eastern part of the state and covers an area of approximately 9,000 square kilometers. It is located on a hilly terrain and is bounded to the north by Gummi Local Government Area of Zamfara State, North-west by Koko Local Government Area, South-west by Yauri Local Government Area, North-east by Bukuyum Local Government

Area of Zamfara State and south by Rijau Local Government Area of Niger state (Girma, 2008).

The estimated population of the Emirate is 582, 106 people (NPC, 2006). The various indigenous cultural and ethnic groups of the Emirate are the Dakkarkari, Fakkawa, Dukkawa, Kelawa, Kambarawa, Katsinawan laka and Achifawa. Other non-indigenous ethnic groups in the area are the Hausa, Fulani, Yoruba, Igbo and other tribes found in Nigeria. The different religions found in the area are Islam, Christianity and traditionalist, like any other African society, these came as a result of the interaction with the outside world (KBSG., 2003). However, the traditional worship of different deities is still upheld in the area with many festivals celebrated at various times of the year. The weather is marked by a single rainy season and long dry season, the average rainfall of the area is between 1025mm and 1050mm/annum. Mean temperature range between 31^0C and 38^0C,the rainy season is between April to October. The climatic condition of the area is characterized by hot and wet seasons as in the tropics; the months of November to February are the hamattan period. The soil type is sandy loam and rich, which makes it suitable for agriculture (KSG, 2003).

Zuru Emirate comprises of four Local Government Areas (LGAs) namely; Danko-Wsasgu, Fakai, Sakaba and Zuru, with eight, four, two and six administrative districts, respectively. Multi-stage sampling technique was used for the study. The first stage involved selecting proportionately four, two, one and three districts from Danko-Wasagu, Fakai, Sakaba and Zuru local government areas, respectively; this is because the number of districts in each of the LGAs is not the same. The second stage involved selecting purposively two villages from each of the districts selected; this is because of the concentration of turkey farmers in the villages selected. The third stage involved selecting turkey producers proportionately (70%) through a sampling frame obtained from Kebbi Agricultural and Rural Development Authority (KARDA) Zone III Zuru. This is because the population of turkey farmers in the selected villages varies. One Hundred and eighty seven (187) turkey farmers constitute the sample size for the study.The instrument for data collection was interview schedule, which was used as a source of primary data.Secondary information was collected from materials such as textbooks, journals, conference proceedings and other related literatures. The data for the study was collected with the help of trained enumerators. Descriptive statistics was used to analyse the data.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Turkey Farmers

Socio-economic characteristics of smallholder turkey farmers in the study area were examined with respect to age, gender, level of education, occupation, marital status; household size, income level and turkey farming experience are presented in Table 1.The Table revealed that an average turkey farmer is male, aged between 31 and 40 years, attended up to tertiary institution. Majority are civil servants, married, with a household size of about 1-5 persons, with average monthly income of ₦31, 728.34 and has about 1-5 years' experience in turkey production. This showed that turkey production was dominated by youths in the study area. This implied that people within this age bracket are able-bodied that are likely to produce more, which means more profit and more protein intake. Another reason could be that young farmers are likely to adopt new innovations than the older ones. Onwumere and Obasi (2010) in their study of the Analysis of small-scale turkey production in Owerri reported that turkey production in the area was dominated by people within the age bracket of 31-50 years (56%). Result also indicated that participation by females is very low compared to their male counterparts. This is probably because men are the bread winners of most families. They therefore, have to engage in income generating activities to raise money in order to provide for their families. Conversely, the high level of men involvement may also be due to high demand for labour in terms of feeding and medication which women may not

be able to combine with household activities. Another reason might be that women might not be in a financial position to purchase turkey poults or growers for rearing because they are more costly compared to chickens. This coincided with the findings of Ajala and Adesehinwa (2006) that there were more males in turkey production business in Zaria than females (66% to 34%). This finding however, contradicts the findings of Brorholt and Odgaard (2009) that poultry keeping is the skill of housewives in Nicaragua. This may be as a result of different environment or culture of the people of Nigeria and Nicaragua.

The level of education enable turkey farmers to accept innovations easily; perform effectively in their management practices such as administration of drugs, vaccines, feeds as well as effective marketing of turkeys. Level of education of turkey farmers could auger well for extension services in transferring research results for sustainable food production. This finding has therefore, reflected the importance of education in agricultural production activities. The more an individual is exposed to any form of education, the more he will have a better understanding of his environment. This is in line with the findings of Onwumere and Obasi (2010) that majority (83%) of turkey farmers in Owerri had formal education. Further revealed from the Table is the fact that greater proportions of turkey farmers have other jobs. The implication is that, turkey production in the study area is a part time job and that most farmers do not depend on it as a sole means of livelihood. The reason could be that civil servants in the study area are becoming more enterprising in turkey production as a source income other than their main occupation. This tallied with the findings of Ajala *et al.*, (2007) that majority (62%) of turkey farmers in Zaria were civil servants. The result also agreed with the findings of Amaza (2000) that it is common for some farm households to engage in other non-farming activities to complement their farming occupation for their livelihood.

Results revealed that majority of turkey farmers were married; indicating that turkey production in the study area is most common among couples. This may be for income generation and food. This was an indication of their chances of getting family labour in abundance for use on their farms than hired labour. The study also revealed that majority of turkey farmers had household size of 1 – 5 persons. This indicated that most of turkey farmers in the study area have responsibilities of family on them. This implied that those with small household size have limited supply of family labour compared to those with large household size. This is in line with the findings of Ajala and Adesehinwa (2006) that 50% of turkey farmers in Zaria had a family size of 1–5 persons.

Results further revealed that significant proportion of turkey farmers had their monthly income between ₦10, 000.00 to ₦20, 000.00. Ironkwe and Akinola (2010) reported that income level of turkey farmers was generally found to be synonymous with their level of investment, the higher the income the higher the investment and vice versa. This could be the reason why turkey production in the study area has largely remained at smallholder level. The study also revealed that majority of turkey farmers had between 1 – 5 years' of experience in turkey production. The average years of turkey keeping experience in the study area was 4 years. This implied that turkey production in the study area is relatively new. Years of experience in agricultural production and especially in turkey production helps in determining the accuracy in decision making and in allocation of scarce resources wisely. Oluwatayo *et al.*, (2008) reported that farmers with more experience would be more efficient, have better understanding of the environment and market situations. Mbanasor and Saampson (2004) also reported that there was obvious lack of information on specific requirements for turkey production which may be attributed to low level of research on it in Nigeria.

Constraints to Smallholder Turkey Production

The study identified seven (7) constraints associated smallholder with turkey production in the study area, they include high cost of feeds, low demand for turkeys, inadequate capital, high cost of poults, disease incidence, mortality rate and theft and predators. Result further indicated that high cost of feeds, low demand for turkeys and inadequate capital were the

major constraints facing smallholder turkey production in the study area as it is ranked first. This can be attributed to the fact that most turkey farmers in the study area depend largely on commercial feeds rather than formulating feeds for their turkeys. Another reason could be that broiler and layer feeds were mostly fed to the turkeys since specific turkey feeds were seldom seen and were costly.

Table 1: Socioeconomic Characteristics of Turkey Farmers

Variables	Frequency	Percentage	Mean	Min.	Max.	SD
Age						
20 - 30	42	22.5	3561	20	55	6.448
31 - 40	108	57.8				
41 – 50	32	17.0				
51 and above	5	27				
Total	**187**	**100**				
Gender						
Male	146	78.1				
Female	41	21.9				
Total	**187**	**100**				
Educational Level						
No Education	6	3.2				
Primary	16	8.6				
Secondary	56	29.9				
Tertiary	109	58.3				
Total	**187**	**100**				
Major Occupation						
Civil Servants	129*	68.9				
Farming	82*	43.9				
Trading	49*	26.2				
Students	27*	14.4				
Marital Status						
Married	132	70.6				
Single	55	29.4				
Total	**187**	**100**				
Household Size						
1 – 5	127	67.9	4.027	1	17	2.959
6 -10	55	29.4				
11 – 15	3	1.6				
16 and above	2	1.1				
Total	**187**	**100**				
Income/Month (₦)						
10,000 – 20,000	82	43.9	31,728.34	10,000	150,000	22,590.4
21,000 – 30,000	33	17.6				
31,000 – 40,000	21	11.2				
41,000 and above	51	27.3				
Total	**187**	**100**				
Years of Experience						
1 – 5	130	69.5	4.861	1	16	3.310
6 – 10	45	24.1				
11 – 15	10	5.3				
16 and above	2	1.1				
Total	**187**	**100**				

Source: Field Survey Data and Computation by the Researcher, (2013). *Multiple Responses are allowed.

Many of the farmers resorted to supplemental feeding of the turkeys on a daily basis to reduce cost and minimize adulteration of commercial feeds. The few farmers who formulated feeds for their turkeys, complained of scarcity of ingredients like maize, groundnut cake, soya bean, rice bran and other premix especially at the peak period of the year since the ingredients

were mostly consumed by humans. The high cost of feed also could be due to competition between man and livestock for grains and conventional sources of plant proteins. This tallied with the findings of Ironkwe and Akinola (2010) and Mbanasor and Sampson (2004) that high cost of feeds is the major constraint faced by turkey farmers in Ahoada, Zaria and 82 Division Enugu, respectively. Ajala and Adesehinwa (2006) stated that high and persistent increases in the prices of poultry feeds have constituted a big hindrance to expansion in the Nigerian poultry since the early 1980 and consequent upon the high cost of feeds, the prices of poultry products have continued to rise.

Table 2: Problems of Turkey Production Enterprise

Problems	Frequency*	percentage	Ranking
High cost of feeds	146	78.01	1st
Low demand for turkeys	71	37.96	2nd
Inadequate capital	56	29.94	3rd
High cost of poults	48	25.66	4th
Disease incidence	34	18.18	5th
Mortality rate	23	12.29	6th
Theft and predators	18	9.62	7th

Source: Field survey and Computation by the Researcher, (2013). *Multiple Responses was allowed.

However, theft and predators is the 7th in the ranking of constraints associated with smallholder turkey production in the study area. This could be as a result of the management practice adopted by some farmers, where birds are managed on free range (extensive system) or are confined during the night and are allowed to scavenge for food during the day time; this predisposed the birds to theft, predators and in some cases accident. Ajala and Adesehinwa (2006) reported that extensive system and to some extent semi-intensive system of management expose turkeys to a lot of danger (theft, predators, accidents etc.).

CONCLUSION AND RECOMMENDATIONS

From the findings, it could be concluded that the major constraints faced by smallholder turkey production in the study area was high cost of feeds, low demand for turkeys and inadequate capital as they were ranked first, second and third among all the constraints. As a way of minimizing cost, it is recommended that smallholder turkey farmers in the study area should learn how to formulate their feeds and utilize local feed stuffs. Low demand for turkeys and the seasonality of the sales of turkeys discourage many potential farmers. Awareness on the importance of turkey meat for household consumption should be stressed through various extension channels to stimulate demand for turkey products this will in turn stimulate production. Individuals, private and government organizations should ensure the supply of poults through establishment of hatcheries to minimize high cost of poults in the study area. Turkey farmers in the study area should form cooperative society to enable them have easy access to credit facilities from financial institutions, acquisition of inputs at a subsidized rate and other forms of assistance from the government.

REFERENCE

Ajala, M.K., and A.O.K. Adesehinwa. 2006. Constraints of Turkey Production in Zaria, Kaduna State, Nigeria. *Tropical Journal of Animal Science*. 9(2): 101-106.

Ajala, M.K., B.I. Nwagu, A.A. Sekoni and A.O.K. Adeshinwa. 2007. The Profitability of Turkey Production in Zaria, Kaduna state, Nigeria.

Asian Journal of Information Technology. 6(1): 27-33.

Amaza, P.S. 2000. Resource Use Efficiency in Food Crop Production in Gombe State: Unpublished Ph.D. Thesis. Department of agricultural Economics and Extension, Faculty of Agriculture, Usmanu Danfodiyo University Sokoto, Nigeria.

Bashar, Y.A., A. Abubakar and M. Bouobakar. 2011. Constraints to Commercial Turkey Production in Sokoto and its Environs. (Eds): W.A. Hassan, U.B. Kyiogwom, H.M. Tukur, J.K. Ipinjolu, S.A. Maigadi, A. Singh, N.D. Ibrahim, A.U. Dikko, Y.A. Bashar and N. Muhammad. *Proceedings of the 45th Annual Conference of Agricultural Society of Nigeria (ASN),* Usmanu Danfodiyo University Sokoto between 24th – 28th October 2011, pp: 381-384.

Brocholt, G., and P. Odgaard. 2009. Women and Chicken: Traditional Poultry Management in Nicaragua and Tanzania. (Eds): Y. Peters, K. Johnson, V. Lucas and C. Oscar. *Proceedings of Development Workers Course on Poultry as a Tool in Poverty Eradication and Promotion of Gender Equality.* Time Landboskole, Denmark. 22-26 May, 2009.

Eduvie, I.O. 2002. Poultry Production as an Important Component of Nigeria's Livestock Subsector. A Training Manual on National Training Workshop on Poultry Production in Nigeria in NAPRI, Amadu Bello University, Shika Zaria, Nigeria. 12 p.

Girma, S.A. 2008. Agro-climatology of Millet Production in Desert Fringe Zone of Nigeria, A Case Study of Kebbi State. Unpublished M.Sc dessertation. Federal University of Technology Minna, Niger state. 97p.

Ironkwe, M.O. and L.F. Akinola 2010. Profitability of Turkey Production in Ahoada East Local Government Area of Rivers State, Nigeria. *Continental Journal of Agricultural Science.* 4: 38-41.

Kebbi State Government (KSG). 2003. Kebbi State Government Official Diary. Directorate of Information, Kebbi. 10p.

Mbanasor, J.A., and A.Sampson. 2004. Soioeconomic Determinants of Turkey Production among Nigerian soldiers. *International Journal of Poultry Science*. 3(8): 497-502.

National Population Commission (NPC). 2006. National Population Census Figures, Abuja, Nigeria.

Nwagu, B.I. 2002. Production and Management of Indigenous Poultry Species. Training Manual, National Animal Production Research Institute (NAPRI), Federal Ministry of Agriculture and Rural Development, Ahmadu Bello University (ABU) Zaria.

Okoruwa, V.O., A.E. Obayelu and O. Ikoyo-Eweto 2006. Profitability of Semi-intensive Egg Production in South-West and South-South Zones of Nigeria. *Nigerian Journal of Animal Production.* 33: 118 -125.

Oluwatayo, I.B., A.B. Sekumade and S.A. Adesoji. 2008. Resource Use Efficiency of Maize Farmers in Rural Nigeria, Evidence From Ekiti State. *World Journal of Agricultural Science.* 4(1): 91–99.

Onwumere, J., and R.O. Obasi. 2010. Analysis of Small-Scale Turkey Production in Owerri Agricultural Zone of Imo State, Nigeria. *International Journal of Agriculture and Rural Development.* 13(2): 36-39.