

Survey on Chicken Production Performance and Marketing Systems in Kaffa and Benchmaji Zone, Southwest Ethiopia

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Abstract: This study was conducted to identify village chicken production performance and marketing systems in Adeyo, Chena, Gimbo and Guraferda districts of Kaffa and Benchmaji zone by using semi structured questionnaire, field visit and interview from 150 randomly selected chicken owner respondents. From the total of interviewed village chicken owners, (79%) were males and (21%) were females. From this study 87% of the households kept local chicken followed by 8% kept cross and local together and 5% of the households kept exotic and local under the same management, which shows indigenous chicken predominate the other poultry species in the study villages. Average age of first egg lying of chicken was 6 months, average number of eggs per clutch was 14, average clutch size per chicken per year was 3 and average hatchability percentage was 72%. The average price of adult cock, hen and young chicken were reached 75birr, 54birr and 38birr respectively and the price of egg was reached 2 birr during non-fasting period and 2.25 birr at festival time. From this study village chicken production performance and marketing merely identified, based on this result by improving the management practice, poultry breeds and educating the framers are viable options to improve the livelihood of the households.

Key words: Village Chicken • Production Performance • Marketing Systems • Respondents • Kafa and Benchmaji Zone

INTRODUCTION

Ethiopia has large population of chickens estimated about to be 51 Million [1] with native chickens of non-descriptive breed representing 96.6% hybrid of chickens 0.55% and exotic breed of chickens mainly kept in urban and peri-urban areas 2.8% [2]. South nation nationalities and peoples region contributes 10 Million, from which 14% is from kaffa and benchmaji zone [3]. Agricultural sector is the corner stone of the economic and social life of the people. The sector employs 80-85% of the population and contributes 40% of the total growth domestic product. According to Halima *et al.* [4] Animal production in general and chicken production as the one component of agriculture covers 40% of the agricultural output playing an important role in the national economy as it contributes 13-16% of the total GDP. Rural poultry in Ethiopia represents a significant part of the national economy in general and the rural economy in particular and contributes 98.5% and 99.2% of the national egg and chicken meat production, respectively [3, 5].

House hold simple rearing in backyard is with inadequate feeding and health care. However; the population number of chicken flock is small [6, 7]. Such production system may result in slow growing and poor layer of egg. The indigenous chickens are good scavengers and foragers well adapted to harsh environmental conditions and their minimal space requirements make chicken rearing a suitable activity [8]. Modern poultry production started in Ethiopia some year ago mainly in research stations and colleges. The activities of these institutions mainly produced on the introduction of exotic breeds to the country and distribution of these breeds to the farmers including management, feeding housing and health care practices [7].

Poultry production, management and marketing practice in kaffa and benchmaji zone, can be characterized by extensive poultry production system (Under smallholder) which provide people benefits in food security (Meat and egg) and for source of income for poor households. The poultry population is 1,486,175

from which 942,291 and 543,884 are found in kaffa and benchmaji zone respectively [9]. Even if the population is high, the farmers do not benefited the sector, because of traditional production system, predator challenge, disease prevalence; quality feed shortage and poor management practices. However, there is no enough information regarding with production and marketing of poultry production. Therefore this study was design to assess production, management and marketing of poultry production in the study area.

MATERIALS AND METHODS

Description of Study Areas: The study areas will be selected considering agro-ecology, socio economic significance of chicken production and population of indigenous chickens.

Sampling Techniques, Data Collection and Statistical Analysis: A Multi-stage sampling procedure (Purposive & random) was applied for the study, hence the study area was divided in to three agro-ecologies based on altitude as; highland (>2500masl), mid-altitude (1500-2500masl) and low-land (<1500masl). Then two farmer kebeles (The lowest administrative structure in the country) (Boka and butta of adiyoo district at kaffa zone) from the highland, two farmer kebels from low-land (Bifitu03 and kujja of guraferda district at benchmaji zone) and two farmer kebeles from mid-altitude (Beyamo of gimbo district, wareta of chena district at Kaffa zone) were selected purposively. Therefore a total of six representative kebeles were selected. Agro ecology representation and chicken production potential were the main criterion considered in the selection of study sites.

A simple random sampling technique was applied to choose 25 village chicken owner respondents in each of the selected kebeles of highland, mid-land and low-land which is 50 respondents from each agro ecology which is a total of 150 respondents (Chicken owner households) were interviewed using a pre-tested structured questionnaire for this study.

The qualitative and quantitative data sets were analyzed using appropriate statistical analysis software [10]. More specifically descriptive statistics and General Linear Model (GLM) were used for this study. Tables and figures were used to present summary statistics such as percentages.

RESULT AND DISCUSSION

Socio-Economic Characteristics of the Study Area: The household characteristics of interviewed village chicken owner households were presented in Table 1. Accordingly; from the total of 150 interviewed village chicken owners, (79%) were males and (21%) were females. The average age of respondents was 38 years (Ranged 15-61). Regarding education level of respondents; 39% were illiterate, 21% had basic education (Reading & writing), 12% had primary education and 9% had secondary education & above. The number of illiterates observed in this study was lower than the reported 82.1% for North-West Ethiopia [11]. The result of the study indicated that 79 % of interviewed households were male headed and 11% female headed. Regarding marital status; 89% of interviewed households were married. However, 24.3 % of chicken owners having watering trough responded that they never cleaned watering trough.

Type of Breed in the Study Area: From this study 87% of the households kept local chicken followed by 8% kept cross and local together and 5% of the households kept exotic and local under the same management, which shows Indigenous chicken predominate the other poultry species in the study villages. The result agrees with Tadelle [12]. The majority of this chicken were managed under traditional (Extensive) system due to lack of availability of feed labor and time shortage to manage them the respondents choose free scavenging system. Form group discussion held with farmers, woman and children are the members of households take responsibility in chicken production in the study area.

Production and Reproduction Performance of Village Chicken: The average production and reproduction performance of village chicken in the study area where illustrated in Table 3.

The above table indicates that village chicken in the study area become sexual maturity and laying first egg at an average 6.5 months. The average number of eggs laid per clutch was 14, average number of clutch /hen/ year was 3 times with 77% of hatchability. The average number of chick hatched was 9 and the average number of egg incubated was 11. Farmers in the study area used local chicken for egg incubation. This study is nearly similar with the report of Tadelle and Ogle [5] a breeding female

Table 1: Socio-economic status of respondent chicken owners of the study area (N=150)

Variable	N	Category	Proportion (%)
Sex	150	Male	79
		Female	21
Educational status	150	Illiterate	39
		Religious	11
		Primary education	12
		secondary education & above	9
		Reading and writing	29
Family size	150	<15 years	35.7
		>15 years	64.3
Marital status of house holds	150	Married	89
		Single	9
		Divorced	0.5
		Widowed	1.5

Table 2: Type of breed in the study area

Breed type	Respondent (No.HHs)				Total	Mean	SD	%
	Kaffa zone		Bench maji zone					
	Highland (N=50), (>2500 masl)	Midland (N=50), (1500- 2500 masl)	Lowland (N=50), (<1500 masl)					
	Districts							
	Adeyo	Chena	Gimbo	Guraferda				
Local	45	24	26	35	130	43	5	87
Cross and local	3	4	3	2	12	4	1	8
Exotic and local	2	3	3	-	8	3	1	5
Total	50	50		50	150	50		100%

Table 3: Production and reproduction of chicken in the study area

Characteristics	Kaffa zone		Bench maji zone		Mean	SD
	Highland (N=50), (>2500 masl)	Midland (N=50), (1500-2500 masl)	Lowland (N=50), (<1500 masl)			
	Districts					
	Adeyo	Chena	Gimbo	Guraferda		
Average age at 1 st egg laying (Month)	6	7	7	6	6.5	1
Number of egg per clutch per hen	16	13	12	15	14	1
Number of clutch per hen per year	3	3	3	3	3	0
Hatchability	70%	82%	80%	77%	77%	2

Table 4: Chickens and egg price in the study area

Sold variables	Kaffa zone		Bench maji zone		Mean	SD
	Highland (N=50), (>2500 masl)	Midland (N=50), (1500- 2500 masl)	Lowland (N=50), (<1500 masl)			
	Districts					
	Adeyo	Chena	Gimbo	Guraferda		
Adult Cock (>20wks)	80	72	74	70	75	2
Adult Hen, layer (>20wks)	60	52	54	50	54	0
Pullet, Cockerel (8-20wks)	40	40	40	35	38	0
Egg	2	2.25	2.25	1.75	2	0.25

chicken attain sexual maturity at the age of 6.8 months and greater from the report of Halima *et al.* [4] that a breeding female chicken attain sexual maturity at the age of 6 and the overall mean egg laying performance of hens for the first, second and third higher clutch were 18.0, 21.8 and 25.3 egg respectively. In this study result all mean of egg laying performance of hen is greater than that of Melkamu and Wube [6] report that the overall mean egg laying performance of hens for the first, second and third higher clutch were 17.0, 20.9 and 24.8 eggs respectively at Kimbibi Woreda In North Shoa Zone, Oromia Region. Because farmers provide supplementation feed during rainy season which is available up to nine month. The above table indicates that village chicken in the study area lays about 14 eggs /hen/ clutch and number of clutch per hen per year is three. The result disagree with the report of Melkamu and Wube [6] that 13 eggs /hen/ clutch, this variation is may due to free water availability and feed supplementation of village chicken in the study area.

Chickens and Egg Price in the Study Area: There was high chicken and egg price variation due to festivals based on their coat cover of the bird. The average price of adult cock, hen and young chicken were reached 75, 54 and 38 respectively; and the price of egg was reached 2 birr during non-fasting period and 2.25 birr at festival time, so the producers were fetched good price during festival time. There is market problem in the study area because of absence of good infrastructures like transportation facilities and the proximity to Boka, Ginbo, Chena and Biftu towns; moreover, different traders were came from Jimma, Bonga, Mizan-aman and Tepi to bought chickens and their products. Keeping village chicken by small holder for cash income to purchase food items and to cover other family expenses as the report of Halima *et al.* [11] small holder village chicken owners found in different part of the country sale chickens and eggs to cover school fee, to purchase improved seed and to get cash for grain milling services.

CONCLUSION

The result of the current study showed that majority of chicken at the study area are local breed and their productivity performance can be enhanced by relatively simple changes in improve breeds. However, for the long-term change in productivity and profitability of chicken in the study area, design and implement more

research, educating farmers and all management aspects to solve the existing village chicken production are viable options. Ultimately, attempt should made to shift the production paradigm to improved backyard production along with a holistic supports of services such as credit and marketing to make it productive and profitable. It is suggested that chicken and egg marketing of village chicken producers can be improved through development of market information system at farmer's level and strengthening of agricultural extension services, through trainings and advisory services.

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