
SKILLS NEEDED FOR PRODUCTIVE GRASSCUTTER REARING AT THE RURAL LEVEL: THE CURRENT APPLICATION LEVEL AND IMPROVEMENT NEEDS OF THE FARMERS

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ABSTRACT

The study was carried out to determine the grasscutter rearing skill improvement needs of farmers for income enhancement and sustainable livelihood. Three research questions and three null hypotheses guided the study. The study adopted Borich need assessment model. The population for the study was 126 comprised of 83 registered grasscutter farmers and 43 extension Agents. Structured questionnaire was used to collect data from the respondents. The data collected were analyzed using mean () and improvement need index (INI) to answer the research questions while t-test statistic was used to test the null hypotheses. The findings of the study revealed that 42 skill items were required while farmers needed improvement in 29 items for effective grasscutter rearing. The null hypotheses tested for the study at 0.05 level of significance showed that there were no significant differences between the mean responses of grasscutter farmers and agricultural extension agents on the skills required in entering into grasscutter rearing enterprise. Based on the findings, it was recommended that the identified skills be utilized in training target grasscutter farmers at the rural level where small scaled farming can be easily encouraged to thrive.

Key words: Skill, Grasscutter, Animal, Enterprise, Sustainable livelihood.

INTRODUCTION

Grasscutter (*Thryonomys swinderianus*) which belongs to the family of thryonomidae and genus, Thryonomys is one of the popular game species in Africa especially in Nigeria. It is a monogastric herbivour that is reared for meat and rearing it requires small input, little space and the feed sourced is usually within reach in the environment (Jori, Mensah & Adjanohoun, 1995). The animal has high fecundity and so matures within three months with high profit margin if properly reared considering all concerned economic factors (Yeboah & Simpson 2004; Adoo, 2002). The animal is also a good

converter of fibre to protein while the meat has excellent taste with good nutritional value and normalizing cholesterol level in the human body. Many restaurants and hotels in addition to individuals in Nigeria and generally in Africa prefer the meat to that of macro livestock due to the culinary properties with high protein, calcium, phosphorus and moisture content (Asibey & Eyeson, 2009) which makes the availability of the meat scarce, expensive and a good side enterprise for regular farmers. Rearing grasscutter like other animal farming requires that the owner treats the farm as a business and run the operations like a business

entrepreneur would do for profitability (Olaitan, Dumbiri & Uko, 2010; Olaitan, Ifeanyieze & Omeje, 2008). Most of the rural farmers depend on irregular sales of their inadequate harvest for sustaining their livelihood and meeting the needs of the family and community members (Akpe, 2002; Ikehi, Onu, Ifeanyieze & Paradang, 2014) thus diversifying into animal farming would help cope with the rate of economy failure sweeping most oil producing nations, like Nigeria. For the indigent farmers to be able to rear grasscutter successfully for commercial purposes, they require the relevant skills and improvement in practice for those who already poses the skills for efficient productivity. They need to be able to perceive the business opportunities, control and coordinate available resources for success in the grasscutter production enterprise (Dumbiri and Amusa, 2010; Onu, Ugwoke, Agboeze, & Ikehi, 2014). Therefore the purpose of this study was to determine the grasscutter rearing skills and those needing improvement for income enhancement among farmers who intend to rear the priced game. Specifically, the study identified skills required in and the improvement needs of grasscutter farmers in.

1. planning for grasscutter rearing enterprise
2. rearing (housing, feeding & health management) of grasscutter
3. marketing of mature grasscutter

METHODOLOGY

The study made use of Borich Need Assessment Model. The model determines training need of individuals by identifying the skills required and giving those concerned the opportunity to indicate the extent to which they could perform each of the skill items (Ifeanyieze, 2012). This model is appropriate for this study since the extension agents and farmers were requested to indicate the skills required in grasscutter rearing and the Pensioners to check the level to which

they could perform each of the items. The study was conducted in Enugu State which has six Agricultural Zones; the zones were Agbani, Awgu, Enugu, Enugu-Ezike, Nsukka, and Udi. The state is naturally endowed with good ecological and environmental condition favourable for grasscutter production. The population of the study was 342 made up of 43 Agricultural Extension Agents, 83 registered grasscutter farmers and 215 Pensioners all from Enugu state. The entire population was involved in the study because of the manageable size therefore there was no sampling.

An 89 skill item questionnaire developed from literature and oral interview by the researchers was used for data collection. Each item in the questionnaire had a column of either required or performance. The required column was assigned a four response options of Highly Required (HR)= 4, Averagely Required (AR)= 3, Slightly Required (SR)= 2 and Not Required (NR)= 1; while the performance column was also assigned a four response options of High Performance (HP)= 4, Average Performance (AP)=3, Low Performance (LP)= 2 and No Performance (NP)= 1.

The instrument was subjected to face validation by three university lecturers: one from Department of Agricultural Education and two from the Department of Crop Science all from the University of Nigeria, Nsukka. The corrections and suggestions of the experts were used to improve the initial edition of the questionnaire to produce the final copy. The reliability of the instrument was determined by administering the questionnaire to a sample of 20 respondents made up of 10 Agricultural Extension Agents and 10 Grasscutter farmers in Ebonyi State. The Cronbach Alpha method was adopted to determine the internal consistency of the instrument which gave a reliability coefficient of 0.89.

A total of 342 copies of the questionnaire were administered on the respondents by the researcher and three assistants. The assistants were selected based on their familiarity with the study area. Each of the

assistants was asked to request the extension agents and farmers to respond to the required column only while Pensioners responded to the performance column only. Out of 342 copies of questionnaire distributed, 317 (33extension. 74farmers and 210 pensioners) were properly filled, returned and used for data analysis. Weighted mean and Improvement Need Index (INI) were used in analyzing the data. Mean helped in determining the item required while Improvement Need Index aided the researcher in taking decision on the items where pensioners needed improvement. In taking the decision, the following steps were followed:

1. the weighted mean of each item under the required column was calculated (\bar{X}_R)
2. the weighted mean of each item under the performance column was also calculated (\bar{X}_P)
3. the difference between the two means for each item ($\bar{X}_R - \bar{X}_P$) was determined for decision making on the improvement needed by Pensioners thus:
4. where the difference was zero (0)there was no improvement needed (NN) because the level the item

was required was equal to the level at which Pensioners could perform the item

5. Where the difference was negative (-) there was no improvement needed because pensioner could perform the item more than the extent the item was required.
6. Where the difference was positive (+), there was improvement needed (IN) because the level at which the item was required was greater than the level at which Pensioners could perform the item.

RESULTS

The result of the study was obtained from the research questions answered and reported in tables 1 to 5

Research Question one

What are the skills in planning for grasscutter rearing enterprise where pensioners need improvement?

Data for answering the research question were presentment in Table 1

Table 1: Performance gap analysis of the mean ratings of the Responses of Pensioners on the skills in Planning for Grasscutter Rearing Enterprise

SN	Skills in Planning: Ability to:	N=210			Remark
		ext agents & farmers	pensioners	$\bar{X}_R - \bar{X}_P$	
		\bar{X}_R	\bar{X}_P		
1	Formulate objectives for breeding grasscutter	3.66	3.58	0.08	IN
2	Review the objectives of breeding enterprise based on changes in demand and supply	3.66	3.60	0.06	IN
3	Identify sources for grass cutter stocks	3.67	3.73	-0.06	NN
4	Estimate timeframe for activities in the plan	3.70	3.28	0.42	IN
5	relevant facilities needed for grasscutter rearing enterprise	3.66	3.16	0.50	IN
6	Budget for the grass cutter breeding enterprise	3.53	2.60	0.93	IN
7	Identify sources of finance for grasscutter rearing enterprise	3.71	3.69	0.02	IN

SN	Skills in Planning: Ability to:	ext agents & farmers \bar{X}_R	pensioners \bar{X}_P	$\bar{X}_R - \bar{X}_P$	Remark
8	Identify sources of fodder and concentrates for the grass cutter	3.77	3.57	0.20	IN
9	Identify source of labour input for grasscutter rearing	3.50	3.49	0.11	IN
10	employ workers for rearing grasscutter if on commercial basis	3.56	3.10	0.46	IN
11	Identify records to keep in grasscutter rearing enterprise.	3.63	3.75	-0.12	NN
12	Identify marketing outlet for grasscutter.	3.78	3.81	-0.03	NN

\bar{X}_R = Mean of required; \bar{X}_P = mean of performance; IN = Improvement needed; NN = Improvement not needed.

The data presented in Table one column one revealed that extension agents and farmers indicated that all the 12 items on planning for grasscutter rearing were required while column two indicated the extent pensioners could perform each of the items. The Table 1 further revealed in column three that the performance gap values of nine out of 12 items ranged from 0.02 to 0.46 and were positive. The values indicated that the pensioners need improvement in the nine skill items. However, three of the 12 items (no 3, 11 & 12) had their performance gap values as - 0.06, - 0.12 and - 0.03;

indicating that the pensioners did not need improvement on the three items because they could perform the item more than the extent these item were required.

H0: There is no significant difference in the mean ratings of extension agents and farmers on skills in planning for grasscutter rearing enterprise

Data for testing the hypothesis one were presented in Table 2

Table 2: T-test Analysis of the responses of extension agents and farmers on skills required in planning for grasscutter rearing enterprise

Group Statistics at 0.05 level of sig							
	Occupation	N	Mean	Std. Deviation	Std. Error Mean	Sig	Remark
Procedure	Extension Agents	33	3.0392	.46055	.07785	0.814	NS
	Farmers	74	3.2000	.62225	.10518		

Key = Df = degree of freedom; F frequency; Sig =significance level

Data in Table 2 showed that the significant value was 0.814. The value (0.814) is greater than 0.05; indicating that there was no significant difference in the mean ratings of the two groups of respondents on the skills required in planning for grasscutter rearing. The

null hypothesis of no significant difference was accepted.

Research Question Two

What are the skills in housing and feeding of grasscutter where pensioners need improvement?

Data for answering research question two were presented in Table 3

Table 3: Performance gap analysis of the mean ratings of the Responses of Pensioners on the skills in housing & feeding Grasscutter N=201

SN	Housing Grasscutter	ext agents & farmers \bar{X}_R	pensioners \bar{X}_P	$\bar{X}_R - \bar{X}_P$	Remark
1	acquire land for grasscutter rearing	3.47	3.55	- 0.08	NN
2	Clear the land where the house is to be constructed using required tools.	3.38	3.37	0.01	IN
3	Construct appropriate house for grasscutter rearing	3.51	2.67	0.84	IN
4	Provide necessary facilities for rearing the animal	3.62	3.06	0.56	IN
5	Stock the animal at the required spacing	3.51	3.27	0.24	IN
6	Detect various diseases infecting the animal	3.73	3.41	0.32	IN
7	Identify and call non-productive grasscutter at maturity	3.70	3.04	0.66	IN
Feeding					
8	Prepare the feeds or purchase already prepared feed (concentrates) from the relevant market	3.78	3.48	0.30	IN
9	Obtain appropriate fodder within the environment	3.60	3.44	0.16	IN
10	Wash the foddors off pest to avoid pest infestations	3.36	3.45	- 0.09	NN
11	Supply appropriate amount of fodder at regular intervals (6-7 pm)	3.34	3.27	0.07	IN
12	Supply correct quantity of concentrate feed, between 2-3pm	3.65	3.05	0.60	IN
13	Supply water to the animals' ad-libitum	3.53	3.52	0.01	IN
Health Management of grasscutter					
14	Observes grass cutters for disease symptoms	3.66	3.45	- 0.21	NN
15	cull sick ones to a separate pen	3.66	3.67	- 0.01	NN
16	Consult veterinarian for medical attention	3.67	3.52	- 0.15	NN
17	Purchase drugs to treat the sick animals	3.70	3.23	0.47	IN
18	Observe grass cutters for responses to treatments	3.66	3.69	- 0.03	NN
19	Bury dead diseased grass cutters .	3.53	3.54	- 0.01	NN
20	Apply woodash round the grass cutter pen to prevent tailors ants	3.54	3.54	0.00	NN

SN	Housing Grasscutter	ext agents & farmers \bar{X}_R	pensioners \bar{X}_P	$\bar{X}_R - \bar{X}_P$	Remark
21	Spray water on the floor of the pens before sweeping to avoid respiratory infection.	3.28	3.99	- 0.71	NN
22	Disinfect hutches against rats as their urine is poisonous to the animals.	3.31	3.21	0.10	IN
23	Plant medicinal trees within the environment for scaring snakes use.	3.33	2.55	0.78	IN

The data presented in Table two;column one revealed that extension agents and farmers indicated that all the 23 items were required while column two indicated the extent pensioners could perform each of the items. The Table 2 further revealed in column three that the performance gap values of 14 (housing 6 feeding 5 & health 3)) out of 23 items ranged from 0.01 to 0.84 and were positive. The values indicated that the pensioners need improvement in all the 14 skill items in housing, feeding and health management of grasscutter. However, 9 of the 23 items (no 1, 10, 13-15, 16 & 18 - 21) had their performance gap values ranged from 0.00 to -

0.60; indicating that the pensioners did not need improvement on the 9 items because they could perform the item equal or more than the extent these items were required.

H₀₁ : There was no significant difference in the mean responses of Agricultural Extension agents and Grasscutter farmers on the housing, feeding and health management of grasscutter

Data for testing the hypothesis two were presented in Table 4

Table 4: t-test Analysis of the responses of extension agents and farmers on skills in housing, feeding and health management of grasscutter.

Group Statistics at 0.05 level of sig							
Occupation	N	Mean	Std. Deviation	Std. Error Mean	Sig	Remark	
Procedure	Extension Agents	33	3.0392	.46055	.07785	.945	NS
	Lecturer	74	3.2000	.62225	.10518		

Data in Table 4 revealed that the significant level was 0.945. The value is greater than 0.05; indicating that there was no significant difference in the mean ratings of the extension agents and farmers on the skills in housing and feeding grasscutter. The null hypothesis of no significant difference was accepted.

Research Question Three

What are the skills in marketing of grasscutter where pensioners need improvement?

Data for answering research question three were presented in Table 5

Table 5: Performance gap analysis of the mean ratings of the Responses of Pensioners on the skills in marketing Grasscutter

S/N	Skills in Marketing: Ability to:	ext agents	pensioners	PG	Remark
		& farmers \bar{X}_R	— \bar{X}_P	$\bar{X}_R - \bar{X}_P$	
1	Sort and grade grasscutter for sale using weighing scale.	3.66	3.87	0.21	IN
2	Fix prices to different sizes of grasscutter based on making profit	3.67	3.78	0.11	IN
3	Advertise the grasscutter for sale to attract customers	3.45	2.10	1.35	IN
4	Sell at farm gate, open market or invite wholesalers to buy in bulk	3.76	3.69	0.07	IN
5	Collect cash at point of sale	3.53	3.54	- 0.01	NN
6	Keep financial records for marketing grasscutters	3.70	1.47	2.23	IN
7	Determine profit or loss account of the business	3.91	2.55	1.36	IN

The data presented in Table five column one revealed that extension agents and farmers indicated that all the seven items on planning for grasscutter rearing were required while column two indicated the extent pensioners could perform each of the items. The Table 1 further revealed in column three that the performance gap values of six out of seven items ranged from 0.11 to 2.23 and were positive. The values indicated that the pensioners need improvement in all the six skill items in marketing grasscutter. However one of the items (no 5) had its performance gap values as - 0.01; indicating that the pensioners did not need improvement on the item because they could perform the item more than the extent it was required.

DISCUSSION OF FINDINGS

The findings of the study in Table 1 column one revealed that extension agents and grasscutter farmers indicated that all the 12 items on planning for grasscutter rearing. These skill items include formulate specific objectives for grasscutter rearing enterprise; revise the objectives of the enterprise periodically based on changes in demand and supply; decide on the grasscutter management system to adopt on the farm and so on. The findings were in agreement with the

views of Olaitan and Mama (2001) who stated that competency items in planning of any farm operation include: formulate specific objective for the farm, revise the objectives periodically and draw up programme plan for the farm among others. The findings were also in line with the opinions of Upton in Nkoli (2005) who listed the abilities in planning a farm to include choose a farm of sufficient size to support the objectives of the farm, fit the capabilities, interest and knowledge of the farmer to the type of farm operations, plan the farm as long a period as possible and so on.

The findings of the study in Table 2 revealed that 23 skill items were required in rearing grasscutter. The skill items include construction of hutches for the animals, feeding, and health management and so on. The findings of the study in this direction were in conformed to the findings of Asogwa, Maduka and Olaitan (2013) in a study on skills in horse husbandry for job creation and wealth generation where it was found out that 25 skills in housing, feeding and health management and 12 skills in marketing of horses were required in horse husbandry. The findings of this study on marketing were also in agreement with the observation of Miller (2006) who listed three cardinal rules for marketing grasscutter and grasscutter products as: test the

market, meet your customers' unique needs and speak in terms your customers can understand.

Furthermore, the findings of the study were also in consonance with the finding of Abah and Jones (2010) in a study on skills improvement needs of teachers of Agricultural science in teaching grasscutter production effectively to students in senior secondary schools in Ebonyi State, where it was found out that teachers of Agricultural science needed improvement in 10 competency items in grasscutter planning, 12 in feeding of grasscutter and 6 competency items in health management of grasscutter. The findings on performance gap were also in line with the findings of many researchers that the performance gap indicates need for retraining in specific areas of need to enhance performance (Ifeanyieze & Olaitan, 2010; Ifeanyieze, 2011; Ifeanyieze, Okeme & Dumbiri 2012).

The findings of the study on the hypotheses tested indicated that there is no significant in the mean ratings of extension agents and farmers on the skills in planning, rearing and marketing of the animal. The implication of this finding was that the professional status of the agents and farming experience of the farmers did not significantly influence their responses.

CONCLUSION

The issue of sustaining the pensioners after active service from employed labour has been a great concern and a cause to worry for every worker nearing age of retirement especially to the government and even relatives of such retirees. This has called for a study on skill areas that could help the pensioners engage in less laborious but profitable venture like grasscutter rearing enterprise to compliment the meagre income paid to them as pension. This study therefore, identified areas in grasscutter where pensioners with bias in agriculture need improvement in order to engage in grasscutter rearing enterprise for income generation and for sustainable livelihood.

RECOMMENDATIONS

It was therefore recommended that:

1. The agricultural extension Officers in the state ministry of agriculture Enugu should use the identified skills by this study to guide pensioners who are interested in rearing grasscutter.
2. The government of Enugu State through the assistance of curriculum planners should infuse the skills identified by this study into the state skill acquisition centres as a training programme for other individuals that are interested in enhancing their financial status.

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