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Keywords: *pigs, constraints, strategies, production delta state, nigeria.*

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Constraints and Strategies for Enhancing Pig Production in Delta State, Nigeria

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I. Introduction

With the ever increasing human population in Nigeria and virtually static agricultural productivity, animal protein consumption among Nigerians has worsened in the past few years (Okpor, 1999). Many Nigerians feed on carbohydrate. This is because the average man cannot afford the cost of animal protein which is richer in amino acid. The deficiency of animal protein in the diet of so many people is often attributed to low number of livestock (such as pig, cattle, poultry and their products) and the activities connected with their production which are not efficient (Morison, 1991).

According to Ugwu, (1996), animal protein apart from palatability is essential for normal physical and mental development of man. Pig industry in Nigeria is an important aspect among the livestock sub-sector in the overall agricultural sector. This assertion derives from the fact that pig production has high potential to contribute to high economic gain in three ways. Firstly, pigs have high feed conversion efficiency, early maturity, short generation interval and relatively small space requirement. Secondly, they are multipurpose animals providing about 40% of meat in the world market. Pig's dung serves as a good source of organic manure for enriching poor soils and provision of biogas (methane) for cooking. Thirdly, pig's skin is also useful for light leather production (Babatunde and Fetuga, 1990).

According to Food and Agriculture Organization (FAO, 2001), pork is the most popular meat consumed in the world today, forty percent protein is derived from pork and pork products. There is a greater output of meat from pigs than the combined output of meat from cattle, buffalo, sheep and goat. Pigs supply about 63.9 million metric tonnes of meat per year (Dennis and Lutwama, 2012).

In order to increase the quality and quantity of animal protein intake in the country, past and present governments in Nigeria have initiated various programmes aimed at enhancing pig production. In Delta State for instance, the government in 2009 under its Youth Empowerment through Agriculture (YETA) programme, trained prospective pig farmers. At the end of their training, 636 pig weaners, 450 in-pigs and the sum of nine hundred and eighty nine thousand naira (989,000) was shared to trainees as starters pack. It has however been observed that despite efforts made in this direction, the trend in pig production has been dwindling in the country. It is in view of this situation that this study was conceived to examine the constraints that are associated with the production of pig in Delta State. Specifically, this study focused on the following objectives: i) describe the socio economic characteristics of pig farmers; ii) identify constraints to pig production; and ascertain strategies for enhancing pig production.

II. Methodology

The study was carried in Delta State, Nigeria. A multistage sampling procedure was adopted in the selection of respondents for the study. The first stage involved a random selection of two extension blocks (LGAs) from each of the three agricultural zones in the State. This gave a total of six extension blocks. The second stage involved random selection of three extension cells from each of the six selected extension blocks. This gave a total of eighteen extension cells. The third stage involved the selection of five pig farmers from each of the selected extension cells. This sampling procedure gave a total of 90 pig farmers that served as respondents of the study.

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Data for the study were collected through a validated interview schedule. Constraints to pig production were determined by requesting respondents to rate the level of importance of possible constraints using a three point Likert-type scale of: not important = 1; important = 2; and very important =3. Scores obtained from their responses were then subjected to factor analysis. Strategies for enhancing pig production were measured by requesting respondents to indicate the extent to which certain strategies can enhance pig production using a four point Likert- type scale of: to a very great extent =4, to a great extent =3, to some extent =2, and to a very little extent =1. The mean score of the response values which is 2.50 was used as a cut-off point. Thus, strategies with scores of 2.50 and above are those that can enhance pig production to a great extent, while strategies with score of below 2.50 are those that can enhance pig production to a little extent.

Data generated for the study were analyzed using descriptive and inferential statistics. Percentage, mean scores, and frequency count were used to summarize data, while exploratory factor analysis procedure using the principal factor model with iteration and varimax rotation was used to determine constraints to pig production.

Table 1 : Sample composition

Agricultural Zones	Extension Blocks	Extension Cells	No. of pig farms selected
Delta North	Ukwuani	Obiaruku	5
		Umutu	5
		Amai	5
	Ika South	Ekuku-agbor	5
		Alisimie	5
		Agbor-nta	5
Delta Central	Ethiope East	Oria-abraka	5
		Eku	5
		Okurekpo	5
	Okpe	Mereje	5
		Ororokpe	5
		Aghalokpe	5
Delta South	Warri North	Koko	5
		Nana	5
		Ajiagbodudu	5
	Burutu	Ogulaha	5
		Burutu	5
		Kiagbodo	5

III. Results and Discussion

Entries in Table 2 reveal that 83 percent of the respondents were males, while females were 17 percent. This indicates that men were more involved in pig production than the female in the study area. This may be attributed to the fact that pig farming is more labour intensive. A similar finding was reported by Adu, Meduna and Adekunle (2004). Information on marital status reveals that 80percent of the respondents were married while 11 percent were single. Farmers who are married tend to be more productive because decisions are usually jointly taken thereby giving rise to better allocation and utilization of resources. Results on respondents' age revealed that 84 percent of them fell within the age bracket of 20 -49, while 16 percent were within the age of 50-69. According to Ugwumba and Eziolise (2010), age enables farmers to accumulate resources and experiences over year to enable them increase productivity.

Information on respondents' educational status revealed that all the respondents had formal education ranging from primary to tertiary. This indicates that majority of the pig farmers are literates. According to Madukwe (1995), educational level of farmers is one of the variables related to adoption of improved farm practices. Information on respondents' farming experience revealed that 66 percent had 1- 10 years farming experience, while 32percent had 21-25 years farming experience. Farming experience equips farmers with the necessary knowledge and skills that are necessary to manage farm resources more efficiently.

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Table 2 : Distribution of respondents according to their socio- economic characteristics (n=90)

Socio-economic Characteristics	Frequency	Percentage
Sex		
Male	75	83
Female	15	17
Marital status		
Divorced	5	6
Widowed	3	3
Single	10	11
Married	72	80
Age		
20-29 years	16	18
30-39 yeas	40	44
40-49 years	20	22
50-59 years	12	13
60-69 years	2	3
Educational Qualification		
Primary	5	6
Secondary	14	16
OND/NCE	39	43
HND/B.Sc	30	33
M.Sc/ PhD	2	2
Farm Size		
1-50 pigs	30	33
51-100 pigs	45	50
101-150 pigs	15	17
Farming Experience		
1-5 years	24	27
6-10 years	35	39
11-15 years	18	20
16-20 years	11	12
21-25 years	2	2

a) Constraints to pig production

Entries in Table 4 show results of factor analysis of constraints to pig production. Based on the item loadings, three factors were identified. These are: economic, poor management practices and socio-cultural biases. Specific constraints under the economic factor include lack of credit facilities (0.793); high cost of improved breeds (0.737); high cost of feeds (0.689); high cost of veterinary services (0.536) and high cost of labour (0.456).

The loadings under poor management practices includes poor breeding methods (0.752); poor extension services (0.639); disease and pest infestation (0.453) poor methods of servicing (0.668); poor methods of weaning (0.556) and poor feeding methods (0. 804). Specific constraints under the socio-cultural biases are: lack of market for pig products (0.411); religious belief about pig (0.607); limited sources of pig feeds (0.552) and social beliefs about pigs (0.639).

Table 4 : Analysis of constraints associated with pig production

	Constraints	Factors		
		Economic	Poor management	Socio cultural biases
1	Lack of credit facilities	**0.793**	0.117	0.096
2	High cost of improved breeds	**0.737**	0.080	0.105
3	High cost of veterinary services	**0.536**	-0.453	0.357
4	Poor breeding method	0.379	**0.752**	0.287
5	Poor extension services	0.117	**0.639**	0.387
6	Lack of market for pig products	0.388	0.277	**0.411**
7	Religious beliefs about pig	0.354	0.393	**0.607**
8	High cost of feed	**0.689**	0.155	0..167

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9	High cost of labour	**0.456**	0.325	0.209
10	Diseases and pests infestation	0.270	**0.453**	0..271
11	Poor methods of servicing	0.244	**0.668**	0..195
12	Limited sources of pig feeds	0.334	0.134	**0.552**
13	Poor method weaning	0.746	**0.556**	0..057
14	Poor feeding methods	0.1.66	**0.804**	-0.291
15	Social beliefs about pig	0.172	-.049	**0.639**

b) Strategies for enhancing pig production

Data in Table 5 show the mean score and standard deviation of the strategies for enhancing pig production. Results revealed that all the strategies investigated by the study will enhance pig production. The strategies and their mean scores include: establishment of functional market for pig and pig products (M= 3.84); subsidy for pigs housing and equipments (M=3.86), adoption of improved pig production technologies (M=3.82); provision of transport facilities (M=3.62); improved extension services for pig farmers (M=3.71); special credit scheme for pig farmers (M=3.76) and public enlightenment on the nutritional value of pigs (M=2.78).

Other important strategies for enhancing pig production as identified by the respondents are: enacting legislation against discrimination of pig products (M=2.61); making veterinary services available and affordable (M=3.85) and pig farmers should use good management practices (2.78).

Table 5 : Strategies for enhancing pig production

	Strategies	Mean	S.D
1.	Establishment of functional market for pigs and pigs products	3.84	0.58
2.	Subsidy for pig housing and equipment	3.86	0.47
3.	Adoption of improved pig production technologies	3.82	0.59
4.	Provision of transport facilities	3.62	0.78
5.	Improved extension services for pig farmers	3.71	0.60
6.	Subsidy for pigs feeds	3.57	0.62
7.	Special credit scheme for pig farmers	3.76	0.65
8.	Public enlightenment on the nutritional value of pigs	2.78	0.68
9.	Enacting legislation against discrimination of pig products	2.61	0.78
10.	Financial institution should give priority to pig farmers	2.80	0.68
11.	making veterinary services available and affordable	3.85	0.46
12.	Pig farmers should use good management practices	2.78	0.72

IV. Conclusion

Pig industry in Nigeria is an important aspect among the livestock sub-sector in the overall agricultural sector. This is because pigs have high feed conversion efficiency, early maturity, short generation interval and relatively small space requirement. Also, they are multipurpose animals providing about 40% of meat in the world market. Pig's dung serves as a good source of organic manure for enriching poor soils and provision of biogas (methane) for cooking. Increased pig production has however been hampered due to economic, poor management and socio-cultural constraints. These constraints can be removed through the adoption of strategies that enhance pig production such as establishment of functional market for pig and pig products; subsidy for pigs housing and equipments, adoption of improved pig production technologies; provision of transport facilities; improved extension services for pig farmers; special credit scheme for pig farmers and public enlightenment on the nutritional value of pigs.

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