THE MEAT PROCESSING INDUSTRY IN GHANA

TEYE, G.A

Department of Animal Science, University for Development Studies, Tamale E-mail: teye.gabriel@yahoo.com

ABSTRACT

A survey was conducted to determine the state of the meat processing industry in Ghana. A total of twenty-four meat processing firms were visited and interviewed with structured questionnaires. Small-scale, labour-intensive enterprises were the majority (83.3%) of firms. Pigs, cattle, sheep, chickens and guinea fowls which were obtained from sources such as the processor's own farm, local livestock farmers and commercial farms were the main species processed. A total of forty-six different processed products were being manufactured and marketed readily. A major bottleneck in the industry is the high cost and irregular supply of animals which are sometimes of low quality. Meat processing is serving as a reliable market for livestock farmers. The future of the industry appears bright, however, it may require a more reliable source of inputs supply to sustain it.

KEY WORDS: Meat, processing, processed products, farm animals, industries

INTRODUCTION

A major limitation to increased and sustainable agricultural productivity in Ghana is the inefficient and poor marketing system especially during bumper harvest. It is often stated that the possible way out is to process the raw produce into value-added products. Meat processing, the conversion of the flesh and edible organs of animals into value-added

products by using biochemical and physical technologies is one of the means of adding value to agricultural products. Meat processing thus provides potential avenue for marketing farm animals. Generally, meat processing provides the necessary encouragement for increased and improved production in the livestock sub-sector. Scientific cutting prior to processing provides products at different price levels making the products affordable to both high- and low-income groups. This leads to increased consumption of meat and meat products which are concentrated sources of quality nutrients (protein and minerals) to compensate for deficiencies in food from plant sources (FAO, 1992).

Meat processing further provides the scope to mix the less desirable parts of the carcass (high fat, collagen and connective tissue portions) with the more desirable meat to produce attractive and acceptable products (Poulanne and Ruusanen, 1981) and therefore increases revenue from farm animals. It also allows or enhances the use of meat extenders such as wheat, gluten, bread rusk, blood plasma, soyabean, fish, cassava, cheese whey and cowpea flour (Jelen, 1975; Schmidit, 1988; Nessel and Okai, 1991; Anang, 1993; Annor-Frimpong *et al,* 1996 and Teye *et al,* 2006) to bulk out the supply of meat products at affordable prices.

This study was conducted to provide information on the existing state of scientific meat processing in Ghana and also to assess the future of the meat processing industry in Ghana.

MATERIALS AND METHODS

Initial data were obtained over a five-month nation-wide survey from late 1993 to early 1994. Follow ups were undertaken in 1996 and 1997; 2006 and 2007. The sampling method was authoritative, in that only meat processors were interviewed. A well structured questionnaire was used to solicit information from each firm. The questions asked included:

- Duration of operation;
- Type of animals being utilized;
- Source of animals;
- Problems in acquiring raw materials;
- Marketing problems etc.

All the ten regional capitals in Ghana, fifteen district capitals normally used by the Ministry of Food and Agriculture for Agricultural market surveys and other towns where prior information indicated the existence of a processing firm were visited. The assistance of meat processors, meat inspectors and butchers were sought in locating less known and new enterprises.

ANALYSIS OF DATA

Scale of Production

In the absence of a unified criterion for categorizing enterprises into scales of production, a combination of criteria used by various organizations namely; Statistical Services Department (SSD), Ministry of Trade and Industry (MoTI) and Ghana Standard Board (GSB) were used. The categorization was done as indicated in Table 1 and the basis for the groupings were as follows:

A. Number of employee (SSD)

B Investment excluding land (MoTI)

C Output and income (GSB)

Table 1: Scale for categorizing Meat Processing firms in Ghana.

Criteria	**Small**	**Medium**	**Large**
Number of employees	Less or equal to 9	10 to 29	30 or more
Investment (US$) (Excluding land)	Less than 100,000.00	100,000.00 to 500,000.00	more than 500,000.00
Annual output of processed products (metric tones)	Less than 50	50 to 100	More than 100
Annual income from processed products (US$)	Less than 100,000.00	100,000.00 to 500,000.00	More than 500,000.00

Statistical Analyses

Percentages (Casely and Kumar,1989) was the main statistics used to analyse the data.

RESULTS AND DISCUSSION

Meat Processing in Ghana

The establishment of scientific commercial processing of meat into products such as sausages, ham, luncheon meats, canned beef etc., dates back to the 1960's. The Bolgatanga Meat Factory (renamed GIHOC Meat Products Factory) was commissioned in 1965. Around the same time, the UAC Pig processing plant known as "Ice company" and Toro Ghana Limited, were operating in Accra. In the 1970s, Premium Meat Packers Ltd (renamed Pioneer Meat Industries Ltd.) started operating in Accra while May Fair Groceries was also operating in Kumasi.

Most of these factories collapsed while others became stagnant. The active ones are those established in the late 1980s and 1990s. After over forty years of the inception of the meat processing industry, it appears to remain rudimentary. The low scale of production, level of technology being applied, and inadequate equipment and auxiliary facilities situation (e.g. slaughter houses) are some of the indicators that the industry is not fully developed.

Scale of Production

The processing firms/institutions located during the survey were grouped into small, medium and large-scale enterprises (Table 2).

Table 2. *Scale of meat processing firms in Ghana*

Scale	Number of Firms	(%) of Total Firms
Small	20	83.3
Medium	3	12.5
Large	1	4.2
Total	24	100

Small-scale enterprises formed the majority (83.3%) of the firms. Three of the firms (2.5%) were medium-scale but there was only one large-scale firm (4.2%). Considering the over forty-year period of meat processing activities in this country, it is tempting to assume that medium to large-scale production should be the norm but the situation is different. The apparent stagnation in the meat processing industry may not be an isolated case but in line with the general decline in the food processing sector of the Ghanaian economy. The contributing factors to this situation include:

i. Low patronage of locally produced products considered to be "inferior" in the presence of imported products.

ii. Irregular and insufficient supply of quality raw materials (animals and carcass)

iii Poor condition of processing equipment due to lack of spare parts for repairs

iv The use of obsolete equipment

v. Lack of qualified meat technologists

Distribution of the firms in the Country

The largest number of firms (50.0%) was located in the Greater Accra region (Table 3).

Table 3: Regional Distribution of meat processing firms in Ghana

Regions	Number of Firms	% of Total Firms
Greater Accra	12	50.0
Ashanti	6	25.0
Northern	2	8.3
Eastern	1	4.2
Centeal	1	4.2
Volta	1	4.2
Upper East	1	4.2
Brong Ahafo	-	-
Upper West	-	-
Western	-	-
Total	24	100

All the firms in the Greater Accra region were located in and around Accra and Tema. Twenty-five percent of the firms were found in the Asante region and all except one, were located in Kumasi. Two firms (8.3%) started operating in the Northern region between 1999 and 2007. Only one processing firm existed in each of the following regions; Eastern, Central, Volta, and Upper East. No meat processing firm existed in the Brong Ahafo, Western, and Upper West regions. The concentration of the firms in and around Accra is probably due to the fact that it is the largest cosmopolitan city in Ghana, the hub of economic activities and the centre for national and international activities therefore providing a favourable market for these products.

Types (Species) of Animals Utilized

A total of nine farm animals were identified as those utilized in the meat industry (Table 4). However, only five (cattle, pigs, sheep, guinea fowls and chickens) were processed into valued-added meat products. The meat of the other four species (goats, duck, turkey and rabbit) were sold unprocessed. Sheep meat (mutton) and goat meat (chevon) were the most unprocessed meat in all the firms.

Table 4. *Type of Animals processed Ghana*

Species	Number of Firms		% of Total Firms	
Pigs	23	-	95.8	-
Cattle	22	-	91.7	-
Chickens	2	(10)	8.3	(41.7)
Guinea Fowls	2	-	8.3	-
Sheep	1	(13)	4.2	(54.2)
Goats	-	(8)	-	(33.3)
Ducks	-	(4)	-	(16.7)
Turkeys	-	(3)	-	(12.5)
Rabbits	-	(3)	-	(12.5)

Figures in parenthesis indicate the number and corresponding percentage of firms that sell only the unprocessed meat of the species concerned.

Pigs were processed by majority of the firms, followed by cattle, chickens and guinea fowls and sheep. The use of pork by most of the firms explains why pork products were thé most popular among all the firms. This observation conforms to the findings of Barnes and Ekekpi (1991) and Agyakum (1997) that there is a greater demand for processed pork than the fresh in spite of the religious and social prejudices against pork. Pork products are enjoying a massive patronage partially due to their prices being relatively lower than products from other species. It is inferable that processing can enhance the marketability of all species.

Types of Products Turned Out.

In all, about forty-six different products were produced locally. Out of this number, only five products i.e. minced meat, fresh pork sausage, smoked sausage, bacon and cooked ham were produced by majority of the firms. The number of firms producing a particular product is shown in Table 5. It can be observed from Table 5 that as many as twelve products were manufactured by only three firms (12.5%) and 16 others by only one firm (4.2%). All the firms, however, sold frozen and/or fresh unprocessed meat.

The possible reasons for this trend of production may include:

i The dictate of consumers i.e. products that command higher patronage are produced by majority of the firms

ii Lack of equipment and technical know-how which can limit the manufacture of a particular product

iii Some of the products may be unknown to the processors themselves.

Table 5: The Prevalence of Meat Products Among local Meat Processing Firms

Type of Products		No. of Firms	% of Total Firms
1. Minced Meat		24	100
2. Fresh Pork Sausage		21	87.5
3. Smoked Pork Sausage		16	66.7
4. Bacon		15	62.5
5. Cooked Ham		14	58.3
6. Fresh Beef Sausage		11	45.8
7. Liver Sausage		9	37.5
8. Frankfurter (Winners)		8	33.3
9. Scalded Beef Sausage			
10. Meat Loaf	11. Beef burgers	7*	29.2
12. Hamburger	13. Smoked Ham	6*	25.0
14. White Sausage		4	16.7
15. Pepperoni	16. Salami		
17. Mortadella	18. Garlic Sausage	4*	16.7
19. Cervelats	20. Blood Sausage		
21. Ham Sausage	22. Air Dried Sausage		
23. Chipolata	24. Head Cheese		
25. Corned Beef	26. Luncheon Meat	3*	12.5
27. Collar Bacon	28. Streaky Bacon		
29. Gammon	30. Chicken burger		
31. Vienna Sausage			
32. Grilled Chicken			
33. Grilled Guinea Fowl			
34 Beef Frankfurter			
35. Bier Sausage			
36. Westphalian Sausage			
37. Lyoner		1*	4.2
38. Smoked Cured Beef			
39. Summer Sausage	40. Kasseler		
41. Lamb Sausage	42. Liver Loaf		
43. Canned Chicken	44 Beef Loaf		
45. Petit Salami	46. Black Bacon		

**Products manufactured by the same number of firms are under the corresponding percentage of firms*

Source of Animals

The main source of animals for majority of the firms (37.5%) was subsistence and commercial farmers (Table 6.)

Table 6. Source of Animals for meat processing in Ghana

Source	No. of Firms	% of Total Firms
Subsistence & Commercial Farmers	9	37.5
Own Farm & Subsistence Farmers	8	33.3
Solely Processor's Own Farm	5	20.8
Soley Subsistence Farmers	5	20.8
Imported & Subsistence Farmers	1	4.2

**A firm can belong to two or more categories*

Five firms (20.8%) depended solely on the subsistence farmers. Only one firm used to import animals beside the local sources. Those firms using animals from their own farms only, indicated that they had a reliable source of the basic raw material which ensured continuous throughput. On the other hand, firms depending only on the subsistence farmers were sometimes faced with uneven supply and price and quality fluctuation, which collectively affected the cost and continuity of production.

Since only 20.8% of the firms depended solely on their own animals as compared to the remaining 79.2% of the firms depending to some extent on the subsistence local farmers, it can be concluded that the local livestock farmers constitute the nucleus of the source of animals. Any improvement in the productivity of the local livestock industry will stabilize and enhance meat processing in Ghana. Likewise, a booming meat processing industry will provide a reliable market for an expanded livestock industry.

Average Annual rate of Slaughter of Animals by Firms

Table 7 shows the annual mean rate of slaughtering of various species by the processing firms from 1990 to 2007. Among the livestock, pigs again ranked highest, followed by cattle, goats and sheep. It was also observed that the small-scale firms were slaughtering slightly more small ruminants than cattle.

Table 7: Average Annual Slaughter Rate by meat processing Firms in Ghana (1990 - 2007)

Species	**Scale of Production**	
	Small	**Medium**
Cattle	110	425
Pigs	635	1050
Sheep	170	170
Goats	207	205
Chicken	6,505	21,580
Guinea Fowl	21,500	

***Data for Ducks, Turkey and Rabbit were Scanty and Inconsistent as they were only Slaughtered on Request.**

There were no values for the sole large scale firm because it stopped slaughtering in the 1980s wheh it could no longer afford to import live animals from neighbouring countries. It was reported that the local supply of livestock was insufficient to sustain the operation of the sole large scale factory. Consequently, output was very low resulting in huge overheard cost and debt. Sustaining the operation of meat processing firms will therefore require continuous supply of quality animals from the local livestock sector.

Problems of Procurement of Animals and/or Carcasses

The methods of buying animals and carcasses were adversely affecting the operation of the firms as the cost of production was generally high. Animals were often over-priced on the local market since there were no facilities for determining the live weights of the animals. The animals were also not appraised and graded by any standard criteria to make the pricing system fair and efficient. Another major problem was the inappropriate means of transporting animals over long distances which stressed the animals resulting in excessive loss of weight and sometimes death.

Inadequate supply and frequent shortage of quality animals to the firms was a major hindrance to higher processing levels, which confirms reports by Salifu and Teye (2006) and Teye and Abubakari (2007). The activities of a category of middlemen popularly called "landlord" were an impediment in the pricing of animals on the livestock market. The so-called landlords dictated the price of the animals to either the farmers or retailers who brought the animals to the market and the potential buyer. They ensured that the buyer paid a higher price in order to pay themselves a commission. Their activities tended to scare potential buyers away and subsequently made farmers/seller to spend days and even weeks selling few animals.

There is the urgent need to streamline the mode of marketing animals. Grading and judging based on the body condition and live weight should be adopted as the main determinant of the price of an animal.

Problems of Marketing Local Meat Products

Identifiable marketing problems were categorized as follows:

- Difficulty in getting customers/consumers
- Customers complaining about the high prices of products
- Return/rejection of purchased products
- Consumers complaining about poor presentation

Majority of the firms (73%) had no difficulty in getting customers and 64% of the firms indicated that customers rarely complained about the price of their products. Almost all the firms (95.8 %) never experienced rejection of their products and 86% of the firms indicated that consumers readily accepted their modes of presentation or packaging.

One can deduce from the above that by maintaining the quality of the products and producing according to the dictates of market forces, the disposal of finished products will not pose any problem for the firms. With a little effort to promote these products through the media as being done for dairy products, the market can be widened since more people will become aware of the existence of these products.

CONCLUSION

Although the meat processing industry is still developing after over forty years of its existence, it is playing a vital role in the livestock industry. The sector is dominated by small-scale private enterprises that are mostly relying on the local livestock farmers for supply of animals. Efforts at improving livestock production will be enhanced through increased marketability of these animals by processing. The products from all the firms are made solely for local consumption. Generally, the future of the Meat Processing industry is bright but requires a reliable source of supply of animals to sustain it.

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