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Quality of Agro-Processed Products in Small Firms: A Case of Mbeya and Morogoro, Tanzania

Visent Kipene

Department of Business Management Mbeya University of Science and Technology (MUST). P.O. Box 131, Mbeya, Tanzania

Abstract: Agro-processed products in Tanzania are important in income generation and continuation supply of food products throughout the year. Despite the importance of processed products in the country yet is being processed below standard and exported in small percentage. The objective of this study therefore established the quality status and factors affecting approval of processed products. The study was done in Mbeya and Morogoro regions as representatives of other regions in the country. The analysis was done descriptively where percentage, graphs photographs and tables were used. The results showed the approval agro-processed products are affected by unskilled labour, poor quality of packing materials, cost of acquiring TFDA and TBS approval. The paper recommends the increase and improvement of vocational training collages and technical institutions for skilled people to join agro-processing sub-sector. Improve packing materials; also the government should reduce cost for acquiring TFDA and TBS approval.

Keywords: Quality; Agro-products; Small firms; Tanzania.

1. Introduction

Agro Products comprises all the categories of raw or processed food materials which come from Animals, Plants or other forms of life (Kipene, 2013; Olaoye, 2014). These comprise broad groups of Spices, Cereals, Nuts, Seeds, Fruits, Oil Crops, Tea & Coffee and the likes. There are many significant branches in agro-processing products such as cereal processing, fish processing, fruit and vegetable processing, milk processing, meat and poultry processing, alcoholic beverages and soft drinks etc. However, in Tanzania the infrastructure for processing these products is very low with low exportation and small market share (FAO and UNIDO, 2009).

Different studies indicated that Tanzania is one of a country in East and Central Africa which imports more agro-processed products than what is processed (FAO and UNIDO, 2009; Hawassi, 2006; The United Republic of Tanzania - URT, 2007). Also most of super markets and Shoprite sells more imported agro-products than agro-products processed within a country (InfoDev, 2012). The reason behind of this situation assumed to be due to low quality of agro-processed products as the law in Tanzania requires that processed products that are sold through the formal market should meet TBS and TFDA standards, in order to protect the health of consumers (The United Republic of Tanzania - URT, 2007). Act number 1, of 2003 for TFDA and Act number 3 of 1975 for TBS regulates the quality and safety of processed products, registers and grants the license for processing products (Ministry of Health and Social Welfare [URT] [MHSW], 2003; Ministry of Industry and Trade [URT] [MIT], 1975). Different studies including Kipene (2013) and Hawassi (2006) have indicated that Tanzania is processing products below set standards but they didn't indicate the quality status and factors affecting approval of processed products. This study therefore indicated the status and factors affecting approval of agro-processed products in Morogoro and Mbeya as representative of other regions in Tanzania.

2. Methodology

The study was conducted in Mbeya and Morogoro (Tanzania). A list of small-scale agro-processing firms was prepared for each of four districts in consultation with officials of districts or municipal council. A sample of 107 small agro-processing firms was studied. The study adopted a descriptive survey research design. A descriptive study is concerned with establishing the what, where and how of a phenomenon (Cooper and Schindler, 2006). The research data was collected from the managers of agro-processing firms, Small Industries Development Organization, Tanzania Food Drugs Authority and Tanzania Bureau Standard officials using a questionnaire. Data analysis was done with the help of software Microsoft excel to generate quantitative reports inform of tables which mainly show frequencies and percentages of responses.

3. Results and Discussion

The findings of this study draw on overall overview of status for quality of agro-processed products in small firms. The presentation of study findings and discussions are based on Tanzania Food Drugs Authority and Tanzania Bureau Standard.

3.1. Standards of Processed Products in Small Agro-Processing Firms

Results in Table 1 indicates about 59.8% of processed products in the study area are being processed without TFDA and TBS approval. This implies that most of the processed products were sold from firms without an approval from TBS or TFDA.

Table-1. Firms' Status in relation to TFDA and TBS approval (%)

Types of Approval	District				Total (n=107)
	Mbeya city (n = 45)	Mbeya rural (n= 23)	Morogoro munic (n = 30)	Kilombero (n=9)	
TFDA and TBS approval	15.8	2.8	10.3	1.9	40.2
No TFDA and TBS approval	26.2	18.7	17.8	6.5	59.8
Total	42	21.5	28.1	8.4	100

¹The figure in brackets represents number of firms

Considering the stiff competition posed by imported products, there is a danger that locally processed products could loose their market share or not get a market share at all in emerging local markets. This also means more than half of the processed products cannot even venture into export markets. Having such high a proportion of agro-processing firms that operates and sell food products without compliance to TBS and TFDA implies that there are many processed products in the market which could be violating the law, especially in relation to food safety for consumers. Table 2 reflects the amount of processed products not exported probably due to low standards.

Table-2. Proportion of firms sold in different markets

Region	Proportion (%)		
	Local market (n=104)	Exported (n=3)	Total (n=107)
Mbeya	53.3	0.9	54.2
Morogoro	43.9	1.9	45.8
Total percent	97.2	2.8	100

²The figure in brackets represents number of firms

From Table 2, about 97.2% of the firms in the sample sold their products to local buyers and only 2.8% of the firms exported their products. About 59.8% of the firms as indicated in Table 1 packed and sold their products without TFDA and TBS approval; often the materials used for packing were of low quality. This means there is an opportunity for establishing firms for manufacturing high quality of packaging materials to be used by domestic processors and for export as well. As portrayed by Porter model of trade which says firms tend to use the domestic market to perfect their products before venturing into export markets since buyers determine better market surroundings for local goods and services (Bakan and Doğan, 2012). However, there are several other factors hindering compliance to TFDA and TBS standards as indicated in Table 3.

Table-3. Factors hindering compliance to TFDA and TBS standards

N Reason	District				
	Mbeya city (n=45)	Mbeya rural (n=20)	Morogoro municipality (n=19)	Kilombero (n=23)	Total (n=107)
Knows importance but costly to implement	22.4	14	9.4	7.5	53.3
Knows importance but do not know how to get the service	12.1	4.7	3.7	7.5	28
Sub-total %	34.5	18.7	13	15	81.3
Do not know the importance of standards	7.5	2.8	5.6	2.8	18.7
Total %	42	21.5	18.7	17.8	100

³The figure in brackets represents number of firms

The factors that hinder firms from meeting TFDA and TBS standard include; the perception that the process is costly, limited knowledge regarding necessary steps to meet the standards and perception to ward compliance to the standards.

Results indicates 81.3% of respondents knows the benefits of compliance to TBS and TFDA standards but out of these 53.3% felt that compliance was too costly while 28% said they did not know how to get the services so that they would comply with laws. Meanwhile 18.7% of the respondents did not know the importance of standards hence they did not rush to comply except to avoid a penalty. This reflects the need for raising awareness, capacity building and providing other types of support to processors as they strive to process the products according to set standards. The government should facilitate compliance to TBS and TFDA laws through training, technical support as well as by reducing the cost of compliance so it remains affordable and available to different categories of firm's owners. This observation implies that the cost of compliance to standards should be addressed first in order accelerate the pace of processing many products in accordance to approved standards. This will also accelerate the establishment of firms that meet TFDA and TBS standards.

Firms were also assessed for the extent to which they complied with TFDA and TBS standards. It was reported earlier that only 40.1% of the firms operated with approval from TFDA and TBS (Table 1). Majority of the firm owners argued not comply the standards due to the cost of compliance being too high (53.3%), not knowing the procedure (28%) and not knowing the importance of complying (18.7%). Results show further that more than 59% of processed products were processed without TFDA and TBS approval including packing as reported earlier in Table 1 which is a violation of law. Some of the violation included using poor packing materials, selling unlabelled processed products, not indicating expiry dates and processing products under poor hygienic condition as reflected in Figure 1.

Figure-1. Products processed without TBS and TFDA standards



Unlabelled sunflower oil



Unpacked breads



Poorly packed animal feed



Packed maize flour without expiry date



Unhygienic cooking oil extraction



Poorly packed rice

Packaging without meeting Tanzania Food Drugs Authority (TFDA) and Tanzania Bureau of Standards (TBS) standards reduces opportunities of products entering into the export markets, hence reduced employment generation

option (The United Republic of Tanzania - URT, 2008). Further more, inappropriate packaging reduces the quality and shelf life of processed food products and can lead to product contamination.

The results also indicated the challenge relates to lack of skilled workers for operation, maintenance and processing products. Findings in Table 4 reveal that more than 76% of respondents did not attend training, which specifically focused on agro-processing.

Table-4. Workers attended training on agro-processing

Training status	Number of worker	Percentage
Workers attended training	66	23.4
Workers not attended training	216	76.6
Total	286	100

Further, analysis of workers processing products indicates that unskilled workers for processing agro-products represented 80% of all the workers in the sampled firms (Table 5). Due to many workers working in small agro-processing firms lacking processing skills probably have caused many products to be processed below required standards.

Table-5. Processing skills of workers

Variable	Number of workers	Percentage
Skilled workers	54	20.0
Unskilled workers	225	80.0
Total	279	100

However, 70% of the skilled workers have acquired skills through on job training as indicated in Table 6. This implies that owners and managers do not send their workers to be trained in institutions and colleges for agro-processing activities.

Table-6. Forms of training attended by workers

Variable	Number of workers	Percentage
On the job training	38	70
Off the job training	16	30
Total	54	100

The managers and workers also shown that, there are very few technical training institutions for people who work in agro-processing firms, and institutions which offer such training are very expensive. The list includes some of the colleges under the Vocational Educational and Training Authority (VETA). Consequently firm managers complained about the workers' limited capacity to operate and maintain agro-processing plants and equipment. These challenges have also contributed to process products below standards. Unless efforts are made to address these challenges, the products will continue to be processed below standards.

Further, it was argued that, poor processing technology contributes in processing products below standard, but it was reported as a leading reason by the respondents in milk processing firms, where firm managers argued that, milk processing demands modern machines and high quality of packaging materials to satisfy the standards of TFDA and TBS to compete in local and international market.

Low quality of human capital had the lowest proportion of respondents (4%) as a reason for firms to process products below standards, but it ranked as the first reason attributed for low quality of products in bakeries. This is probably due to regulations which direct that, it is compulsory for bakeries to meet TFDA and TBS standards, which demands skilled workers who have attended special training on processing the products. Other agro-processing firms might use experienced workers who have not attended any special training course for agro-processing activities.

4. Conclusion and Recommendation

The quality of processed products from small agro-processing firms in Mbeya and Morogoro in Tanzania are in low quality to compete with imported agro processed product. This has been attributed by using poor processing technology including packing, labeling, lacking processing skills, processing products under poor hygienic condition and cost of meeting TFDA and TBS standards. The products processed under this condition are not allowed for exportation where only 2.8% of small agro-processing firms in the study area export the processed products hence providing low contribution for foreign exchange and income generation.

To address the problem of low compliance to quality standards, it is recommended that the government through relevant organization, including, TFDA, TBS, Ministry of Industry Trade and Marketing (MIT) and others should develop innovative ways to raise awareness among processors as well as consumers. In addition TFDA and TBS should conduct regular training in order to raise compliance, hence the quality of processed products from Tanzania. This will place Tanzania products in a better position to compete in the local market as well as other export markets.

In addition TFDA and TBS should organize regular visits to agro-processing firms not only for inspection but also for education and guidance.

This study also recommends expansion of investment infrastructure for vocational and technical education to increase the stock of knowledgeable and skilled workers for agro-processing firms to meet required standards of processed products.

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