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Market Study on Turmeric in Plateau State, Nigeria

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Abstract:

Turmeric is referred to as the Golden Spice; it is grown and consumed world over including Nigeria. Turmeric has been identified as one agricultural commodity with awesome potentials to contribute to an economy. Turmeric is cultivated in 19 states including Plateau State. the cultivation of turmeric in Nigeria is defective, capricious and are of low quality as a result of which it discourages commercialization. While acknowledging the global market for spice, there is an abysmal development in the processing, packaging and marketing of Nigerian indigenous spices, this include turmeric. The basic issue necessitating this study is the low utilization of the opportunities prevalent in the turmeric market; this is as a result of the low understanding of the actors and forces and their operations, an understanding of this will ensure coordination in the market. The study discovered a customer and consumer based for turmeric. Farmers were identified as the key actors in the production of turmeric. The value-added activities here include, drying, grinding, pounding, packaging and preserving. Processors also exist in the market; output of processed turmeric includes forms as dried, powered, spices, curry, capsules, packaged in nylon. Two categories of turmeric are distributed viz: fresh and the processed turmeric. As with every other distribution channel, the value added activity involved is moving the commodity from the place of production to the final consumer. Supporting agencies exist, however, they do not have a specifically dedicated intervention to support turmeric market.

Keywords: Turmeric, market study, production, processing, distribution

1. Introduction

Markets comprise of interactions between actors and forces that interact to shape and determine its operations (Kotler& Armstrong, 2006).Rehman, Selvaraj and Ibrahim (2012) said that agricultural marketing is the set of commercial activities involved in moving agricultural products from producers to consumers, they highlighted activities performed by actors to include: storage, transport, processing and transfer of ownership in each of the marketing channels. This was corroborated by Ohal(2015) who observed that agricultural marketing comprises of two parts- agricultural inputs marketing and agricultural output marketing, input to farmers by way of seedlings, fertilizer, while farmers also make outputs of produce to processors and other traders. He further maintained that within the agricultural output marketing, the farmers are often uncoordinated, performing operations with crude techniques and sell their commodity in local markets to traders and agents. The World Bank (2007) said that participation of farmers in commercial aspects of agricultural is crucial for poverty alleviation, this is because their participation is key to increased income for them hence poverty reduction. Rehman, Selvaraj and Ibrahim (2012) said that agricultural markets in developing countries, Nigeria inclusive is inundated by features that do not support its growth and development thus increases chances of marketing failure, they also identified market imperfections as a setback to agricultural transition into commercialization. Bala, Bala, Samuel, and Joseph (2018) said in addition to the normal challenges of agricultural marketing in Nigeria, the unique features of agricultural produce have made the marketing of agricultural produce entirely different from other products, agricultural products are ostensibly homogeneous, with many buyers and sellers and relatively free entry and exist into the market. An understanding of the nature, dimension and interactions of the actors and forces in the market will serve as a basis for the design and implementation of strategies and approaches to strengthen the market for increased productivity.

Turmeric is referred to as the Golden Spice; it is grown and consumed world over including Nigeria. Turmeric has been identified as one agricultural commodity with awesome potentials to contribute to an economy through employment creation, source of raw materials for a number of industries and improved health and standard of living for users. Prospects for turmeric are identified to include in food, cosmetic and pharmaceutical industry as well as international markets. Onwualue, Uchegbu, and Jolaoso, 2013); (Nwaekpe, Anyaegbunam, Okoye and Asumugha (2015) and (Naik and Hosamani, 2017), this was corroborated by Amadi, Dung and Dalyop (2015) who observed that there is widespread derived demand for turmeric.

In Nigeria, Turmeric is cultivated in 19 states including Plateau State, It is noted that the distinct soil and climate of Nigeria has put the country at a vantage position to lead in the production of turmeric, however, this is not the case,

Olife, Onwualu, Uchegbu, and Jolaoso (2013) in a study of spice in Nigeria, identified turmeric as a common type of spice in Nigeria, Nwaekpe et al (2015) said of the numerous types of spices, turmeric ranks second with regard to its foreign exchange earnings, both authors agreed that the cultivation of turmeric in Nigeria is defective, capricious and are of low quality as a result of which it discourages commercialization. They said it is often cultivated as mixed crops with other staples. While acknowledging the global market for spice, they observe the minimal development in the processing, packaging and marketing of Nigerian indigenous spices. Thus is both locally and in the internationally abysmal, they attribute this to the high import than export of spice in Nigeria. This is largely because actors have not be strengthened, supported and coordinated among themselves to be able to take advantage of the prevailing forces within the market so as to realize and attain the full market potentials. Just like any other sector of the economy, there are a number many actors that assume and play roles and responsibilities in order to contribute effectively to the processes of production and consumption of turmeric, this paper reviews the key actors and the forces prevailing within the turmeric market in Plateau State.

1.1. Statement of the Research Problem

The basic issue necessitating this study is the low utilization of the opportunities prevalent in the turmeric market; this is as a result of the low understanding of the actors and forces and their operations. The poor understanding limits coordination among actors and stakeholders relevant to the turmeric market in Plateau State. This low level coordination have stalled ubiquitous benefits that they would have obtained from each other to promote each other's activities and enhance mutual support, value adding for each other and meet the product needs, enhance specificity and speciality of each other to achieve overall strengthening of the turmeric market.

2. Methodology

A mixed methodology of quantitative and qualitative approach was used for the study, quantitative data was collected to gather perspectives and opinions of respondents, this was triangulated with qualitative data to elucidate on and buttress on the implications of the quantitative ratings. The sampling frame consists of representatives of actors in the turmeric market they were purposively framed based on their role in the turmeric market. They include farmers (100), processors (40) retailers (46), experts (20) and customers (80).

3. Findings and Discussion

3.1. Forms of Turmeric Used and Consumed by Customer

Customers use and consume turmeric in the following ways: food, colouring, dye, chewed raw, medicine for cancer and diabetes, rubbed on the body to clear stretch marks, processed and packaged as capsules for food supplements, used for sex enhancement, processed as tea, traditional medicine, spicing of food, spiritual purpose of repelling evil spirits (mostly in rural areas), designing of mat, facial treatment, body beauty treatment.

3.2. Turmeric Market Value Added Activities in the Production, Processing and Distribution along with Respective Actors and Their Role

3.2.1. For Production of Turmeric

100% respondents identified cultivation, harvesting and washing of turmeric as the primary activities undertaken at the production stage of turmeric by farmers. In the course of which they perform activities deciding on the seedlings to cultivate, adopt harvest methods and post harvest measures as wash, packaging and storage of harvested produce.

Majority of farmers (100%) have not had any formal training on turmeric farming, this was corroborated by the training institutions in Plateau State that confirmed that they have not organized any form of specialized training on turmeric farming, in view of this, farmers do understand and do not use advanced techniques and methods in turmeric farming, this ostensibly reduces yield and increases cost, this was corroborated by an earlier study by Nwaekpe et al (2015) who said that spice farming in Nigeria are undertaken by farmers who have not had formal training on farming of spices being cultivated, they also observed that weeds have the tendency to bring about a decline in the yield of root crops of about 65% while also increasing labour costs with an estimated 25%. Majority of farmers sampled (100%) said they combine the cultivation of turmeric along with other farm produce as such often farm turmeric not exclusively, these experts also said have the tendency to reduce yield as the fertilizer and nutrients will have to be shared by the other crops in addition to the farmers attention divided across other crops.

On whether farmers are careful in determining the seedlings to cultivate, 17% of them said they are meticulous about the seedlings they cultivate and always take extra measures to cultivate improved variety of seedlings, however, they measure they use essentially preserving seedlings from previous harvests to be cultivated in subsequent seasons and not any form of organized formal effort to identify and cultivate improved seedlings. It was gathered that there is only one variety planted and cultivated in Plateau State.

It was also gathered that turmeric farmers do not have an exclusive association nor a platform for interaction and exchange of ideas and information among themselves or protecting their interests. 12% said they have interacted with and interrelated with other turmeric farmers that are mostly friends and relatives and obtained one form of support or the other in the course of cultivation, these supports include: obtaining improved seedlings, ideas on cultivation methods, market information, timing for cultivation and borrowing of equipments such as hoe, fertilizer.

3.3. Farmers Marketing Practices

On whether farmers are aware of market signals, market signals refer to issues and situations that are relevant to demand and supply, price, time, location and other relevant aspects that are likely to affect products availability when demanded for. Findings reveal that farmers are not aware of the importance of market signals as such they are not deliberate in identifying and using them. As such, they all farm without any form of market projections on demand, supply or price issues. Although 75% of the sampled farmers said they were inspired to venture into turmeric farming because of the price of turmeric in the markets and their understanding that when cultivated along with other crops, yields are not affected.

As regards determination of price, there are no structured methods of price determination, most times the forces of demand and supply determines prices, irrespective of the cost involved in production. 90% of farmers said cost determination is a challenge due to their illiteracy level, this is compounded by the mixed farming methods that makes it difficult to isolate costs of the different commodities farmed together.

As regards whether farmers keep records of buyers and follow up on them, findings reveal that they do not keep records on buyers as such don't follow up on them. It was observed that this is as a result of the lack of competition among farmers; the farmers are yet to meet let alone exceed demand for turmeric in Plateau State.

Category	Actors and Nature of Support
Finance	This is mostly gotten from processors and retailers in form of advance to facilitate the harvest and packaging of fresh turmeric for sell.
Purchase of products	Retailers, customers and processors purchase raw turmeric from farmers for their resell, consumption or respective processing activities.
Facilitate transportation	Retailers, customers and processors have over time provided transport facility through conveying turmeric of farmers from the farms to their destinations
Provide market information	Farmers rely on retailers, customers and processors to provide information although not in an organised and structured manner.
Trend of demand	Farmers obtain limited information from some business trainings which are not directly targeted at turmeric products though, and it has guided them in some aspects of demand projects
Best farming guidance	Researchers from a number of academic institutions in the course of undertaking researches have interacted with farmers and in the process supported them.

Table 1: Actors, Nature and Type of Support Farmers Get from Them

3.3.1. For Processing of Turmeric

Another key aspect of the market for turmeric in Plateau State is the processors; they are involved in converting freshly farmed turmeric into other forms, they also play the role of packaging. This value added activities are undertaken by some farmers, their immediate families, micro business owners, and other actors that use turmeric as inputs into their production activities such as restaurant owners, mats weavers, makers of dye and herbal practitioners. A number of people also process and use turmeric personally for their use. Generally, the value added activities here include, drying, grinding, pounding, packaging and preserving. While the output of processed turmeric includes forms as dried, powdered, spices, curry, capsules, packaged in nylon.

Majority (80%) of farmers involved in processing turmeric only dry it; they said that they undertake this activity to stop it from getting spoilt before purchase. Majority of them (100%) said that they undertake the drying of turmeric through manual methods of spreading under the sun to enable it heat and get dry, experts observed that although their exist mechanized methods which are neater and faster, yet the technology have not been localized largely because most of the actors might not be able to afford it. 75% of processors dry, grinding or pound it which are used for products such as spice, curry, turmeric powder, supplements, tea and colour turu.

Unlike the farmers, processors adopt some marketing practices that increase their returns and profit, findings reveal that 60% of processors have brand names for their products. As regards marketing outlets, it was gathered that 35% sell directly to customers, 65 % sell through retailers, among which 30% use multiple channels. Processors determine prices taking account of all cost associated after which they add a margin to arrive at prices. This price fluctuates based on the price of turmeric from farmers.

Available technology for turmeric processing is mostly manual and not evidenced based, only 2.5% of the sampled processors have an advanced technology which was self created. Majority of processors agree that they do not have any scientifically proven quality control measures beside the normal hygiene measures put in place to ensure the safety of the processed products for consumption, 100% of customers were also unclear as to any standard parameter for determining the hygiene level of turmeric, Nwaekpe et al (2015) have identified quality guarantee as important for processed turmeric to which they suggested that for best results, turmeric powder should be packed in a UV protective packaging and stored properly because its colour deteriorate with light and to a lesser extent, under heat and oxidative conditions, thus suggesting that there is the need for adherence to stipulated measures to ensure quality of processed turmeric beside conventional need to ensure proper hygiene practices.

Variety	Major Target Customers	Uses
Spice	Individuals and households, restaurants, eateries, food vendors, meat sellers (suya),	Usually placed to be added in small amounts to food to improve or adjust its flavour.
Curry	Individuals and households, restaurants, eateries, food vendors and meat sellers (suya)	Seasoning of food during cooking, added in smaller sachets
Turmeric powder	Individuals and producers of spices	Individuals use it for a variety of purposes ranging from including it as part of food, weight loss therapy, detoxification, immune boosting and for facial cleansing,
Supplements	Individuals mostly adults and aging	Diet supplement, weight loss, detoxifications and anti aging
Tea	Individuals mostly adults and aging	Diet supplement, weight loss, detoxifications and anti aging
Colour turu	Mostly producers and manufacturers of fabrics	Dying and colouring of fabrics.

Table 2: Varieties of Processed Turmeric and the Target Customers

Form of Turmeric	Method of Packing
Dried turmeric	Nylon, wrapped in papers
Fresh turmeric	Nylon, sacks
Powdered turmeric	Nylon, plastic containers, capsules
Processed turmeric	Nylon, plastic bottles, bowls & plates, capsules

Table 3: The Basic Methods of Packaging the Various Forms of Turmeric Include the Following

3.3.2. For Distribution of Turmeric in Plateau State

Two categories of turmeric are distributed viz: fresh and the processed turmeric. As with every other distribution channel, the value added activity involved is moving the commodity from the place of production to the final consumer. It was gathered that there is no structured or organized distribution channel for turmeric products. It was gathered that Local traders play key roles in the distribution of turmeric, they are involved in buying from farmers and selling at the local markets (80%), 8% of processors drop their products in stores for sell, while others hawk directly to customers 12%. Price for majority of distributors (90%) is a function of what processors fix, usually, they add a margin based on prices fixed by processors. It was gathered that selling directly to customer is more profitable as it attracts a profit of 40% per kg, as against selling through local traders who will buy at a discount of 10-15% to enable them make profits.

The study assessed whether or not distributors meet demand from customers. Findings reveal that 55% of respondents always meet customers' demand, while 45% said they don't. Discussion with respondent reveal that demand for powdered, dried and processed turmeric is usually difficult to meet, this is because of the processes of getting the turmeric dried, processing them and converting them to powdered and packaging involves a number of activities that consume time, as such retailers will have to wait for processors to make it available to them. Retailers identified weak capital base to stock large quantity of processed turmeric in anticipation of demand from customers. The inability to meet demand is exacerbated by the relative high cost of processed form of turmeric as compared to other forms.

3.4. Interrelationships between Actors in Production, Processing and Distribution in the Turmeric Market

Viability of markets has a lot to do with the nature of interactions between actors involved in production, processing and distribution activities. Hence, the study gathered that there is no structured, formal or organized pattern of interaction between the various actors in the production, processing and distribution in the turmeric market. However, support with finance, purchase of products, facilitate transportation, provide market information, trend of demand and best farming guidance are some of the bases for interaction between producers-farmers, processors and distributors in the market.

Relationships	Benefits
Relationship and Relevance of Retailers to Processors	Information on type of product more demanded for; information on trend of demand; Information on customer complains; provide trade credit to retailers; support Processors with finance; packaging of product.
Relationship and Relevance of Retailers to Farmers	Packaging; information on trend of demand; information on customer complain; trade credit; support farmers with transport
Relationship and Relevance of Retailers to customers	Provide turmeric product information; provide information on uses of different forms of turmeric; trade credit; transport services.
Relationship and Relevance of Retailers to collectors	information on trend of demand, information on prices consumers are willing to pay, provide finances, support transportation

Table 4: Relationships between Distributors Various Stakeholders in the Turmeric Market

3.5. Constraints and Challenges Faced by Actors in the Turmeric Market in Plateau State

Findings reveal different challenges for different actors in the turmeric market as follows:

For producers-farmers: 10% said market is a challenge, 11% said capital is a challenge, 8% said rains, 29% said fertilizer, 35% said transportation and none said that availability of seeds is a challenge.

For processors: 11% said lack of market information; 13% said lack of packaging materials; 14% said no NAFDAC number, 26% said inadequate capital; 11% identified lack of transport facilities, 5% identified inconsistent supply of raw materials, and 20% identified lack of processing equipments and machines.

Distributors identify the following challenges: 16% identified capital; 13% regulatory agencies; 12% transportation; 9% shop facilities; 12% location, 21% competition with bigger retails and 17% lack of storage facilities.

S/N	Name	Potential Support	Ways They Presently Support The Turmeric Value Chain
1	National Root Crop Research Institute	Trainings, provision of seedlings, pesticides and best practices for the product	A number of researches with findings and recommendations have been undertaken, although not specifically on turmeric, but other root crops, as such turmeric being a root crop stands to benefit immensely from these researches
2	All Farmers Association of Nigeria	Networking platform for farmers for advocacy to government and relevant stakeholders, jointly collaborate to access support from supporting agencies.	They have cluster on a number of agricultural produce, but do not have any on turmeric, turmeric farmers have not identified and clustered themselves to obtain support on turmeric.
3	Plateau Agriculture Development Programme	Can facilitate specific government intervention on turmeric with adequate advocacy and awareness among government on high demand for turmeric.	They are aware of the existing raising demand for turmeric and have collated some literatures and research findings relevant to turmeric, although they are not formally documented and disseminated, they make it available to individuals interested in it.
4	Federal College of Forestry	Can provide best practice approach to turmeric farming. They can also provide insight on where turmeric can be cultivated and train farmers in that regards.	Do not have any deliberate effort targeted at supporting turmeric farming.
5	University of Jos(Department of Plant Science and related departments)	Possibility of undertaking researches and disseminating findings on turmeric plant, Relevant business and marketing departments can also undertake research on its existing demand pattern and disseminate such among the public	A number of researches in this regards have been undertaken, however, they are not being documented nor disseminated, as such tracing and disseminating them is still a challenge.
6	ASTC	Providing training and capacity building for turmeric farmers, can also provide necessary equipment and machines for farmers.	They are not currently implementing NY turmeric specific capacity building.
7	Fadama II Project	Turmeric can be a focal product if sufficient evidence and advocacy is undertaken on its importance and relevance as a product with enormous potential.	No effort directed at turmeric, however, the experience and capacity gained from the project by farmers involved can be extended to turmeric.
8	Departments of the Plateau State Polytechnic	Possibility of undertaking researches and disseminating findings on turmeric plant, Relevant business and marketing departments can also undertake research on its existing demand pattern and disseminate such among the public	A number of researches in this regards have been undertaken, however, they are not being documented nor disseminated, as such tracing and disseminating them is still a challenge.
9	Technology Incubation centre	Design of equipments, tools and machine that can be used to facilitate activities at each stage in the turmeric value chain, from farming to processing	Have innovated a number of tools and equipments that are being used to process turmeric into a number of products.

S/N	Name	Potential Support	Ways They Presently Support The Turmeric Value Chain
10	Industrial Training Fund	Enhance the capacity of actors in the value chain	Does not have any deliberate policy or efforts targeted at the value chain.
11	Plateau State University Bokokos	Possibility of undertaking researches and disseminating findings on turmeric plant, Relevant business and marketing departments can also undertake research on its existing demand pattern and disseminate such among the public	A number of researches in this regards have been undertaken, however, they are not being documented nor disseminated, as such tracing and disseminating them is still a challenge.
18	Micro Finance Banks	Loans and grants to MSMEs	They can prepare a special package targeted at MSMEs.

Table 5: Institutions are involved in Plateau State and Extent of Their Relevance

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