

Informal Markets and Market Information on Farming of Agricultural Produce in Kenya a Survey to Selected Lake Region Economic Bloc Counties

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Abstract: *Approximately 70% of the Kenyan economy is contributed by the agricultural sector which is comprised of the 80% of small holder farmers. In Africa, the agriculture sector remains one of the central economic sectors for the continent's social economic growth, employing most of the population at 14% of GDP in sub-Saharan Africa. In Kenya, agriculture is incontrovertibly the pillar of Kenya's Economy considering its massive benefaction to the national Gross Domestic Product (GDP). Even though the strategic plan of Vision 2030 acknowledged agriculture crucial to delivering sustainable social economic growth and improve quality of livelihoods for peasant farmers, it undergoes restrictions at the international, counties, and at the national level that necessitate distinct consideration. Poultry and aquaculture are indispensable to food production for many deprived families and is generally adopted at farms previously practiced as subsistence farming. Under old market regimes, occasioned by failure to reflect market intelligence, lack of quality services, intermediaries, and unfair competition, it calls for proper understanding of the market structure from production up all the to the end consumers This study therefore will assist in identification of key determinants of commodity supply and marketing for possible programming support and policy guidelines. The research was steered by means of descriptive research design and the data was put together using feedback forms. The feedback forms were self-managed for the farmers. The data was evaluated using Statistical Package for the Social Sciences software (SPSS) and communicated through tables. The variables were correlated using statistical methods. The findings from the study illustrated the contribution of informal markets and market information have enormous impact to farming of agricultural produce.*

Keywords: Small Holder Farmers, Livelihoods, Food Production, Market Structure, market

1. Introduction

Agriculture is considered a major backbone to economic growth: accounting for approximately 4% of international gross domestic product (GDP) and in many developing countries accounting for more than 25% of GDP (world bank 2021). This presents about 60% of the world's land as arable. Considerably, Africa has the budding to not guarantee her own food security but to a large extent feed the world. Agriculture sector remains one of the central economic sectors for the continent's social economic growth, employing most of the population at 14% of GDP in sub-Saharan Africa (The Agriculture in Africa 2021). Back in Kenya, the agriculture is incontrovertibly the pillar of Kenya's Economy considering its massive benefaction to the national Gross Domestic Product (GDP) which has been decreasing gradually from 40 percent in 1963, to 33% in the 1980's and 27% in the year 2014 according to (KNBS, 2015). Nevertheless, the performance of the sector continues to top the rest of the sectors in the whole outlook of economic performance for the country. The sector illustrates approximately 60% of the forex exchange in Kenya with about 16% representing opportunities for jobs through self-employment (KNBS, 2015). Ultimately therefore, there is increased collaboration between the growth of the national economy and advancement in the agricultural sector. Nearly 15% of the Kenya's over-all land area is productive and has sufficient rain distribution to augment farming yet about 1/3 of the available arable land is grouped as ideal for agricultural activities. Small holder subsistence farming accounts for nearly half of total cultivated volumes in metric tons which is marketed and non-marketed but within the available channels. As per the Vision 2030 under economic

pillars, Kenya pursues to amass a continuous development of 10 percent every year. This is considered important in accumulating supplementary resources to apprehend continuous growth. Provisions of Vision 2030 underpinned the importance the agriculture sector in a bid to realize the 10% growth proportion (Government of Kenya, 2007). By the year 2004, the Government of Kenya flung the Revitalizing Agriculture (SRA) strategy to inform strategic investments gainful to all the actors within the value chains. This gave an opportunity to private & public organizations on in what way to deal with the bottlenecks bedeviling the sector. The strategy was considered efficacious as the agricultural sector grew by 6.1% in 2007 (Government of Kenya, 2010). Consequently, the Agriculture Sector Development Strategy (ASDS) followed the SRA whose target was a twelve-monthly growth rate of about 10% and hence realization of the vision 2030 in those aspects as anticipated. Within the ASDS, the agricultural sector is envisaged to adopt conventional approaches and technologies to scale up agriculture and significantly improve productivity. The government must also guarantee institutions offering business development services to small holder farmers since they are more robust in terms of leadership/governance and management practices. As per the Vision 2030, On the other hand, population growth has been constantly going up whereas the areas shielded by forest cover have been decreasing. For many years tree growing has been on the decline pattern (Government of Kenya, 2007). General land management and subdivision aspects present extra barriers in agriculture. The farms existing for farming is plundered especially by the small-scale farmers in Kenya and has gradually been reducing by size every year. Dry lands considered arid & semi-arid (ASALs), land in

highland areas continue to be underutilized for agricultural activities.

Kenyan Agricultural sector has since immemorial been dependent on rain-fed agriculture for production. Nonetheless, there has been a bone of contention between factions for several years because of global climate change which is not unforeseeable and equally attributable to natural calamities like famine, torrential rains, and landslides. Overall, there is an adjacent connection relating to rain and agronomic output as it influences efficiency in numerous regions in Kenya. It is estimated that only about a 1/3 of land in Kenya is suitable for farming (World Bank Group, 2015). Agricultural land, in this milieu, is expressed as the segment of land that is suitable for farming and under perpetual production. Farming plays a significant position in achieving the global objective of nutrition requirements, reduction of adverse poverty and supportable farming especially amongst peasant farmers in growing economies. (Altshul 1998) and (Makhura 2001) persuades that the marketplace for peasant farming is restricted by impoverished road systems, marketplace gaps, inadequate transport tools, infiltration of intermediaries, and insufficient intelligence on market data. A study conducted by M/S Deliwe and Jason (2013) designated that the social economic bottlenecks confronted by peasant farmers encompass lack of reliable transport system, fickle and volatile market data, nonexistence loading features, biased and unhinged cost of input and failure to access quality markets.

In research finding led by Bernadette (2013) focusing challenges concerning farming of horticulture, it was pragmatic that peasant farmers consider informal systems as repressive and generates revenue from own transactions than from ordinally farmers. A handful peasant farmers were trading openly with the export market while others sold to intermediaries at the farm level. Farmers who sold directly to exporters were established to be making quality income others that traded with intermediaries. Consequently, mostly road systems were depicted in deplorable state in terms of installation and maintenance. The small-holder farmers suggested that such deplorable systems had a correlating impact to market convenience for farm produce and hence a possibility of increased income by upgrading the infrastructure networks.

About Poultry and aquaculture farming, very little effort has been made in terms of research although they are considered 5th most important farming enterprises, in terms of output per squire area and practicing small holder farmers. Although poultry and aquaculture can be practiced in diverse climatic conditions, it is predominantly practiced in lowland regions with minimal rain and less extreme weather. These identified regions are inappropriate to produce other crops unless supplementary irrigation is available (FAO, ICRIAT 1996).

Even though the strategic plan of Vision 2030 acknowledged agriculture crucial to delivering sustainable social economic growth and improve quality of livelihoods for peasant farmers, it undergoes restrictions at the international, counties, and at the national level that necessitate distinct consideration. Poultry and aquaculture are indispensable to

food production for many deprived families and is generally adopted at farms previously practiced as subsistence farming. Poultry and aquaculture can do well with a sea level of about 2,500 meters and which in the end necessitates at least 250 mm of rainfall yearly and an unadorned least temperature of 10 degrees Celsius (Chemonics, 2010).

The Economy watch, (2010), growth in agriculture revolutionizes the industry by bringing profitable agriculture and environment friendly resolutions. It involves giving support to farmers by means of diverse resources. This is through the establishment of protection, research assistance, usage of technology, control and management of diseases/pests and enabling the section of modification. In the ancient the Kenya government through the Ministry of Agriculture and Livestock, have tried to license information to the farmers via agricultural extension officers (Munyua, 2000).

But the value of information distributed to the farmers has not been updated, information delivery has not been virtuous, the approach of messaging also has been disputed owing to mastery levels of farmers and the extension teams, information technology has not been incorporated wholly making it grim for our farmers to improve with their colleagues in other parts of the globe.

The performance of Kenya's economy has heavily depended on farming since independence. According to study findings conducted by Giger et al. 2020), it stipulates the part they play in upholding the nation's food stream and making up 89% of all producers remain the lowliest sector in Kenya. Correspondingly, farmers are endowed with options when it comes to marketing their produce, but the question still lingers whether market information and informal markets have any significant stimulus on farming in Kenya. More than 75 % of the outputs in the LREB are produced by small scale farmers with about 2.5ha on average each, producing mainly for home-consumption, and using traditional technologies.

According to Thomas, 2006, the farming market systems are inefficient and fails to satisfy the needs of the producers due to varying reasons including lack of appropriate coordination of market roles. According to Muthini *et al.*, (2020), it should be clarified that if farmers do not influence farming, they will not be able to market or trade their produce appropriately, and in the end loose potential return on their investment. Studies have been done on various aspects that play a role in the promotion of farm produce by farmers, but there have not been several done on the peasant farmers. Even though gaining data from farmers, linking farmers to the market, and road structures are indispensable and central aspects in farming, the study focused on these influences and their impression on smallholder farming according to FAO (2005).

According to economy watch (2010), anticipated growth farming will transfigure the industry by introducing money-spinning enterprises and eco-responsive resolutions.

The research, consequently, identified aspects that influence the output of farm enterprises with definite focus to LREB

region. Emphasis was on how farmers get data hence extension skills was reanalyzed and reconsidered to espouse all characteristics relating comprehensive collection of market data and communication. It is acknowledged that provision of extension services entails a lot in recommending farmers on enterprise services and contains prearranged events that provides in-depth insights and increase value to the over-all good of the farmer. Desired attention is recommended to ensure capacity building of key service provision employees in the extension services to allow farmers access worthwhile data that includes entirely the facets of Agri-enterprises that array from horticulture and livestock farming, excellence varieties and mixtures, grange inputs, farm administration and advertising, in addition to acceptance of management information systems.

The study was examining the effects of informal markets and market information by farmers in farming Poultry and Aquaculture produce in LREB.

2. Literature Review

The research is affixed on the Vroom's (1964) Valance-Instrumentality-Expectancy theory or expectancy theory. This illuminates the development as a strength established by triad components which bring together in a symbiotic process. The hypothesis declares that the concentration of a propensity to operate in a distinct approach is contingent on the strength of a probability that the operation was observed by a significant consequence and on the influence of the consequence to the human being. On the other hand, expectancy theory defines that worker's incentive is a consequence of how much an individual desires an award, the valuation that the probability that the determination will lead to predictable performance and the credence that the routine will lead to reward. In brief, valency is the magnitude connected to an individual about the projected result. It is a forecast and not the obvious pleasure that an employee anticipates receiving after accomplishing the goals. Anticipation is the assurance that improved endeavors will lead to improved execution. Thus, the expectation is the principle that one's work will result in achievement of performance objectives.

Instrumentation is the belief that if one accomplishes the prospects, he will attain a greater inducement. The VIE theory proposes that fundamental relationships transpire between procedures and the quantities of expended activities, performances, and allocated awards. Lawler, Porter and Vroom (2009) people have distinct series of goals and can be persuaded if they believe that. The underlying principle behind the use of expectancy theory in this survey is essentially to estimate the impetus for market involvement by small scale farmers. Since market participation is intended to bring about expansion in farm income of farmers, it therefore observes that convenience of enabling environment could be supported by cooperative farming societies; farmers was encouraged appropriately to deliver for the market.

The Empirical Literature on informal markets and market information are now fast emerging as key determinant of farming of agriculture produce in Kenya. The availability of

extension services, a crucial component of the range of farming and non-farming actors that offer critical flows of farming and market information and can enhance the welfare of farmers and other rural people, encourages agricultural farming in the global arena. Agricultural consulting service has made a significant comeback to the international development agenda after a period of absence. In addition to their traditional role of providing information for increased agricultural productivity and serving as agricultural advisors, they also perform several new tasks, such as connecting small-scale farmers with extraordinary worth and international markets and encouraging eco-friendly production methods (Jilito & Wedajo, 2021). The study conducted by Odoh *et al.*, (2019) in the Benue state of Nigeria for Farming of Poultry and Aquaculture commodities revealed that Poultry and Aquaculture farming is predominantly male and that poultry and aquaculture farming in the study area relishes higher benefaction derived from the youth who are spirited to withstand the stress involved in the business. In the research area of Nigeria, most poultry and aquaculture farmers were literate enough to allow for efficient communication while doing their businesses. The structure of the poultry and aquaculture farming in the research region allows for freedom of movement, easy access and exit, and easy purchasing and selling of poultry and aquaculture. Snell, (2020) in research on poultry and aquaculture market amalgamation in Ghana proposed observation of the unpredictability in supply and charges factors affecting capacities and whether the market was cohesive. 160 respondents were included in the author's sample. The study demonstrated that there were no barriers to entry for the field of poultry and aquaculture farming, which was dominated by private individuals. According to KIRDI report, Ratnavathi & Komala, (2016) conducted research on rapid market appraisal on poultry and aquaculture, competing value-added poultry and aquaculture commodities in Nairobi and its surroundings. In farming literature, the term "informal markets" is commonly referred to a precise consortium of market actors, primarily informal markets or dealers who are well-known in the industry. One significant issue is that the term "middleman," or "broker," is frequently used to refer to persons who play very distinct functions in the market system Ono (2018). Despite the economic service they offer, informal markets and trading entrepreneurs that connect smallholder farmers in rising nations to developing marketplaces locally and universally seem to be largely loathed. Without their resources and specialized skills, small-scale farmers and home-based craftspeople in urban slums might not afford the extreme costs in developing marketplaces. They undoubtedly contribute to reducing poverty by bridging this gap, although for financial gain. Yet it is this profit-driven argument and the assertion that these informal markets generate disproportionate profits because of market dominance (Ono, 2018).

Across the world, informal markets have a terrible image, but this is factual in the sale of agricultural products in developing nations. It is believed that intermediary's prey on farmers by giving prices well lower than the cost of production, mostly by taking advantage of their presumptive monopolist status and the producers' weak negotiating ability (Thapa and Pokhrel, 2007). As a result of his actions, the

middleman is frequently called into question by producers, NGOs, and policymakers as they are believed to be exploiting the less fortunate producers.

Even after border fees are considered, Foster & Kreitzman (2017) found that cashew cultivators in Mozambique only obtain 40% to 50% of the equilibrium costs. Also noted is this. "It is obvious that the raw cashew nut distribution channels continue to be imperfectly competitive. In addition to transportation and farming expenses, middleman dealers' market dominance also has a negative impact on farmers' profits ". Miller (2018) argues that because farmers have limited understanding of marketplace values, the idea or setup of informal markets is encouraged.

According to Yoshida (2019), who conducted a different study, it is unlikely that intermediaries will achieve extremely high profits unless they operate in a highly competitive market. Informal markets attempt to regulate marketplace values by lowering their marketplace edge when retail and producer values are high and attempt to maximize their profits when prices are low by raising their market margin (Kim & Takashima, 2018). Yoshida, (2019), pointed out that some informal markets are dishonest, just like in other industries. Finding unorganized markets with a strong reputation and ensuring that the farming structure limits potential for dishonesty present challenges. According to (Dos Santos *et al.*, 2021), some farmers and informal markets may create new opportunities by granting access to specific market segments. The progression of allocating marketplace dividends is concurrently complemented by disregarding and segregation because informal markets might place unreasonably elevated hurdles to growers when it comes to short term and long-term investments required for farming.

To restructure the subsector, linking farmers to markets is required, according to Kisumbi *et al.* (2021), because dishonest informal markets dominate the agricultural market/farming in general. Bukenya (2017) discovered that because of the high transportation expenses, farmers who must travel significant expanses to the marketplace and solitary supply modest quantities of goods are extra expected to sell their commodities to informal markets at the farm gates than to customers directly. Being placed further from the market may also make it more difficult to obtain knowledge about market prices, increasing the possibility of monopolistic traders exploiting producers.

Nevertheless, if there is competition among intermediaries, their bargaining capacity would be diminished as farmers would partake additional opportunities to sell their crops, lessening the likelihood that they were exploited. (Thapa and Pokhrel, 2007) investigation of the selling of mandarins in Nepal was unsuccessful in finding evidence to support informal markets taking advantage of producers. Additionally, this is what several geographically diverse studies of agricultural markets have found (Nwafor, 2020). Coca Morante *et al.* (2021) observed, however, the function of intermediaries a complete bearing on farmers given exhaustive attention when strategy outlines for countryside expansion was determined in a report on potato farming in Bolivia.

According to Mora (2019), informal markets are commonly considered as "parasites," meaning that they don't create something genuine, like a product or a service, and therefore don't generate affluence or worth. Those who favor the position of informal marketplaces contend that they are responsible for transferring things from producers to end consumers and for bridging the gaps in time, space, and possession that exist between those who make goods and services and those who need or desire them (Indrapriyatna *et al.*, 2020). To support consumption, production, and the growth of competition, informal markets play a crucial role in value chains.

Informal markets have the responsibility of minimizing the spell-pendant loss that arise when representatives' obligation look for a trade companion. The job of informal markets, according to Watanabe (2017) in informal markets visible market maker's, goes beyond reducing market frictions. It also involves connecting producers and consumers, fixing prices for competition, and keeping inventories to balance trade imbalances between producers and consumers. For instance, this, Pousttchi & Gleiss (2019) in the findings of informal markets and farming, consider the responsibilities of informal markets as of worth to equally revelries involved, both symbiotically beneficial.

Despite the contribution of farming to development and growth, smallholder growers have persisted underprivileged and have insufficient access to markets. According to Jozwik and Cuenca-Carlino (2019), because small-scale farmers have limited access to farming information, they are abused and don't receive a reasonable part of the ultimate purchaser value. Rural farmers mostly learn about farming from other growers over viva-voce, radio, & sporadic consultations with extension representatives and village leaders; they also occasionally learn about farming from magazines and newspapers (Isaya *et al.*, 2016). They claimed that because there are few of them and they are mostly based in urban areas, growers do not engage with service providers very often. Rural farmers are taken advantage of by other actors in the chain due to poor access to farming information. The prices of their products at faraway markets are sometimes unknown to rural farmers. Additionally, they frequently are unable to transport their produce to far-off markets due to inadequate road infrastructure and budgetary limitations. Due to their limited access to information, informal markets and traders regularly visit farmers on farm and regional marketplaces to make purchases produce at farmgate. Farmers characteristically base their negotiations on the prices offered by traders or informal markets. Farmers are defrauded by traders and intermediaries who profit from their ignorance of available price mix, poverty levels, and lack of collective strength because of analphabetism and little societal position. Market norms are frequently disregarded by intermediaries, and their pricing is opaque. Shah (2018) discovered that outlays in relations of period and properties, an absence of data, and a lack of farming method understanding all restrict access to farmers' markets. Farmers may not receive farming information that is intended to accomplish its goals. Instead of information on wholesale pricing, farmers appear to be extra attracted to stint explicit and dependable best-off farm, on lorry, and merchandizing fees of the closest and most important

adjacent markets.

According to farmers in the Zambia, data required for smallholder farmers to make decisions incorporated overall cost of input for a certain farmhouse product, probable marketplaces, commodity market stability, availability and price of inputs, and anticipated transportation costs for inputs (Nugroho, 2021). According to several studies, farmers that take advantage of valuing data facilities might also be absorbed in other data such as climate predictions, guidance on horticulture farming, and the application of suitable inputs for production. The volume of poultry and aquaculture that was sold was influenced by information about price. According to the above author, farmers who receive information on market prices for their commodities made more money than those who did not receive such information for poultry and aquaculture products. Gyeltshen and Osathanukul (2018) suggested there is a strategy to connect growers to marketplaces by enhancing set-up systems, like adoption of artificial intelligence that links peasant farmers to marketplaces, lowering transaction costs, and limiting risk. Kumar & Singh (2018) insisted on the use of technology to connect farmers with market information to promote the proposition.

3. Methodology

The study population was comprised of 212 households which are involved in Poultry and Aquaculture production in LREB Counties of Kakamega, Siaya and Kisii which were selected based on investment prioritization of counties in the CIDPs, modelling of the market system for the specific value chains, organization of farmer organizations for collective production, press publications on agri-business in the regions and marketing and the poverty index of the specific regions. The target population for this study included farmers, officers from the ministry of agriculture and agricultural extension officers. Quantitative information analysis method was adopted to evaluate the information collected. This will include inferential (correlation and regression) data analysis. SPSS version 21 was adopted to analyze quantitative data in the study. Resource mobilization, partnerships for innovation, capacity- building approaches, and stakeholder mobilization was verified exhausting multiple linear regression (Economic Development).

The research selected a total of 138 respondents from Poultry and Aquaculture smallholder farmers one per home to the residents from 3 Counties in LREB Region. A total of 133 feedback forms were gathered back, and they were used for the examination purposes only, a 93.3% overall reply rate. This % rate of return was made possible by extensive awareness expanded in the ground throughout the pilot. All sections in the data collection tool were all answered back. Amin (2005) acclaims reply frequency of more than 65% is ideal and therefore the response frequency of 93.3% in this study was generally acknowledged. The male smallholder farmers formed bulk 71(53.3%) of the interviewees while female smallholder farmers enterprises were the marginal 62(46.7 %). Of the 133 respondents, 8(6%) were within the range of 15-25, 6(27.1%) while 26-35 was within the years of age. About 43 (32.3%) were between 36-25 years of age, 29 (21.8%) 46-55 years and those aged 56

years, and above at 17 (12.8%).

Those identified to be less than 5 years of experience were the minority 20(15%), while the bulk comprising of 43 (32%) had between 6 to10 years of smallholder farmers farming experience. Those between 11 years and 15 years of experience 40 (30%) and those had smallholder farmers 16 of experience and above was 30 (23 %). 56 (42%) had primary level education, 40 (30%) had secondary education. Finally, the college education had 27 (20%) and the minority representing 10 (8%), had university level. 69 (49%), strongly agreed to the presence of the market brokers while 39 (29%) agreed on their existence. As low as 9% strongly disagreed on the existence of the market brokers. Few respondents 86(65%) use TV programs for farming and market information while 15% were not sure as to the source of their market information. About 5(3%) strongly disagreed that the TV was their source of information. On the use of the word-of-mouth communication to know what is happening in the farms and markets, 76(57%) alluded to the word-of-mouth communication being a key tool in providing market information while only 2% strongly disagreed but a whopping 12% were not sure. On utilizing radio for information about farming and market happenings, a commanding 58% which is 77 respondents confirmed that the use of radio for market information, 10% of the respondent were not sure of the source but 23% agreed but with reservations. 52% which are 72 respondents affirmed that the ministry extension officers provide value information about farming information, while 8% strongly disagreed. 13 respondents representing 9% of the respondents were uncertain about the use of extension officers for market information. With the growing use of artificial intelligence, 84(63%) strongly asserted on having adopted faster internet that has improved communications with market, 5 % disagreed while 12% were undecided.

4. Conclusions

From the research, it can be clinched that most of the farmers dealing with Poultry and Aquaculture farming are youthful male. It was evident that most of them have primary level education. The outcomes further claimed that smallholder farmers use informal marketplaces to sell their commodities although it is not lucrative. It was also noted that they sell to informal markets because of convenience. This is as a result of informal markets having resources to transport Poultry and Aquaculture commodities in huge volumes and they facilitate connections amongst VC actors. About admittance to availability of market info, it was pragmatic that most of the smallholder farmers use TVs to access information about market, this is according to most of the smallholder farmers engaged. The reason being that smallholder farmers find TVs to be dependable and reachable to all individuals. It's also seen that development in admission to data will also have a constructive influence on farming.

The study recommended a need for Poultry and Aquaculture producers to be capacity built on overall market dynamics. This is expected to reduce or eradicate informal markets considered exploitative to the smallholder farmers since they will accumulate collective bargaining power.

Lastly, the study recommends that all the national agricultural policies and guidelines to be domesticated at the county level as anticipated through devolution to ensure county level strategies and frameworks that will promote development of the agriculture sector. Notwithstanding the conclusions of this research, there are some areas which require to be researched in relating to Poultry and Aquaculture farming by smallholder farmers. The research recommends supplementary studies to be conducted on extra influences inducing agricultural production among smallholder farmers such as Market infrastructure; Competition; and technology. Consequently, in-depth research could be carried out in a diverse zone dealing with Poultry and Aquaculture production.

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