

# Roots and Tubers Market Expansion and Inclusion through Marketing Extension Services: A Conceptual Framework

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## Abstract

This study developed a conceptual framework for the expansion of markets and inclusion of farmers in the marketing processes through agricultural marketing extension services in Nigeria. It identified the role of marketing extension services towards market expansion and inclusion of farmers, effects of marketing extension of market expansion and inclusion, of root and tuber crops farmers and developed a framework for market expansion and inclusion of root and tuber crops farmers through marketing extension. According to the framework, it is expected that when the intervention is properly implemented on the roots and tuber value chain actors there will be an intermediate outcome (increased market awareness, access to market reliable market information and increased market participation). The intermediate outcome will further lead to the final outcome which are demand driven production, easy and fast means of disposal, market access, expanded market, farmers inclusion, increased income, and increased food security. It is therefore concluded that agricultural extension is no longer confined to agricultural production alone but includes other tasks such as marketing of agricultural and rural products, consultants, advisors and facilitators of the farmer learning process. It is therefore recommended that government should develop, support and promote training in marketing skills and services for agricultural marketing extension workers.

**Key Words:** Roots and Tubers; Market Expansion; Market Extension; Conceptual Framework

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## 1. Introduction

A good proportion of the food produced for human consumption across Nigeria is lost because of lack of structured markets, inadequate post-harvest management, inadequate storage in households and on farms, and limited processing capacity. Moreover, linkage between farmers' group and credit institutions are poor. This is because effort to increase production is not linked with marketing. With perishable crops like roots and tubers, storage, packaging, transport and handling technologies are inadequate hence, considerable amount of produce are wasted. Root and tuber crop farmers live mostly in the rural areas and most often do not have access to information regarding prices in urban areas/markets.

Poor quality road networks present another major issue for growers, wholesalers, and retailers of root and tuber crop produce in the state; they suffer significant losses due to lack of fast and dependable transportation infrastructure to move produce to markets. There is information asymmetry between buyers and sellers to facilitate movement of the products from place to place. There is also a problem of grading and standard weight measurement resulting in erratic price setting and movement especially as produce are delivered to the consumers from the village by the middlemen (Solomon et al 2019)

### *1.1 Concept of Agricultural marketing extension*

Agricultural marketing is the commercial functions involved in transferring agricultural products consisting of farm, horticultural and other allied products from producer to consumer. It includes all activities involved in moving agricultural produce from producer to consumers through time (storage), space (transport), form (processing) and transferring ownership at various levels of marketing channels, (Shakeel-Ul, Selvaraj and Syed 2012). Similarly, Adesina (1995) opined that agricultural marketing comprises all functions and agencies who perform the activities of satisfying consumer wants, thereby helping to achieve organization's long range goals and objectives through input, production, distribution, consumption and regulation while Ezirim (2003) sees agricultural marketing as the exchange of agricultural products and money that are desired by the consumer and farmer respectively.

More elaborately, FAO (2011) asserts that the concept of agricultural marketing extension covers a range of economic, social, technical and legal services that provide technical know-how about how to improve quality, quantity and timing of production, etc., information related to economics, business management and markets, know-how to enable value chain actors to meet market or value chain quality requirements, capacity development for strengthening producer and other value chain actor groups, and support to facilitate linkages among different actors along value chains. The service focuses on helping farmers make good economic decisions on the production and marketing of roots and tubers, vegetable crops, fruits and other fresh produce.

Similarly, Abbott (1985) and Narayanan (1991) explained that marketing extension involves the dissemination of needed information on marketing to producers which implies that farmers will be advised on consumer preferences, grading, packaging, transport, etc., in order to help them to secure better returns. Also, Agbarevo and Obinne (2010) opined that agricultural marketing extension is fundamental to agricultural produce marketing and a process of training the farmers on best ways to acquire farm inputs and distribute the output to maximize profit.

Gebremedhin, Jemaneh, Hoekstra, and Anandajayasekeram (2012) maintained that agricultural marketing extension is the total efforts extension officers put to increase market orientation (Market orientation is a production philosophy that focuses on consumers' taste, preferences and satisfaction as its basic production and marketing objectives) and market participation of farmers. Therefore, marketing extension refers to the total effort of: advising and supporting farmers to produce profitable market-oriented commodities and adopt appropriate technologies and practices, collecting and communicating market-related information, identifying profitable markets and buyers, and linking of farmers to buyers, building marketing capacity of farmers and facilitating organization of farmers to conduct collective marketing of their produce.

However, marketing extension is the market ward orientation of agriculture through extension which includes agriculture and economics as the perfect blend for reaching at the door steps of farming community with the help of appropriate technology. It should follow certain key principles which include resource-based, consistency with business principles, commodity development approach, based on the value chain framework, and bottom-up and participatory.

### *1.2 Agricultural marketing extension services*

Agricultural marketing extension services are knowledge services which assist small- to medium-scale farmers and other actors in agricultural value chains to increase their access to markets and secure benefits from commercialization. They are series of activities that assist farmers gain better access to markets and reduce losses by making informed production decisions, prime of which is production according to market requirements, products specifications, varieties, and time (Narayanan, 1991). Olukosi and Isitor (1990) and

Kohls (1985) added that agricultural marketing is the performance of all activities which direct the flow of goods and services to the consumer from the producers (farmers) in order to accomplish the producer's objectives.

Abbott (1985) and Narayanan (1991) share a similar view that marketing extension provides information on the post-harvest treatment of specialty crops and provides an important service in countries trading in food crops, including such perishable products such as roots and tubers. According to them, it is aimed at improving the preparation and process of moving agricultural goods to market. They include packaging, storage, transportation, pricing, financing, risk bearing and even product design. They also observed that agricultural marketing involves all those physical, legal and economic services, which are necessary to make products from the farm available to the consumers. Thus creating of form, place, time, and possession utilities is derived from agricultural marketing (Olukosi and Isitor 1990).

Marketing extension services are very much important as farmers become market oriented. In such situation, extension agents should be in a position to advise them not only on how to grow crops but also on how to sell them. Shrestha (2011) maintained that market extension agents should advise farmers on product handling (collection and processing), grading and standardization, packaging, transportation, storage, financing, risk bearing, market intelligence and selling/distribution.

In the view of Solomon et al (2019), extension agents provide marketing training to groups and individuals. This includes training in production and marketing systems, constraints and opportunities, market demands (products and service) and how to assess whether products can be supplied profitably. The benefits of providing producers with this type of training are that it develops their capacity to analyse markets for themselves and therefore allows them to respond to changing market opportunities and threats. They are not dependent on the extension agents to identify marketing opportunities for them in the longer-term.

Market information service is the service operating by either public or private sectors. The service collects information involving prices and quantities of traded agricultural products from rural assembly markets and then disseminates information on a timely and regular basis by media to farmers, traders, government officials, policy makers and others including consumers (Giovannucci, Daniele, Shepherd, Andrew 2001). It enables farmers to make informed decisions about what to grow, when to harvest, to which markets produce should be sent and whether or not to store products (FAO, 2006).

Hassan *et al* (2013) observed that, agricultural market information to small scale farmers in Nigeria is provided by the ministry of agriculture through the Agricultural Development Programmes's (ADPs) field level extension staff and by the broadcasting media. Mean while, Tiago and Yen (2007) have argued that farmers can have access to market information from several sources which are formal and informal. Accordingly, the formal sources are implemented by government agencies' staff such as extension agents, market experts, newscasts and broadcasts, internets, newspapers, magazines among others. Informal sources are provided by individuals such as other farmers, companies, agro-processors and non-government organizations (Le Van, 2013).

From the foregoing, marketing extension services is concerned with all stages of operation which aid the movement of commodities from the farm to the consumer and these include assemblage of goods, storage, transportation, processing, grading and financing of all these activities. It therefore involves all the business activities carried out for the flow of goods and services from the point of initial production until they reach the ultimate consumer. In this regard, agricultural marketing includes activities related to rural credit, insurance, agricultural input transportation, processing and storage of agricultural products, legal activities related to land tenure, land reform, quality control, subsidies and collective activities of farmers such as cooperatives and farmers' organizations. For the farmer, the strategic function of a marketing system is to offer him a convenient outlet for his produce (Solomon et al 2019)

In the views of Bakri, (2014) and Aziz, Edan and Mansur (2009), agricultural marketing extension plays an important role in agricultural marketing which include assisting farmers to get organized as a group, make market information available, approach the private sector to assist in solving transportation problems, help interface with subject-matter specialists, encourage communication between farmers and sellers, assist farmers to plan production to reduce transaction costs, understand the production and marketing possibilities, conduct a market research for produce that could be produced by small-scale farmers, and liaise with ministries of agriculture and marketing companies, consumers and farmers,

Similarly, Ovwigho, Isiorhovoja and Idoge, (2014) and Al samara (2005) added that the role of agricultural marketing extension included collating and analyzing market information, facilitating the provision of market facilities (information, packaging, storage and transport services) to meet the needs of small-scale farmers,

subscribing to any written reports published by the different information services. It also include to identify local buyers for crops, find out what prices they are paying, keep records of prices and plot them on graphs, organize visits for farmers to auctions, urban markets and processors, monitor local market prices, assist farmers in understanding marketing costs, identify traders for new crops, assist local communities to establish their own local market information services.

Extension workers can help farmers to make use of market information to reduce the risks associated with marketing, decide where to sell their agricultural products, check on the prices they are getting about products, decide whether to grow out-of-season produce, decide whether to grow different.

Shaun, Peter, Rupert, Seville, Buxton, Shriver, and Emily (2014), asserts that it is the duty of marketing extension agents to educate farmers and their organizations to become adept in basic business methods including: Analyzing market opportunities, assessing production costs, evaluating local service options developing business plans, negotiating new business models with chain partners, evaluating profitability on a seasonal basis and generating long term upgrading plans that include chain-wide processes.

## 2. Market Expansion and Inclusion

In order to expand the market and help farmers improve their competitiveness within a market chain or business model process, extension must simultaneously focus on farmer organization and on improving the management skills of existing structures. With the globalization of market, farmers have to transform themselves from mere producers-sellers in the domestic markets to producer cum seller in a wider market sense to best realize the returns for his investments, risks and efforts. To achieve this, farmers need to know answers to questions like what to produce, when to produce, how much to produce, when and where to sell, at what price and form to sell his produce. This is in line with the assertions of Ovwigho, (2015) that as farmers becomes more market oriented, so extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Similarly, FAO, (2013) opined that Knowledge of produce handling, storage and packaging was essential to the performance of the farmer in his farming business

Shaunet *al* (2014) outlined the roles of agricultural extension personnel in light of market-led extension (marketing extension) to include analysis of the strength, weakness, opportunity and threat (SWOT analysis) of the market, Organization of Farmers' Interest Groups (FIGs), supporting and enhancing the capacities of locally established groups under various schemes/programmes, enhancing the interactive and communication skills of the farmers, establishing marketing and agro-processing linkages between farmers' groups, markets and private processors, educating the farming community, direct marketing-farmers need to be informed about the benefits of direct marketing, capacity building of FIGs in terms of improved production, post-harvest operations, storage and transport and marketing, acquiring complete market intelligence regularly on various aspects of markets, regular usage of internet facility through computers to get update on market intelligence and Production of video films of success stories of community specific farmers.

Failure to develop the agricultural marketing system is likely to negate most, if not all, efforts to increase agricultural production (FAO, 2000). Extension education needed to be focused on marketing aspect, particularly on to produce more quantitative and qualitative products for export-oriented standard from existing available resources to create the new avenue of income generation (Singh, Tiwari, And Mandape, 2004).

Effective linkages of production systems with marketing, agro-processing and other value added activities would play an increasingly important role in the diversification of agriculture (Ministry of Agriculture, Government of India 2001). Agricultural production can only be really efficient if the accompanying marketing and post-harvest system are also efficient. Well – functioning marketing systems are essential to increase production. Marketing extension workers can play an important role in ensuring that the marketing system works for the benefit of farmers and consumers (FAO 2008).

## 3. Effects of Marketing Extension on Market Expansion and Inclusion

Abubakar, and Nasiru (2017) asserted that there are indications that the non- availability of storage facilities to local farmers implies that farmers will always have to sell at reduced prices as they cannot keep the perishable products for an extended period of time. This has grave implications on the income of farmers and could consequently result into a rapid decline in welfare.

Many authours (Adams, 1997; Orhevba, 2006; Adesina, 2012; International Bank for Reconstruction and Development, 2011; Food Balance Sheet Data, 2013) are of the view that marketing extension services have the capacity to reduce post- harvest food loss and could guarantee increase in food availability thereby reducing the need for food importation and consequently impact positively on the welfare of farmers by increasing their share

of the market. This is pertinent if the country is to meet its goal of food self- sufficiency by 2030 (Solomon et al 2019).

Landes, and Burfisher (2009) asserts that more efficient agricultural marketing extension service generates economic wide gains in output and wages, raises agricultural producer prices, reduces consumer food prices, and increases private consumption, particularly by low-income households. These gains could help to offset some of the medium-term adjustment costs for some commodity markets and households associated with reducing agricultural subsidies and tariffs.

Similarly, Jamison, and Moock, (1984) observed that extension services help farmers form group and work with many institutions with an aim of increasing productivity, and assist them to market their agricultural products. Therefore, effective agricultural marketing extension can contribute to improve productivity, increased output, and household income for the economy by bridging the gap between educational discoveries in extension providers and status in individual farmers (Birkhaeuser, Evenson, and Feder, 1991).

A number of studies also found that extension has contributed to increased productivity and farm income (Huffman, (1976), Owens, Hoddinott, and Kinsey, (2003)). Some of the researches measured the impact of extension service by containing extension variables, such as number of extension visits and total hours of extension worker time on crop yield per hectare and reported that extension contacts significantly increased the crop production and the value of crop production (Evenson, Pray, and Rosegrant, 1998). However, Gautam, (2000) argue that agricultural marketing extension has limited impacts on farm income and in dealing with agricultural productivity in many African countries In other words, the effect of extension services in developing countries has been low.

#### 4. **Conceptual Framework**

The organized provision of marketing extension services constitutes programme administrators, personnel and intended beneficiaries. The operational definition of marketing extension services will be based on the principle of the Simple Logic Model of the programme theory. This model provides a clear statement of the overall intent of an intervention, and useful guidance for implementation and selection of variables for an evaluation, family support services and international development This model involves identifying the key service components, expected outcomes and working with programmes to make explicit the underlying assumptions about how these service components will lead to the desired outcomes (Green and McAllister, 2002).

For this purpose, Agricultural marketing extension services are knowledge services which assist small- to medium-scale farmers and other actors in agricultural value chains to increase their access to markets and secure benefits from commercialization. They are series of activities that assist farmers gain better access to markets and reduce losses by making informed production decisions, prime of which is production according to market requirements, including products, specifications, varieties, time of planting, and profitability of selected crops. It is aimed at improving the preparation and process of moving agricultural goods to market.

Figure 1 below shows a Simple Logic Model adapted from W. K. Kellogg Foundation, (2004) and modified to explain the relationship between agricultural marketing extension services and market expansion and inclusion.

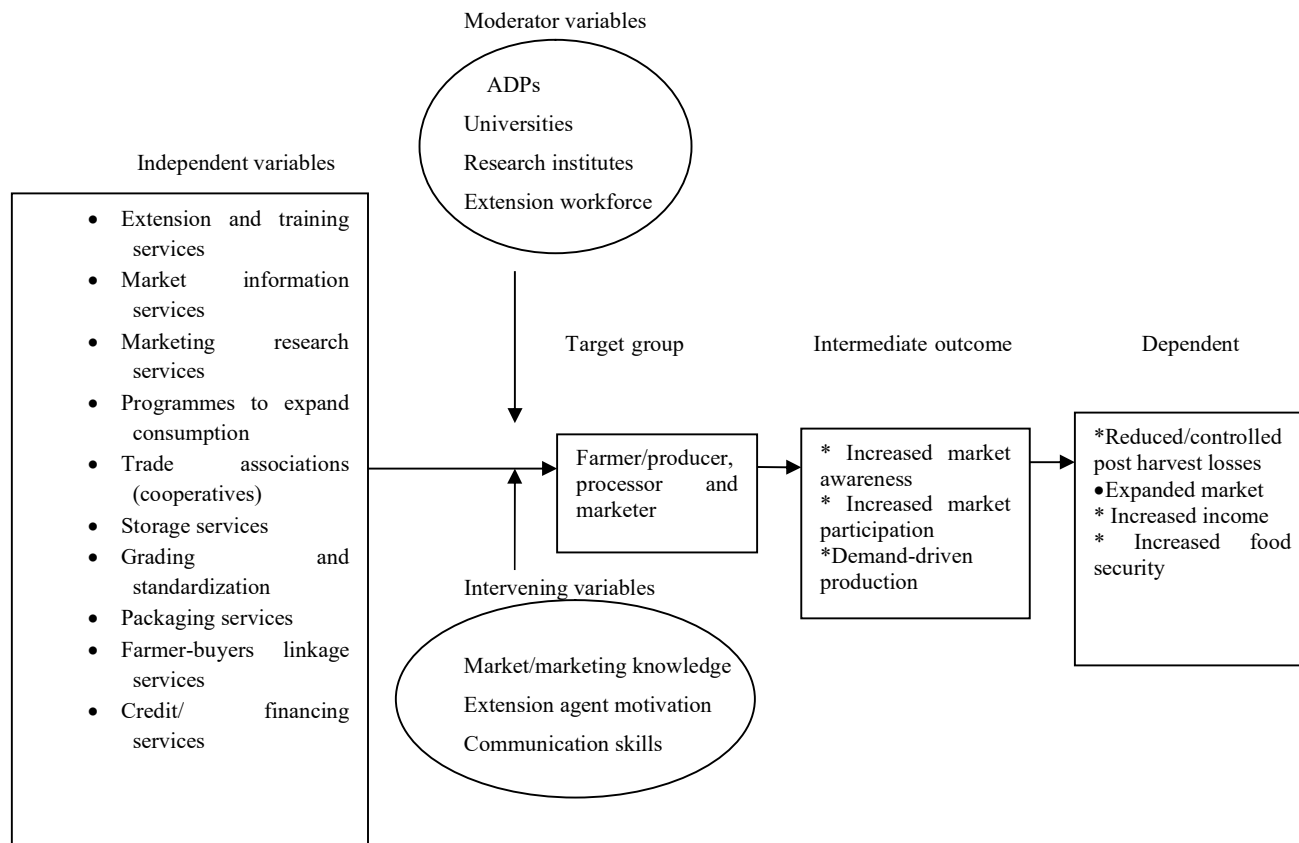


Fig. 1: Simple Logic Model adapted from W. K. Kellogg Foundation, (2004) and modified to explain the relationship between agricultural marketing extension services and market expansion and inclusion

Therefore, within the purview of programme theory, resources that lie within the boundaries are marketing extension services, regulations, and policies and are referred to as the systems inputs which are used to shape or change the perception, attitude and action of the farmers, processors and marketers. Marketing extension services produces outputs which are expected to produce a change in farmers' access to market and market information, reduce post-harvest losses through demand driven production and increase their income. The services are influenced by the moderator variables and intervening variables. These variables might be more important for the change process and outcome.

This change process may be affected or influenced by the activities of Research institutes, universities and other NGOs (Moderator variables) while the effect of the intervention may be affected by the extension workforce, marketing knowledge of the extension personnel, communication skills and motivation of the marketing extension agent (intervening variables). These variables might be more important for the change process and outcome (Cochrane, Leger, and Moore.1978).

Thus, in a society, there are different structures which function interdependently in order to maintain organic solidarity (Durkheim, 1893), equilibrium and social stability which the society strives to maintain.

There are institutions which are major aspects of the social change process or intervention. Marketing extension services in this case is viewed as an intervention or a change process that interrelates and is interdependent on other institutions in society such the Research institutes, Universities, NGOs and structures such as political and economic structures to bring harmony but specifically within the context of the whole marketing system. These marketing services empower the target population with marketing knowledge so they can become active participants in the market rather than being price takers.

The internal functionality of agricultural marketing extension as a structure is made up of interdependent sections such as the Federal Ministry of Agriculture, Agricultural Development Programmes (ADPs), Non-Governmental Organizations (NGOs), extension workers, support groups and members of the farming



community in general which work together to fulfil the functions necessary for meeting the post-harvest and marketing needs of root and tuber value chain actors as a whole. All these sections are socialized into roles and behaviour which fulfil their marketing needs and they are guided or ruled by the regulation or principles of marketing extension in relationships as parts of a single structure.

According to the model, it is expected that when the intervention (marketing extension) is properly implemented by the programme implementers (FMoA, ADPs, Extension worker), on the roots and tuber value chain actors (farmers, processors, and marketers), there will be an intermediate outcome (increased market awareness, access to market reliable market information and increased market participation). The intermediate outcome will further lead to the final outcome which are demand driven production, easy and fast means of disposal, (market access), reduced post-harvest losses, increased income, and increased food security).

## 5. Conclusion

Marketing plays a major role in the expansion of markets and in getting farmers involved in the markets and marketing processes by identifying farmers' marketing problems, collating and analyzing market information, facilitating the provision of market facilities (information, packaging, storage and transport services) to meet the needs of small-scale farmers, dissemination of market information through appropriate channels/media, maintaining timely information dissemination on farm produce, creating awareness on post-harvest problems, technologies and facilities, giving farmers information on available markets and location, identifying local buyers for crops and linking farmers to the buyers, linking farmers to market, organizing and or helping farmers form/join marketing groups/cooperatives, help farmers access credit facilities. It is therefore concluded that agricultural extension is no longer confined to agricultural production alone but includes other task such as marketing of agricultural and rural products, consultants, advisors and facilitators of the farmer learning process. Rendering marketing extension services requires sets of skills that extension workers may not have needed in the past and reduction of post-harvest losses through marketing of produce and the transition to a greater market orientation cannot be achieved without developing those skills. Extension workers should be trained. The Government should develop, support and promote training in marketing skills and services for agricultural marketing extension workers.

## References

- Abbott J. C. (1985). Agricultural marketing mechanisms and institutions: Their performance and limitations. World Bank, Pp 45-59
- Abubakar M., and Nasiru M.I., (2017). Assessment of post-harvest losses of yam (*dioscorea spp.*) In selected districts of karu local government area, nasarawa state. *FUW Trends in Science & Technology Journal*, Vol. 2 No. 1A pp 213 – 219. [www.ftstjournal.com](http://www.ftstjournal.com)
- Adams J.M. (1997). A review of the literature concerning losses in stored cereals and pulses, published since 1964. *Trop. Sci.*, 19: 1-28.
- Adesina A (ed.) (2012). *Agricultural Transformation Agenda, Growing Agriculture through Value Chain*, ATA: November, 2012. Pp 9-23.
- Adesina, A. A., and Baidu-Forson J. (1995). Farmers' perception and adoption of new agricultural technology: evidence from Burkina Faso and Guinea. *Journal of Agricultural Economics*, 13: 1-9.
- Agbarevo, M.N.B., and Obinne, C.P.O. (2010). *Elements of rural sociology and extension*. Teo Publishers, 33 Peter Okoye St. Enugu, Nigeria, pp.190-198.
- Al samara H. (2005). Some of the factors affecting farmers' knowledge in the operations of the agricultural product marketing in Wadi Zabid in Yemen Hodeidah area preparation. *Journal of Agricultural Sciences*, Vol. 21, No.1, p. 212-229
- Aziz, J., Edan, A., and Mansur, A. (2009). Evaluation of some aspects of the marketing of farmers for their production of dates in some villages the ferry hand in Diyala province, *Journal of Diala*, Vol. 37, p. 1-15 Bakri, (2014)
- Birkhaeuser, D., Evenson, R. E., and Feder, G. (1991). The Economic Impact of Agricultural Extension: A Review. *Economic Development and Cultural Change* 39(3), 607-640.
- Cochrane, A.L; Leger, A.S and Moore.F (1978). Health Service 'input' and mortality 'output' in developed countries, *Journal of Epidemiology and Community Health*, 32(3): 200-205.
- Durkheim, E. (1933). *Division of Labor in Society*. G. Simpson, Trans. New York: Macmillan

- Evenson, E. R., Pray C.E., and Rosegrant M.W., (1998). Determinants of productivity growth in Asian agriculture. Paper presented at the 1993 American Agricultural Economics Association pre conference work shop, Post- Green- Revolution Agricultural Development Strategies in the Third World: What Next?, Orlando, Fla. Retrieved from <http://www.indiaenvironmentportal.org.in/files/rr109.pdf>
- Ezirim, A. C. (2003). *Dynamics of Agricultural and Food Marketing in Nigeria*: Port Harcourt, Horizon Concepts.
- Food and Agricultural Organization (2011). *Global Food Losses and Food Waste: Extent, Causes and Prevention*. Rome: FAO; pp 38.
- FAO 2006. Food security policy brief, Issue 2. Rome: FAO.
- Food and Agriculture Organization, (2013). Marketing extension. Retrieved from <http://www.fao.org/ag/ags/agricultural-marketing-linkages/marketing-extension/en/>
- Food and agricultural organization of the United Nations (2000).. The state of food and agriculture, Rome, Italy.
- Food and agricultural organization of the United Nations (2005). A Review of cassava in Africa with country case study on Nigeria, Ghana, the United Republic of Tanzania, Uganda and Benin. Rome:
- Gautam, M., 2000. Agricultural extension: The Kenya experience. An impact evaluation. Washington, D.C: The World Bank
- Gebremedhin, B., Jemaneh, S., Hoekstra, D. and Anandajayasekeram, P. (2012). A guide to market-oriented extension services with special reference to Ethiopia. IPMS (Improving Productivity and Market Success) of Ethiopian Farmers Project. Nairobi: ILRI.)
- Giovannucci, P.J., Daniele, A. W., Sepherd, W. H., and Andrew, A, S (2001). *Market information service*, Munich Personal RePEc Archive (MPRA), Paper No. 17193, Online at <http://mpra.ub.uni-muenchen.de/17193/MPRA.go/to/download/Q/QC/E.go/to/download/Q/QC/E>
- Green B.L., and McAllister C. (2002): Theory-based, participatory evaluation a powerful tool for evaluating family support programmemes. In: *The Bulletin of the National Centre for zero to three*, April 24. University of Pittsburg Hassan *et al* (2013)
- Huffman, W. E. (1976). The value of the productive time of farm wives: Iowa, North Carolina, and Oklahoma. *American Journal of Agricultural Economics*, 58(5), 836-841.
- International Bank for Reconstruction and Development/The World Bank; the Natural Resources Institut/ UK, and FAO/UN. (2011). *Missing Food: The Case of Post-harvest Grain Losses in Sub-Saharan Africa*. Washington DC: World Bank Report, April.
- Jamison, D. T., and Mook, P. R. (1984). Farmer education and farm efficiency in Nepal: The role of schooling, extension services, and cognitive skills. *World development*, 12(1), 67-86. DOI: [10.1016/0305-750X\(84\)90036-6](https://doi.org/10.1016/0305-750X(84)90036-6).
- Kohls, R. L. (1985). *Marketing of Agriculture Products*. Macmillan Publishing Company, 866 Third Avenue New 10022.
- Landes, M. R., and Mary E. B. (2009). *Growth and Equity Effects of Agricultural Marketing Efficiency Gains in India*. ERR-89. U.S. Dept. of Agriculture, Economics. Research. Services. No 89.
- Le Van C., Ngo T. T. and Nguyen H. A. (2013). Market information access capability of rural farmer in Nga Son, Thanh Hoa, Viet Nam. *Greener Journal of Business and Management Studies*. Vol. 3 (6), pp. 292-297.
- Narayanan, A. (1991). Enhancing farmers' income through extension services for agricultural marketing. In: Rivera, W. R. and Gustafson, D. J. (Eds.) *Agricultural Extension World Wide Institutional Evolution and Forces for Change*. Amsterdam: Elsevier Science Publishers
- Olukosi J.O., and Isitor, A. (1990). *Introduction to Agricultural Marketing and Prices: Principles and Application*. Abuja: G.U. Publication, pp. 1-3
- Orheba BA 2006. Effect of Pre-storage Treatment and Storage Conditions on some Quality of Stored Yam Tubers. Unpublished M.Eng Thesis, Federal University of Technology Minna, Nigeria
- Ovwigho, B.O. (2015): Role perception and performance of agricultural extension agents in maize marketing in Delta State Nigeria. *Journal of Biology, Agriculture and Healthcare* Vol.5, No.15, Pp 7-11
- Ovwigho B. O., Isiorhovoja, R. A., and Idoge, D. E. (2015). Positions and roles of agricultural extension workers in poultry egg marketing in Delta State, Nigeria. *Mediterranean Journal of Social Sciences*. Vol 5 No 2
- Owens, T., Hoddinott, J., and Kinsey, B. (2003). The impact of agricultural extension on farm production in resettlement areas of Zimbabwe. *Economic Development and Cultural Change* 51(2), 337-357.
- Shakeel-Ul-Rehman, M. Selvaraj and M. Syed Ibrahim (2012). Indian agricultural marketing- A review. *Asian Journal of Agriculture and Rural Development*, 2(1), 69-75.



- Shaun F., Peter R., Rupert B., Seville D., Buxton A., Shriver J., and Emily W. (2014). Linking Smallholder Farmers to Markets and the Implications for Extension and Advisory Services: *Modernizing Extension and Advisory Services (MEAS) Discussion Paper Series on Good Practices and Best Fit Approaches in Extension and Advisory Service Provision*. Retrieved from [www.meas-extension.org](http://www.meas-extension.org).
- Shrestha, S.G. (2011). Public support for agriculture extension and marketing extension system in Nepal. Paper presented in Regional Consultation Meeting on “Public Support in the Production and Marketing System in Agriculture of SAARC Countries” on 13-14 December 2011 in Kathmandu, Nepal). Singh, Tiwari, And Mandape, 2004).
- Solomon C.N, Francis S. W, Agness A. I, and Adegbola A J. (2019). Effects of Marketing Extension Services on the Control of Postharvest Losses of Root and Tuber Crop Produce in Abia State Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology* 29(3): 1-12
- Tiago and Yen (2007). Guide to agricultural marketing extension with special reference to Vietnam, Module 1 Improving access to market information and understanding of marketing opportunities