

Livestock Value Chain Development in Nigeria: Institutional Framework and Opportunities for Chain Actors

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Abstract

Agricultural Transformation Agenda (ATA) as a key driver of the National Economic Transformation Agenda has aided in creating jobs and increased non-oil sector contribution to GDP. However, the livestock subsector contribution is under represented largely because of the under development of the livestock value chain among other factors. This paper attempts to review the livestock value chain development in Nigeria. It focused on the existing livestock value chain implementation strategy, its constraints, and opportunities for chain actors. An overview the Nigerian livestock value chains and their institutional framework, evaluation of achievements and challenges were highlighted. It is recommended that Nigerian Livestock value chain development programmes and initiatives are expected to make concrete contributions towards achieving market-led and knowledge-based transformation of the industry in line with the agenda of the Federal Government. Therefore, strengthening capacities of the chain actors to cooperate and operate optimally within a focused institutional framework deserves due policy attention. The relevant departments in the FMARD and major chain actors (NIAS, NVMA and NALHSATON) who have direct bearing on the governance structure of the livestock value chain must proactively form a common front on the revalidation of Livestock underrepresented GDP estimates for Nigeria and other African nations, and value chain mapping for each of the selected livestock value chain as a way of attracting attention of National and International development financing institutions.

Keywords: Livestock, Value Chain, Institutional framework, Chain actors, Nigeria

1.0 INTRODUCTION

Nigerian agricultural development has witnessed major turnaround through the institutionalization of and the implementation of an Agricultural Transformation Agenda (ATA) as one of the key drivers of the National Economic Transformation Agenda whose aim is to diversify the economy from reliance on oil, assure food security and create jobs, especially for the youth. In line with this, implementing institutions and structures were put in place that will promote agribusiness, attract private sector investment in agriculture, reduce post-harvest losses, add value to local agricultural produce, develop rural infrastructure and enhance access of farmers to financial services and markets (ATASP-1, 2013). Worthy of note is the ambitious target of creating over 3.5 million jobs along the *value chains* of the priority crops, livestock and fisheries for Nigeria's teeming youths and women set by ATA and since livestock is a source of nutrients from meat and dairy and contributes significantly to livelihoods, directly supporting smallholder farmers and creating employment. The effect of these interventions is demonstrated in the increase (19.65% of GDP) in non-oil sector contribution in the first quarter of 2014 (NBS, 2014) by the agricultural sector of the economy.

This however does not project the full anticipated contribution capacity of the agricultural sector as it must have been viewed from the unbalanced report of GDP contributions especially from the Livestock subsector; as livestock specialists frequently argue that livestock production is under represented in the GDP estimates of African nations (IGAD, 2013); and more importantly ATA implementation mechanism of unleashing Agricultural Development in Nigeria through Value Chain development and financing did not focus on Livestock Value Chain Development as a major driver of achieving its agenda.

This assertion can be buttressed by the fact that Nigerian Agriculture Sector Investment Opportunities focused mainly on the establishment of Staple Crop Processing Zones (SCPZ) in fourteen (14) sites selected across Nigeria without recourse to the huge contributions of the livestock sub sector; agricultural value chain project financing (Adesina, 2012 and Oseni,2014) by both National Development Finance Institutions (CBN, BoI) and International Development finance institutions are crop biased (Cotton Textile and Garment N100 Billion, Rice N10Billion, Sugar cane development N400 Million, Micro Small and Medium Enterprise, N17.3 Billion for 15 states, and Cocoa seeds, N1.512 Billion).

2.0 AN OVERVIEW THE NIGERIAN LIVESTOCK VALUE CHAINS

Graeme *et al.* (2012) defined *Value Chain* as a sequence of related enterprises conducting activities so as to add value to a product from its primary production through its processing and marketing to the final sale of the product to consumers (End markets). This can simply be put as Value adding activities which are routinely undertaken at micro, meso and macro levels. Livestock Value Chain therefore functions as each link in the chain,

involving sourcing inputs, making/producing, and then delivering/selling product to the next link in the chain. Nigerian Livestock Value chain overview seeks to briefly provide an understanding and description of the commonalities within diverse livestock enterprises involved in the value-chain.

Like in most developing countries, the majorities of the Nigerian livestock owners are the rural poor, and a significant proportion of the urban poor, who keep livestock and use them in a variety of ways that extend far beyond income generation and in many cases, livestock are a central component of smallholder risk management strategies (Bailey *et al.*, 1999; and Randolph *et al.*, 2007). The livestock production systems are often characterized by long marketing chains featuring great distances, numerous phases of weight gain and feeding regimes, many levels of traders and transactions, a multitude of steps and stages of processing, and a variety of employment-creating services and inputs. Similarly, on the side of consumers of livestock products, the delivery of livestock products are through informal markets. These represent a potential pathway out of poverty for many smallholders' livestock farmers and tend to serve poor consumers, creating an even tighter focus on the poor; and have potential multiplier effects for pro-poor development interventions as observed by Pica-Ciamarra (2005).

Even though five (5) Livestock Value Chains namely; Dairy Value Chain, Beef Value Chain, Sheep and Goat Value Chain, Poultry Value Chain, Leather Value Chain and Pig Value Chain have been earmarked for intervention (FMARD, 2012), an analysis of this intervention using the result-chain model is presented as table (1)

TABLE 1: Result Chain Evaluation of Nigeria Livestock Value Chains - Achievements

VALUE CHAIN	INPUT	OUTPUT	OUTCOME
Dairy	Not defined	i. Draft Comprehensive breeding plan completed ii. Three existing breeding centres at Funa Funa, Niger State, Paikon Kore, FCT and Jibiro, Adamawa State iii. Community AI Service centers. First set of EAs trained on milk hygiene and animal Health.	Not reported
Leather	Not defined	i. In collaboration with GEMS organized two mini trade fairs on Finished Leather Goods (FLGs). ii. 50 Shoemakers trained in various aspects of shoe making. iii. 50 small scale producers were identified and granted loans by GEMS, a programme of DFID partnering with the Leather value chain.	500 jobs were created by engaging artisans in the leather industry
Beef	i. Selection of loan beneficiaries for fattening scheme on-going in the states. ii. Bank of Agriculture ready for loan disbursement to selected fatteners.	No achievement	Not reported

	<ul style="list-style-type: none"> iii. Mckinsey Consultants visited Nigeria to assess the possibility of establishment of Halal Certified Meat Processing and Packaging Centres in Nigeria (HCMPPC). iv. The contract for the procurement of AI equipments and accessories for the improvement of local breeds has been awarded by the ministerial tender board v. Arrangements for conducting a study on HCMPPC under way 		
Animal Health	Not defined	<ul style="list-style-type: none"> i. 5.3million doses of CBPP vaccine allocated to 5 States (Benue, Niger, Katsina, Jigawa & FCT) ii. 3.55million doses of PPR vaccine allocated to 9 States (Benue, Niger, Katsina, Jigawa, Kaduna, Kwara, Delta, Ogun & FCT) iii. Sero monitoring carried out for 3 diseases namely: Newcastle Disease, Infectious Bursal Disease, and African swine fever. iv. Procurement of 4500doses of Anti-rabies vaccines to Benue and Cross Rivers State 	Not reported
Pest Control	Not defined	<ul style="list-style-type: none"> i. 200 flight hours carried out in Jigawa, Kebbi & Sokoto) 	Not reported
Cross Cutting		<p>National Livestock Training Centre, Kachia</p> <ul style="list-style-type: none"> i. Commissioned by the HMA on 14th Oct., 2010 ii. Collaborates with NAERLS (Livestock Extension delivery methodology, Cooperative formation and management, etc; ATBU, Bauchi (Pasture prodn); Uni-Agric Makurdi (Swine, Poultry and Micro livestock production and management); NAPRI (Dairy /Beef cattle production, pasture production); University of Maiduguri (Sheep and Goats production) iii. Facilities - Some of the facilities in the Centre are: 31 Bed hostel; 500 seat Conference hall; Computer unit ; Lecture Classes with Syndicate rooms ; Restaurant with Dining hall ; 250 KVA Generator ; Water from borehole supply ; Library ; Clinic and Laundry 	Not reported

Source: Federal Department of Livestock and Pest Control Services, FMARD Abuja (2013)

The Nigerian livestock Value chain analyzed using the result chain model clearly showed the disconnect between the functional components of a value chain and the delivery medium which in this case the public partner (government) that is the key enabler for all chain actors.

An important component of value-chain is recognizing that support and action for improving performance throughout the value chain can only be achieved both by those within the value chain itself i.e. the private sector operators whose roles were hardly captured in Table 1, and by those outside of it i.e. typically governments.

One of the key attractive feature of livestock systems development is the presence of steps and-stairs of livelihood generation activities among species (e.g. from poultry to goats to dairy cattle) that are available even to the landless, to women, and to other disadvantaged groups. This have endeared development practitioners and researchers alike to utilized value chain approaches to capture the interactions of increasingly dynamic (and complex) markets in developing countries and to examine the inter-relationships between diverse actors involved

in all stages of the production and marketing channels of livestock products in Nigeria.

In spite of the weakness and challenges in livestock value chain development in Nigeria, there are notable attempts in the development and evaluation of the value chain for some livestock species and products at both formal and informal sectors, these include the Dairy Pastoral (Pastoral milk collection activity models of WAMCO and MILCOPAL) (Annatte *et al.*, 2012) and the poultry value chain.

CHALLENGES

Nigeria's participation in the Global Commodity Chain for Livestock will require a departure from Traditional Marketing Systems where farmers produce commodities that are "pushed" into the marketplace while the farmers remain isolated from a majority of end- markets (consumers) and have little control over input costs or process received for their goods. The primary exception is where local farmers sell produce in local markets and where there is a direct link from farmer to consumer, thus, in most traditional selling systems, farmers/producers tend to receive minimal profit. In this system, market "Push" tends to be based on independent transactions at each step, or between each activity in the value chain, as farmers are largely isolated from the demands and preferences of consumers. Research and Development is focused on production and on reducing costs of production, and may not take into account of other steps, links, or dependencies in the chain (e.g. environmental or social costs)

Value Chain Marketing Systems must be embraced where farmers are linked to the needs of consumers, working closely with suppliers and processors to produce the specific goods required by consumers. Using this approach, and through continuous innovation and feedback between different stages along the value chain, the farmer's market power and profitability can be enhanced. Rather than focusing profits on one or two links, players at all levels of the value chain can benefit. The market "Pull" is based on integrated transactions and information where consumers purchase products that are produced according to their preferences. The farmer becomes the core link in producing the products that the consumers desire (USAID, 2007).

Communication is in both directions (farmers/producers and consumers), while research and development (R&D), targets not only increased production, it also focuses on consumer needs, and attempts to take into account all of the links, and dependencies in the value chain, e.g. processing, environmental and social costs or considerations, as well as factors such as health impacts, education and learning.

ILRI (2003) considered the following as some of the main constraints to the development of Livestock Value chain in most developing economies:

- i. *External constraints*: Adverse macroeconomic conditions (high taxes, high interest rates), lack of institutional support;
- ii. *Quality constraints*: Little understanding of processors' requirements, lack of laboratories and instruments for quality control, price and quality of the veterinary services;
- iii. *Financial constraints*: Lack of capital to invest in assets, equipment and inputs that would improve quality;
- iv. *Gender constraints*: In comparison to men, women face higher disadvantages, in particular in terms of mobility, access to assets and to productive resources, and access to market information, with the result that they find it more difficult to access and maintain profitable market niches and capture a larger slice of incomes;
- v. *Infrastructure constraints*: Lack or inadequacy of, among others, roads, electricity, weighing stations, cattle dips, slaughtering and processing facilities (which raises transaction costs, exacerbates information asymmetries between producers and traders, and discourages investment in processing);
- vi. *Information constraints*: Limited access to market-related information (e.g. on prices, value chains, competitors, consumer preferences);
- vii. *Skills and knowledge constraints*: Lack of business management skills (e.g. production planning) and, in particular, inadequate access to the knowledge and technologies needed to meet rising sanitary standards, making it extremely difficult for smallholders to gain credible certification of compliance with marketing requirements; and
- viii. *Market constraints*: Low demand, a multiplicity of intermediaries (which increases the charges and shades the transparency of the operation).

The lopsidedness in prioritizing crop value chain development by both national and development finance institutions as against livestock value chain development needs to be urgently addressed as a panacea for sustainable wealth creation and increased GDP contribution to the national economy.

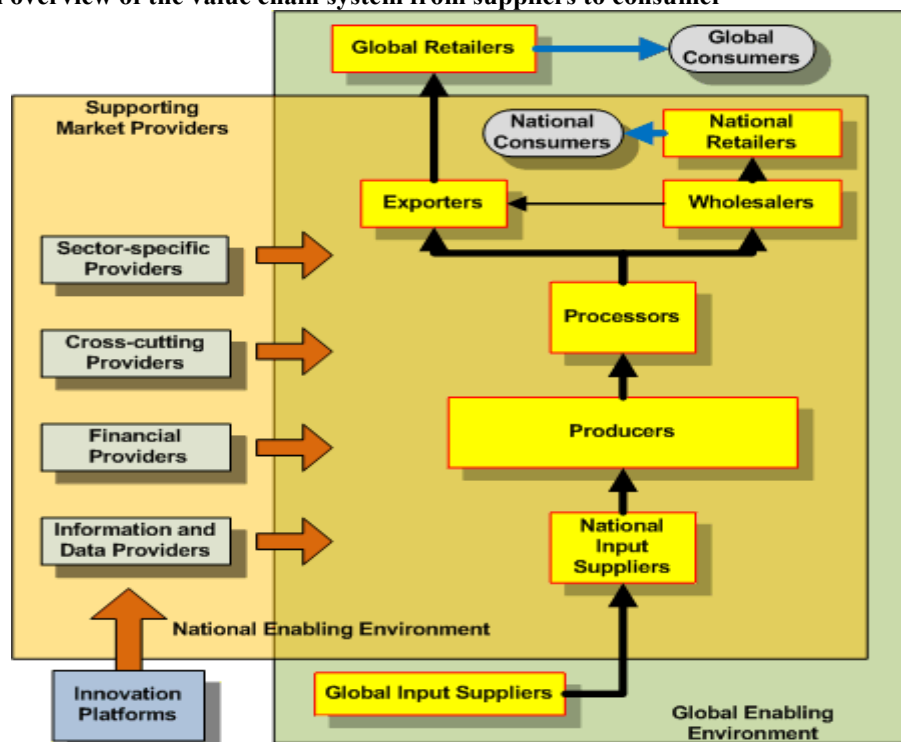
Livestock value chain development actors require information on chain operations, and the development of good performance metrics for livestock systems especially given that some of the characteristics of smallholder systems is performance of so many functions (draught power, soil nutrient production, a store of wealth, a risk management tool, etc.) ; therefore the evaluation of the performance in these types of markets requires much more focused analysis as the Nigerian livestock Marketing patterns are driven more by income

needs than by price movements.

3.0 LIVESTOCK VALUE CHAIN INSTITUTIONAL FRAMEWORK

The expectation of any productive sector of an economy is to be able to meet domestic needs and participate in the global commodity chain; therefore, value chain approach provides a framework of analyzing the nature and determinants of competitiveness in value chains in which small farmers can participate. It also provides the basic understanding needed for designing and implementing appropriate development programs and policies to support their market participation. Indeed, many development interventions now utilize the value chain approach as an important entry point for engaging small farmers, individually or collectively, in high-value export markets (GTZ, 2007). A typical feature of a competitive value chain is presented as figure 1.

Figure 1: An overview of the value chain system from suppliers to consumer



Source: WRF, 2006.

Institutional framework therefore serves as the major intervention pivot that support or increase the productivity of agricultural development programmes or enterprises. This is because it is the determinant of the roles and interaction of chain actors.

Countries like Ethiopia had focused on the development of key commodities and livestock value chain under the Ethiopian Agricultural Transformation Agency Programme with relatively high success (EATA, 2015). This is because an institutional framework for the actualization of agricultural transformation agenda is well focused, programme driven and actors centered. The key focused areas are *Value Chains*; Value Chain programs strengthen the entire product cycle of specific commodities with the highest potential to impact smallholder farmer production and well-being, and livestock forms a crucial aspect of most Ethiopian agricultural households' production systems. It forms a vital aspect of the Transformation Agenda and ATA's efforts:

Systems; Interventions in specific value chains are enhanced when all components of the value chain function smoothly as systems are the key building blocks of agricultural value chains. Systems are programmed to prioritize the Agricultural Transformation Agenda by addressing each part of the value chain in an interconnected manner:

Crosscutting; Crosscutting Initiatives address key issues that intersect with and strengthen the interventions in all Value Chain and System programme areas. They identify critical issues within all interventions to minimize unintended consequences, and to ensure that interventions are socially, environmentally, and economically sustainable. Crosscutting Initiatives focus on: Gender Mainstreaming, Climate Change & Environmental Sustainability and Monitoring, Learning & Evaluation.

While the Nigerian Agricultural Transformation Agenda (ATA) has its institutional framework project rather than programme driven, and it is also predetermined. The key focused (ATASP-1, 2013) areas are:

Infrastructure Development: Rehabilitation of agricultural and ancillary social infrastructure including 1,300km of irrigation water conveyance canals (Kebbi, 280km; Sokoto, 175km; Niger, 220km; Kano, 230km; Enugu,

125km; Anambra, 75km; and Jigawa 195km); 1,007 units of various hydraulic structures (Kebbi, 167; Sokoto, 120; Niger, 229; Kano, 104; Enugu, 182; Anambra, 100; and Jigawa 105); 1,330km of feeder roads (Kebbi, 265km; Sokoto, 55km; Niger, 235km; Kano, 330km; Enugu, 115km; Anambra, 80km; and Jigawa 250km); rehabilitation of 35 primary schools (5 per state), 14 health centers (2 per state), 70 potable water supply and sanitation schemes (10 boreholes and accessories per state); 21 demonstration and technology centers (3 per state), 21 community markets and storage facilities (3 per state).

Commodity Value Chain Development; Capacity development for public (agricultural research, extension, relevant Ministries' department such as Rural Development and of FMARD, Monitoring and Evaluation for efficient external supervision), private (MFIs, agro-dealers, etc.) and community-based (producers' organizations, cooperatives, inter-professional bodies, etc.) institutions; training value chain actors in technical and managerial skills; promoting use of science & technology; training in post-harvest reduction methods including food processing; business and entrepreneurship training; training of communities and health workers on prevention and management of common diseases as well as good nutrition, sanitation & hygiene practices; development of market information system (MIS); management of environmental and social impacts; implementation of policies to promote private investment in agriculture.

Programme Management; Coordination and supervision of program activities; and program day to day management based on adequate results measurement framework; ESMP implementation and supervision; program procurement, disbursement, financial management, audit and reporting.

For the Nigerian Livestock systems to effectively serve as pathway out of poverty for many smallholders and also to launch the livestock industry into the global commodity chain (GCC) we must address the issue of institutional framework that will drive the livestock value chain development.

This institutional frame work must be simple, programme driven and actors centered. This can best be achieved if the framework is centred on two (2) vital components viz: (i) value chain governance and (ii) Value addition activities

USAID (2011) reported that *Value chain governance* is fundamental to the value chain approach, as it describes which firms within a value chain set and enforce the parameters under which others in the chain operate. Embedded in governance are inter-firm relationships, leadership dynamics and the distribution of benefits. While value chain governance is influenced by the characteristics of the product and the degree of specification by the end market, it evolves over time with changes in markets, products and inter-firm relationships.

Value addition activities represent the quality of relationships between different stakeholders (chain actors) as a key factor affecting the functioning of a value chain. Strong, mutually beneficial relationships between firms facilitate the transfer of information, skills and services that are essential for the promotion and upgrading of products and services. The distinct feature of this approach includes;

- Opportunities and constraints generally require a coordinated response by multiple firms in the chain, which necessitates trust and a willingness to collaborate (networks of relationships and social institutions).
- Building internal capacity to address value chain constraints by empowering stakeholders, reduce dependency and ensure sustainability of investment rather than solve specific identified production and marketing problems.
- Transforming relationships particularly between firms linked vertically in the value chain to: i) facilitate upgrading to become more competitive, and ii) adapt to changes in end markets.
- Value chain actors make upgrading decisions based on a variety of financial and non-financial incentives. (Chemonics, 2006).

4.0 OPPORTUNITIES FOR CHAIN ACTORS

The Nigerian livestock industry consist of a multitude of steps and stages of processing, and a variety of employment-creating services, inputs, and products therefore, opportunities for chain actors in the Nigerian livestock value chain development are as varied as the value chain links; however the key actors will continue to benefit from the two fronts based on the institutional framework which are *value chain governance* and *Value addition activities*.

An appraisal of the strategic roles of members of the Livestock industry (Nigerian Institute of Animal Science (NIAS), Nigerian Veterinary Medicine Association (NVMA) and National Association of Livestock Husbandry Scientist And Technologist Of Nigeria (NALHSATON) as determined in the respective livestock value chain, overcoming the existing challenges and positioning of the Nigerian Livestock value chain as a global commodity chain player has naturally endowed all of us with unlimited opportunities for service.

5.0 CONCLUSIONS AND RECOMMENDATION

Value chain approaches play an important role in characterizing the complex networks, relationships, and

incentives that exist in livestock systems. It further provides framework for the development of new, pro-poor value chains. Value chains are particularly important for livestock systems because of the multifaceted ways livestock can serve to improve rural livelihoods.

Nigerian Livestock value chain development programmes and initiatives are expected to make concrete contributions towards achieving market-led and knowledge-based transformation of the industry in line with the agenda of the Federal Government. Therefore, strengthening capacities of the chain actors to cooperate and operate optimally within a focused institutional framework deserves due policy attention.

The relevant departments in the FMARD and major chain actors (NIAS, NVMA and NALHSATON) who have direct bearing on the governance structure of the livestock value chain must proactively form a common front on the revalidation of Livestock under represented GDP estimates for Nigeria and other African nations, and value chain mapping for each of the selected livestock value chain as a way of attracting attention of National and International development financing institutions.

Major chain actors (NIAS, NVMA and NALHSATON) must also urgently seek for collaboration with development partners like the national quality infrastructure (NQI), UNDP, USAID, GIZ in developing the right institutional framework that will support the establishments and implementation of different livestock value chain and governance issue along the chain such as standardization, including conformity assessment services, metrology, and accreditation.

Government incentives to support investors in agriculture (Adesina, 2012) (tax holidays, duty waivers, constitutional guarantees for repatriation of investable funds, fiscal incentives) to encourage import substitution etc are all *push mechanism* and unsupportive to local farmers. The focus should be a *pull mechanism* where livestock value chain actors are rewarded based on their output as an incentive for increased productivity.

REFERENCE

- Adesina, A. (2012) Agricultural Transformation Agenda: Repositioning Agriculture to Drive Nigeria's Economy Honourable Minister of Agriculture and Rural Development
- Annatte, I.; Fatima, B.A.; Wambai, Y. S.; Ruma, B. M.; Gideon, M. M.; Lawal U. S.; Lawrence, O. I.; Aligana, M.; Shofela, A. K.; Mark, L. K. and Kasim, H. I(2012) Major Issues in Nigeria Dairy Value Chain Development. *Vom Journal of Veterinary Science* Vol. 9: 32 - 39
- ATASP-1 (2013) Agricultural Transformation Agenda Support Program – Phase 1
- Bailey, D., Barrett, C.B., Little, P.D., Chabari, F., (1999). Livestock Markets and Risk Management among East African Pastoralists: A Review and Research Agenda. GL-CRSP Pastoral Risk Management Project Technical Report No. 03/99. Utah State University, Logan, UT.
- Chemonics (2006) Overview of the Value Chain Approach PRA Project Annual Report FY 2006 Chemonics International p. 1
- Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (GTZ), (2007) ValueLinks Manual: The Methodology of Value Chain Promotion, first ed. <<http://www.value-links.de/manual.html>> (retrieved 10.03.08).
- EATA (2015) Ethiopian Agricultural Transformation Agency Report.
- FMARD (2012) Livestock Value Chains - Achievements to Date: Federal Department of Livestock and Pest Control Services, FMARD Abuja.
- Graeme, M., Nasr-Alla, A. M., Al - Kenawy, D., Fathi, M., Hebicha, H., Diab, A. M., Hussein, S. M., Abou-Zeid, R. M., El-Naggar, G. (2012) Value-chain analysis An assessment methodology to estimate Egyptian aquaculture sector performance *Aquaculture* 362–363 18–27
- IGAD (2013) Center for Pastoral Areas & Livestock Development (ICPALD) The Contribution of Livestock to the Economies of Kenya, Ethiopia, Uganda and Sudan Policy Brief Series no. ICPALD 8/SCLE/8/2013
- ILRI (2006) International Livestock Research Institute.. Improving Livestock Marketing and Intraregional Trade in West Africa: Determining appropriate economic incentives and policy framework. Kenya: ILRI.
- NBS (2014) National Bureau of Statistics: Nigerian Gross Domestic Product Report ; Issue 1(Q1)
- Oseni, E. (2012) Bank of Industry Presentation: Agricultural Development: Optimising the Value Chain.
- Pica-Ciamarra, U. (2005). Livestock Policies for Poverty Alleviation: Theory and Practical Evidence from Africa, Asia and Latin America, FAO Pro-poor Livestock.
- Randolph, T.F., Schelling, E., Grace, D., Nicholson, C.F., Leroy, J.L., Cole, D.C., Demment, M.W., Omore, A., Zinsstag, J., Ruel, M. (2007). Role of Livestock in Human Nutrition and Health for Poverty Reduction in Developing Countries. *J. Anim. Sci.* 85, 2788–2800.
- USAID (2011). Gender and Pro-poor Value Chain Analysis: Insights from the Gate Project Methodology and Case Studies. (http://www.usaid.gov/our_work/cross-cutting_programs/wid/pubs/GATE_Gender_Pro_Poor_Value_Chain_Analysis_05-09.pdf)
- World Report Fall 2006: The Value Chain Approach; Strengthening Value Chains ACIDI/VOCA