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# AGRIBUSINESS IN AFRICA

## A CONTEXTUALIZED MANUAL FOR TERTIARY INSTITUTIONS AND DEVELOPMENT



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The African Network for Agriculture, Agroforestry and Natural  
Resources Education (ANAFE)

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## Preface

Africa is a continent of strong oral traditions. This is why the Malian writer and ethnologist, Amadou Hampathé Bâ (1960), stressed the wealth of non documented knowledge and skills held by African people in their heads by saying: “*In Africa, an old person dying is equivalent to a library burning*”. Hampathé Bâ explained “The black people of Africa are not people with a tradition of written literature, but have developed the art of speech in a most special manner. While it is not written, their literature is not less beautiful. How many poems, epics, historic and narratives, didactic tales, myths and legends have so been transmitted through centuries, carried by the prodigious memory of the men with an oral tradition, passionately in love with beautiful language and almost all poets?”. This could in part explain why African lecturers despite their experience are still largely deficient in writing and developing contextualized learning resources that they and their students could use. This evidence has been confirmed by some surveys on the reasons for the lack of contextualized learning resources in Africa conducted by the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFAE) in 2010 (ANAFAE, 2010).

ANAFAE, with a membership of 136 colleges and Universities dealing with Agriculture, Agroforestry, Forestry and other natural resources disciplines, has evolved to become the lead African organization in championing curriculum review and development for Tertiary Agricultural Education (TAE) in Sub-Saharan Africa and in retooling lecturers in various areas such as development of learning materials.

Given its well acknowledged work from 1993 to 2003 of promoting Agroforestry education and training which has translated into almost all Tertiary Agricultural Education (TAE) institutions in Africa developing or reviewing their Agroforestry curricula and offering stand-alone degree programmes in Agroforestry, ANAFE, has embarked on strengthening Forestry Education and Agribusiness training since 2010. Agribusiness, particularly, has become an area of focus for African TAE institutions since the Commission for Africa report of the African Union declared in 2010 that the sector has a huge potential to catalyze the economic development of Africa if well harnessed. .

As a way of strengthening the capacity of lecturers in developing learning materials, ANAFE, through its programme of Strengthening Africa’s Strategic Agricultural Capacity for Impact on Development (SASACID), has trained and supported about 40 lecturers to collaboratively develop learning materials in Agribusiness and in Agricultural Risks Management.

This book is a compilation of chapters on Agribusiness collaboratively developed by African experts on this subject including lecturers, scientists and development/private sector people from 22 training, research and development institutions and from 12 countries (Ivory Coast, Mali, Niger, Nigeria, Cameroon, Ghana, Botswana, Zambia, Zimbabwe, Mauritius, Kenya and Ethiopia). The authors were gathered by ANAFE in Abidjan in for a training on collaborative writing during which authors agreed on the main areas of focus, sections, teams



and the structure of the chapters. A follow-up write shop held in Nairobi allowed the authors, together with some who were nominated, to jointly develop the chapters. The main Introduction to the book that was initiated in Abidjan, during the first workshop under the leadership of some of the authors, was also collaboratively developed and finalized with the input of all the authors.

This book is a pioneer initiative in Africa and which, I am sure, will help lecturers in refining their own learning and teaching resources. It might not address all the issues in Agribusiness, but it constitutes a valuable and reference teaching and learning resource.

**Aissetou Dramé-Yayé**

Executive Secretary of ANAFE

A handwritten signature in blue ink, appearing to be 'Aissetou Dramé-Yayé', written over a light blue horizontal line.

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This book of learning materials in Agribusiness would not have seen the day without the strong commitment, hard work and perseverance of the authors whom we sincerely thank.

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## GENERAL INTRODUCTION

Akpoko J. G.<sup>1</sup>, D. Nyamai<sup>2</sup>, B. Ramasawmy<sup>3</sup> and J. Auchu<sup>4</sup>

### Aim of the Book

This book is concerned with the status and potential of agribusiness in Africa. Studies by the World Bank (2013), United Nations Industrial Development Organization (UNIDO) (UNIDO, 2011), Food and Agriculture Organization (2011) demonstrate that agriculture and agribusiness have been Africa's largest economic and fastest-growing sectors since the mid-1990s. It is estimated that Africa now earns an average of 24 per cent of its annual growth from its farmers and their commodities (FAO, 2007; 2011; World Bank 2013). The sectors accounts for 30 to 40 % of Africa's total GDP and almost 60 % of its total export earnings (FARA, 2014). It is also estimated by the World Bank (2013) that agriculture and agribusiness together could command a US\$ 1 Trillion in Africa's regional economy by 2030. The World Bank further predicts that agriculture and agribusiness in many African countries could trigger the kind of economic transformation seen in many emerging economies in other regions of the world such as Thailand, Indonesia, Brazil, Colombia, and Ukraine. As we strive to concretize agribusiness as one of the key economic drivers and pillars of Africa's growth, it is imperative to analyze successful case studies of agribusinesses to provide us with valuable lessons for building a sound agribusiness sector in Africa. Although Africa's agribusiness potential is still largely unexploited, there are positive indications that Africa will play a very important role in global food and agricultural markets given that Africa has more than half of the world's uncultivated, but agriculturally suitable land, and has scarcely utilized its extensive water resources.

Moreover, Africa's agribusiness development prospects are set to be driven by the growing population, incomes, urbanization and cities, and development of domestic markets. These factors are already resulting in the setting up of agricultural-based industries that can address the needs for employment as well as food security issues in Africa. This book therefore aims to provide a solid foundation for students and practitioners in agribusiness to understand and develop systematic solutions to complex agribusiness management challenges in both strategic planning and operational execution within the Africa business, economic and social environment.

---

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### **Significance of this Book**

For decades, higher agricultural education institutions in Africa have been criticized because they have not responded adequately to the needs of development demanded by agribusiness. Amongst the main concerns were curricula that were incompatible with agricultural and agribusiness education objectives, lack of linkages between the educational institutions and the rural communities, and little integration among research, teaching and extension (Mabaya *et al.*, 2010). Policy makers tend to attribute youth unemployment to lack of linkages between formal University education and occupations in the workplace. Conscious of those problems, some institutions in Africa have implemented creative programmes in order to improve their educational functions. This book is one of the creative efforts to address the above-mentioned problems. In other words, one of the major frustrations faced by African University agricultural students is the dearth of text books which exemplify concepts with real-life experiences from the African environment. The need to bring concrete ideas and experiences becomes even more important when the subject dealt with is relatively little understood (e.g. agribusiness in Africa). Till date, agribusiness is yet to be offered as a single honours-degree course in many Universities in Africa at the undergraduate level. However, it is a compulsory module for students of agriculture in nearly all the Universities and colleges of agriculture. A few African Universities have agribusiness specialization at postgraduate level. In recent years, agribusiness educators have become increasingly aware of a necessity to view the profession from an African perspective and use this perspective in the development of their curriculum. It is reasonable to ask, “Why should African concepts be integrated into educational curriculum?” One of the reasons is that the world has changed and Africa is part of the global society. From this point of view, a curriculum that promotes an African perspective should address several dimensions to provide students with a better opportunity to have a broad view of the Africa in which they live.

To overcome these challenges, the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) conceptualized the need to produce a book, written by Africans with real-life experiences in the African environment, which is the first of its kind. The book has been developed with the objective to fulfill the demands for African agribusiness by reorienting management education, so that it is in line with the rapidly evolving global needs. In that context, ANAFE developed a curriculum related to quality agribusiness management to provide an orientation to the commercialization of agriculture in Africa. The curriculum was designed in a way that puts together management concepts closely linked to external forces that impact on the business decision making. The overall goal is to create competent, highly skilled and committed agribusiness and value chain professionals capable of bringing difference in commercialization of African agricultural products to enhance sustainable agricultural development in the continent.

## **Agribusiness in Africa: Critical Issues and Opportunities**

African farmers have lived and worked as subsistence farmers for too long. At the subsistence level, they have shrinking and depleted farms, an ageing population, coupled with limited interest from youths to engage in agriculture. There is an urgent need to explore the potential profitability of every agricultural investment and to determine whether it makes financial sense to proceed with the commercialization of investment in agriculture in the short, medium and long-term.

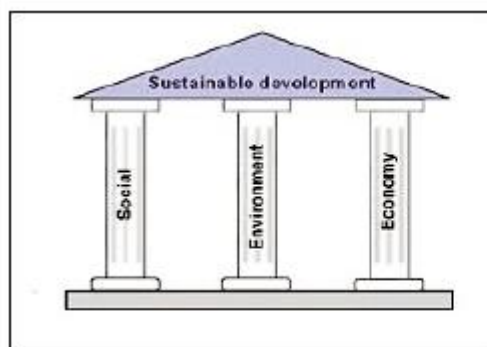
According to Webber (2007), for African rural economies to be successful, it is important that agricultural value chains achieve high productivity and efficiency levels so as to contribute to the income of the rural populations. Products originating from African agricultural activities need to compete with products from other continents at both the international and domestic levels. Moreover, given that many of the agricultural value chains in Africa have low productivities (Nin-Pratt *et al.*, 2011; Staatz, 2011), this is an obstacle for African agriculture to address poverty issues. It is therefore imperative that African agriculture achieves increased competitiveness and productivity in domestic as well as international markets. This will enable higher income and wealth to all those dependent on agricultural and agribusiness activities.

The opportunities for agribusiness in Africa are enormous (Roepstorff *et al.*, 2011) because the continent is endowed with varied agro-climatic conditions, which facilitates the production of several agricultural commodities. For instance, currently, there is a growing demand for agricultural inputs like feed and fodder, inorganic fertilizers, and bio-fertilizers. From a sustainable agribusiness perspective, organic farming has the highest potential in Africa as the application of pesticides and inorganic fertilizer are less in Africa compared to industrial nations of the world (Fuglie, 2011). The African farmers could be encouraged and educated to switch over to organic farming as there is wide scope for production and promotion of bio-pesticides and bio-control agents for crop protection in Africa. Seeds, hybrid and genetically modified crops, have high potential in Africa in the future to meet the rapidly growing population. Micro-irrigation systems and labour saving devices have good potentials due to declining groundwater level and labour scarcity for agricultural operations like ridging, planting, weeding and harvesting. The production of vegetables and flowers under greenhouse conditions could be taken up to harness the export market. Trained human resources in agriculture will take on agricultural extension services as consultants due to dwindling resources of state finance and downsizing of the government agricultural extension staff. The enhanced agricultural production throws open opportunities for employment in marketing, transport, cold storage warehousing facilities, credit, insurance and logistic support services (Binswanger-Mkhize, 2009). This calls upon Africa's governments and tertiary institutions to reform their curriculum and delivery system by not focusing solely on production agriculture but linking production agriculture to agribusiness.



In response to these challenges and opportunities, international agencies and African governments have recognized the growing role of agribusiness, as evidenced by a recent book, *Agribusiness for Africa's Prosperity* (UNIDO, 2011). The latter lays emphasis on sustainable dimension of agribusiness (see Box 1), the African Agribusiness and Agro-Industries Development Initiative (ADI), as well as the Strategic Framework for Pillar 2 on markets and agribusiness in the Comprehensive African Agriculture Development Programme (CAADP), amongst others. Building on those efforts, this book not only underscores the need to invest in agribusiness education and development but, also offers valuable and timely contribution to our understanding of how to unlock and transform agriculture for development opportunities across Africa. Equally important is the existing great potential of agribusiness in Africa as well as experiences from within and outside the continent to demonstrate how good policies and governance, a favourable business environment, strategic and well-targeted support from governments, and active participation by the private sector can create every prospect to realize that potential.

**Box 1:** Pillars for Agribusiness Development in Africa (UNIDO, 2011)



- Enhancing agricultural productivity & sustainability
- Upgrading value chains
- Exploiting local, regional & international demand
- Strengthening technological effort & innovation capabilities

The role of agribusiness is thus seen as the coordination of the production sector, input supplies and the output side of agricultural production (See Box 2). It is, essentially, a marriage of technology and economics. It is an all-embracing multidisciplinary approach to the production problems and patterns of food and fiber in a given society, including facilitating the release of workers from farming for employment in agro-allied industries arising from increased efficiency in the production and marketing of food and fiber (Rashid *et al.*, 2011).

**Box 2: The Nature of Agribusiness**

The term agribusiness was first used in 1955 to mean the sum-totality of all operations involved in production enterprises on the farm, the manufacturing and distribution of farm supplies, and the equalization-dispersion services such as storage, processing, standardization, grading, packaging, transportation and merchandising) of farm commodities and other items of trade from the farm-firm. Since then the word has evolved in its meaning and usage (Davis, 2007).

In sum, agribusiness has been defined simply as the breadth of business engaged in all aspects of agriculture, from the provision of inputs such as seeds and fertilizers, to farming, processing, marketing, distribution and retail sales. Contextually, agribusiness is the knowledge, practice, and principles of agriculture, science and technology, economics and business for the production, processing and marketing of agricultural commodities. It exists on the foundation of the entire agricultural value chain extending from farm inputs (labour, through on-farm businesses), to processing, transportation, finance and credit, marketing, retailing, policy and legislations, among others. As is the case in agriculture, agribusiness must be embedded on sustainable management of natural resources and the environment. In this book, agribusiness includes:

- (i) the production sector of agriculture, traditionally referred to as the “farmer”. The farmer or producer today could be an individual grower, rancher or dairy farmer, a large, fresh produce grower/packer/shipper, an aquaculture company producing seafood, a forest product company producing timber or non-timber forest products, apiculture, silviculture, a hunter, gatherer, an ornamental plant producer, or medicinal plant producer, etc.
- (ii) inputs, that is the various resources and services producers use for agricultural productions including computer software developers, financial services companies, insurance providers, accountants and attorneys, as well as the more traditional agricultural input companies such as seed, feed, fertilizer, farm equipment, irrigation, animal pharmaceuticals, livestock handling equipment, and horticultural supplies,
- (iii) and the output side of agricultural production such as the post-harvest processing of vegetables, fruits, fiber, poultry, wood and meat. This also includes firms involved in the post-harvest logistics of shipping and handling of agricultural products such as the railroads, trackers, ocean carriers, and airlines.

### **The value-Chain Perspective of Agribusiness**

A value chain refers to the “The sequence of steps and actors involved in a process from production to delivery of a product to the market” Webber (2007) There are a number of terms used in the literature to describe value chains namely supply chains, *filières*, global commodity chains, or distribution chains amongst others (Raikes *et al.*, 2000; Gereffi, 2006; Webber, 2007). However, all these terms describe the linkages and interactions between individuals and

organizations involved in the manufacture and distribution of a product or a service to end users. They may have different focus, for example, supply chains lay emphasis on cost effectiveness and efficiency levels; while value chains have a focus on creation of value for the product/service, chain innovation and upgrading and new product development.

The term “value chain” is preferred in this book, because it is inclusive, and incorporates supply, value addition, transactions, and market linkages.

From the point of view of relevance to this book, four main components of agribusiness deserve attention in terms of functions and participants. These are: farm supplies, farm production, product processing and product distribution.

First, the supply component of agribusiness consists of bodies that make available inputs/supplies like suitable transportation, land, capital, utilities, labour, management and other miscellaneous supplies (Olayide and Akinwumi, 2009). The participants will include carrier services companies or rural transport bureau, land development bureau, agro-service centres, institutional/formal/non-formal credit, rural labour bureau, management and training bureau and cottage industrial units. The provision and availability of cheap and continuous farm supplies will facilitate a rapid transformation of farm production from the peasant subsistence objective to a commercialized and market-oriented one.

Second, the farm production component involves the actual production of farm produce. The major activities are the production of crops, livestock, fishes, forest products and wildlife products. It is the full mobilization of small producers like small-scale farmers, cooperatives, partnerships and community efforts that can guarantee adequate supply of produce for an effective agribusiness framework (Cromarty, 2007).

Third, the processing component, usually defined as agro-industry in the African context, is perhaps the most important, and include activities such as milling, crushing, food manufacturing and processing, textile manufacturing, brewing and distilling, preserving, canning and packaging, etc. The more complex the processing, the higher the productivity and income levels attained by this component to the benefit of small-scale producers (Lodge, 2006). The participants are millers, packers, processors, cottage manufacturers, bottlers, canners, brewers, distillers, etc.

Agribusiness activities can be very useful to address poverty issues as described in Box 3.

**Box 3: Types of Pro-Poor Agribusiness Activities**

**Market enhancement** – an agribusiness that creates new or bigger and better markets for products that the poor can supply. The major examples are agri- processing and marketing enterprises.

**Supply facilities** – an agribusiness that supplies the poor with the tools needed to produce outputs profitably and safely, in the quantity and quality demanded by the market. Examples are input distributors, including providers of mechanized agricultural services.

**Rural development** - an agribusiness that provides infrastructures, facilities, and services in rural areas and that, directly or indirectly, benefits poor communities;

**Equity unlocking** – an agribusiness that requires the use of the poor's resources which are land, forests, and water, for its own operations and pays a dividend or rent to the owners or rightful users of these resources that, otherwise, have little or no market value. The main examples are farmers' and forest owners' trust schemes and corporately managed land consolidations, and

**Farmer empowerment** – an agribusiness which, for its success, depends on poor farmers being organized for technology dissemination and the coordinated production of raw material, resulting in the farmers acquiring greater economic power in factor and product markets and having greater control over their economic destiny.

### The Role of Professional Agribusiness Practitioners

In this book, emphasis is laid on the term agribusiness professional or practitioner to designate a person who plays the primary role of technical and professional business scientists within the specialized field of agricultural economics. In the role of technician or professional, the agribusiness professional is a trader and researcher delving into the intricacies of agribusiness for new knowledge and new insights, ever striving to seek relevance and practical utility to solve agribusiness problems. As a teacher, he is devoted to the effective communication of the subject matter to students, thereby helping to meet demands for professional agribusiness practitioners in his country. As a researcher, he will probe scientifically into group relationships and interactions of agribusiness practitioners, building and strengthening his academic field. He will give his attention to applied research on specific agribusiness problems. As a technician, he may be employed as a rural analyst or field consultant in the planning and operation of rural programmes and agribusiness development.

The agribusiness professional acting as consultant or rural life analyst finds himself addressing such questions as (Aines, 2008):

What is the current demand for agricultural inputs like seeds, feed and fodder, inorganic fertilizers, bio-fertilizers?

What is the level of biotechnological application in agriculture and its scope in the production of seed, bio-control agents, industrial harnessing of microbes for bakery products?

Does Africa have the potential to improve its present position in the World trade of agricultural commodities both raw and processed products?

How are agricultural products currently processed?

What agribusiness opportunities exist in the African livestock sector, in terms of meat, milk and milk products?

How could the forest resources be sustainably utilized ?

Could the African farmers be encouraged and educated to switch over to organic farming?

What opportunities exist for employment in agricultural marketing, transport, cold storage and warehousing facilities, credit, insurance and logistic support services?

Application of the knowledge and skills of agribusiness should help to find practical and sound answers to these questions.

With the great potentials for agribusiness in Africa, the demand for agribusiness professionals has also increased and the agribusiness practitioner can play an effective role as planner or, at least, as an active member of the team of planners as he uses his skills to analyse the agribusiness situation and plan sound strategies. The agribusiness professional can also serve in promoting changes in rural areas by influencing behaviour (attitudes, knowledge and skills) of rural people, assuming that these changes are desirable in the interest of national and human welfare. Accordingly, agricultural educational and rural educational institutions and other organizations concerned with rural welfare or agribusiness at present employ agribusiness professionals. Such employments may well be expected to increase as agribusiness professionals all over the world, particularly in Africa, prove themselves to be competent and effective. Their services are already much used in western countries like the United States, China and Germany by industries, private organizations and government. Demand will also continue to increase as private firms recognize the value of having an agribusiness professional on their staff list to assist in planning agribusiness campaigns for sale of their products. Yet perhaps, an agribusiness professional might be employed to assist in the business of marketing a poor

product. In addition to his role as technician or social scientist within the agribusiness context, the agribusiness professional is a person and citizen of his society. As a scientist, the agribusiness professional makes no value judgments about policies or social problems though he may, carefully, analyse them. As a citizen, however he may have strong convictions based on his personal values and may join reform movements, support causes, or sign petitions bearing on these matters. In summary, the agribusiness professional has two major roles to play notably: as a social science technician within the agribusiness context with sub-roles of teacher, researcher, consultant, planner, and rural life analyst, and as citizen and member of society with a personal system of values and conviction.

This book has been designed with a wide array of users in mind. Given its contextualized approach with focus on African case studies, it is of most direct relevance to students and practitioners evolving in the African context. The practical case studies can also be of use to policy makers, extension officers and practitioners to promote the development of agribusiness in Africa. Each chapter in this book systematically illustrate theoretical concepts, analytical tools and methodologies that can be useful to address productivity and efficiency issues in the African traditional and non-traditional value chains.

Users of this book are expected to gain knowledge and skills that will enable them to: analyze agribusiness sector investment opportunities and limitations, identify and develop potential value chains for major commodities in a country, as well as apply economic, legal, commercial and business theories and concepts in solving practical problems. Furthermore, users will be able to apply their knowledge and skills to establish and run their own private agribusiness enterprises, to assist in the identification, appraisal and implementation of agribusiness development policies, projects and programmes. They can serve as planners in agriculture and rural developmental programmes, manage agricultural enterprises, work as value chain management analysts, advise on economic and business matters. This book should enable them to apply socio-economic research in dealing with practical issues and concerns, work as researchers and extension team members/ leaders', and work as trainers, market experts, loan officers, credit experts and policy idea generators.

### **Applied Methodology to this Book**

As part of the methodology for producing the book, write workshops and other meetings sponsored by ANAFE were held to conceptualise the book. The main objective of these writeshops and meetings was to bring together a wide range of people of various disciplines and interest in agricultural risk management and agribusiness to stimulate exchange of ideas and experiences with a view to collaboratively author two contextualized textbooks.

The specific objectives were to:

Provide contextualized content for teaching agricultural risk management and agribusiness in higher institutions of learning in Africa;

Provide learning materials which could guide potential development organizations and entrepreneurs in Africa;

Participants at the Write shops and meetings scientists working in institutions of higher learning and research institutions in Africa. They included agronomists, animal scientists, soil scientists, forestry scientists, climate specialists, agricultural extensionists, agricultural economists, and, social scientists.

Given the above considerations, each chapter of the book starts with a summary followed by core concepts, definitions, chapter objectives and learning outcomes. The main body has various subsections, then focuses on case studies of particular relevance to African agribusiness to increase interest and performance of agribusiness ventures in Africa.

A simple style has, therefore, been adopted as much as possible in the presentation of materials in this book taking into consideration that most users might not have received prior training in agriculture and may not possibly have other exposure to the subject after this. Without being overbearingly complicated, the book has tried to cover most of the topics of interest to agribusiness with nearly all applications to the African society. This bias has been inevitable as a point of departure. Future editions may incorporate materials from other societies. The accompanying case studies discussed have been selected for their usefulness in directing and supporting market driven, private sector initiative and action. Unlike most agriculture texts in which the authors often try to tilt the readers to their own particular ideological camp, this book holds no particular school of thought. It is decidedly eclectic and attempts to use the various views analytically, wherever these are deemed most useful. Hopefully, this approach will produce a more balanced presentation and free the reader from the biases of the authors. The book synthesizes the large body of information and data on agribusiness in Africa to facilitate academic and practical aspects of agribusiness in tertiary institutions, development agencies and the private sector among other stakeholders. It builds on a diagnosis of specific case studies and value chains, and shows how a dynamic agribusiness sector can contribute to growth.

In addition, the book has also synthesized private sector and donor perspectives targeting leading agribusiness investors and key industry stakeholders. It shows the potential private sector dynamism that could be unleashed if some of the barriers to investment in Africa such as poor infrastructure, fragmented markets, poorly functioning input markets, difficulties accessing critical natural resources (land and water) and finance, and inadequate skills and technologies are removed. The book, also, offers practical, public policy interventions and



advice that draw lessons from successful experiences of countries from within and outside Africa aimed at improving the economic performance of the agribusiness sector.

### Outline of this Book

The book is organized around five sections subdivided into nineteen chapters as mentioned below. The Introduction summarizes the current size and structure of the agribusiness sector, examines the immense potential in terms of market prospects for agribusiness growth and its associated development impacts in Africa, availability of natural resources, and strategic investors interest and partnerships. It, also, outlines the major constraints on realizing the potential of agribusiness and evaluates possible solutions to those constraints over the short, medium and long terms, while noting that agribusiness is large, highly heterogeneous and dynamic.

**Section 1:** In this section regarding key steps in setting up an agribusiness in Africa, the initial considerations are defined. This contains Chapter 1: Feasibility studies in agribusiness, Chapter 2: Case Studies in Crop and fodder Products, Chapter 3: Case Studies in Livestock Products, Chapter 4: Case Studies in forest and non-timber products, Chapter 5: Case Studies in horticultural products and Chapter 6: Case Studies in agricultural inputs.

**Section 2:** This section addresses Agribusiness Marketing. This topic is analysed through two chapters notably: Chapter 7: Fundamentals of Agribusiness marketing and Chapter 8: Agribusiness marketing strategies. This section discusses the sector's immense potential in terms of regional and global market prospects and competitiveness.

**Section 3:** This section addresses cross-cutting and emerging issues in the agribusiness which are of interest for all stakeholders from students, researchers, agri-food value chain actors down to practitioners. It has seven chapters. Chapter 9 is on micro and small-scale agribusiness in Africa and describes the nature and characteristics of micro and small-scale enterprises which make them unique in terms of management style and approaches from a developmental perspective. Chapter 10 touches on agribusiness entrepreneurship and incubation, and addresses the role of agricultural incubators in imparting entrepreneurship skills to young graduates in the agri-food sector. Chapter 11 on Financial management emphasizes the importance of proper financial management to enhance the ability of agribusiness managers to make better decisions. Chapter 12 on Policy framework and private-public partnership which puts forward the relevance of reviewing agribusiness policy, legal and institutional frameworks in Africa to position the agribusiness sector to be competitive with the rest of the regions and to transform agriculture towards increased productivity, agribusiness development, and infrastructure development Chapter 13 on Risk management strategies for agribusiness analyses the importance for agribusiness managers to be aware about risks in the agri-food sector and to acquire the necessary skills



to manage those risks to meet the objectives of their enterprises. Chapter 14 on Agribusiness research and extension highlights the key role played by research and extension services to promote development of agri-food value chains in Africa. Lastly Chapter 15 on Gender and capacity development for agribusiness allows readers to appreciate the impact of gender issues in the African context and the way these affect agribusiness production.

Finally, this book is written in parallel with a sister book on **“Risk Management in Agriculture”**. While the book on agribusiness discusses challenges and opportunities associated with agribusiness in an African context, using a business, economic, environmental and social analytical frameworks; the book on agricultural risks management addresses a wide range of issues associated with risks and uncertainties in agriculture, in general. The two books also take into cognizance the non-French speaking potential user. Consequently, the few chapters written in French start with written summaries in English. Both books could not have been timelier and their relevance to Africa makes them unique.

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# Section 1

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## Agribusiness – Case Studies of Products and Services



## Section 1 Introduction

Using the definition of agribusiness simply as the breadth of businesses engaged in all aspects of agriculture, from the provision of inputs such as seeds and fertilizers, credit; to farming, processing, marketing, distribution and retail sales, this section focuses on agribusiness enterprises in products and services. The world population growth today presents many challenges in all facets of production and particularly in agribusiness products and services. This section aims to introduce the reader to different aspects of viable agribusiness enterprises in the agricultural value chain consistent with current efforts at mitigating some of the production challenges.

Organizationally, the section contains chapters 1 – 6 of this book. **Chapter 1** lays emphasis on the feasibility of setting up agribusinesses in the African context. **Chapter 2** which is on agribusiness enterprises in crop and fodder products provides the impetus to develop interest and capacities of the reader in crop and fodder production using a case study from Côte d'Ivoire. **Chapter 3** which is on agribusiness enterprises in horticultural products provides a better understanding of the value chain in vegetable production and examines the immense potential in terms of market prospects for agribusiness growth and associated development impacts in Africa. **Chapter 4** presents agribusiness enterprises in the forest and non-timber products sector. It deals with the context, concepts and definitions of common terms in the domain of forest and non-timber forest products followed by practical case studies on agribusiness enterprises in non-timber forest products. **Chapter 5** focuses on agribusiness enterprises in biological inputs consisting of fertilizers, high yielding seed varieties and agro-chemicals. The chapter discusses, with locally relevant examples, some specific African case studies. Finally **Chapter 6** puts forward the importance of agricultural inputs for the success of agribusinesses. Throughout the various chapters, guidance is illustrated through specific case studies and examples of successful agribusiness enterprises in Africa. Indeed, the use of local agribusiness enterprises' case studies from Africa is the strength of this section.



# Chapter 1

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## FEASIBILITY STUDIES FOR AGRIBUSINESS

Mafimisebi T. E., M. Mzuku, A. O. Akinrinola, O. A. Thompson,  
E. O. Mafimisebi and J. F. Obiri

### Summary

Funding is a major constraint to agribusiness development in Africa and this is probably why many agribusinesses remain at small-scale level. At these levels, agribusinesses in Africa are grossly ineffective to bring about a positive turn-around in the economies of African countries. There is therefore the need for existing or prospective agripreneurs to be able to attract funds (in form of loans or grants) from the formal sector or external funding agencies for agribusinesses. A feasibility report is a necessary precondition for assessing loans and grants.

This Chapter discusses the step-by-step procedure for conducting a feasibility study, the type and amount of data to be collected as well as how to collect and analyse the data. Also discussed is the method of writing a good feasibility report that contains all the essential components necessary for a prospective or existing agribusiness to be funded. Specific issues addressed include: identification and justification of agribusiness idea, technical aspects of feasibility report, assessment of the competitive environment, financial aspects, personnel issues, marketing and market plan as well as environmental considerations. For feasibility reports to attract financial support from donors, some additional information needs to be included by the fund seeker. This information is presented under the acronym SLEPT. To underscore the overriding importance of the financial aspect of a feasibility report for assessors' final decision, the financial analysis section of a past feasibility report was presented to explain how this section is used for decision making.

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## *Etudes de faisabilité pour l'Agribusiness*

### **Résumé**

*Le financement constitue une contrainte majeure pour le développement de l'Agribusiness en Afrique. C'est sans doute pourquoi plusieurs entreprises agricoles demeurent à l'échelle de petites exploitations. A ce niveau, l'entreprenariat agricole en Afrique a du mal à operer un changement significatif dans les économies des pays africains. Il y a donc besoin de favoriser l'émergence d'entrepreneurs agricoles capables de capter des fonds (sous forme de prêts ou de subventions) du secteur formel ou d'agences de développement agricoles. Dans ce contexte, l'étude de faisabilité constitue une condition indispensable pour l'accès aux prêts et financements. Ce chapitre traite de la procédure et des étapes de réalisation d'une étude de faisabilité, le type et le volume de données à collecter, ainsi que des méthodes de collecte et d'analyse. La methode de redaction d'un bon rapport pour l'étude de faisabilité, qui contient tous les éléments essentiels concernant l'entreprise agricole existante ou projetée à financer, est également présentée. Les questions spécifiques abordées comprennent : l'identification et la justification de l'idée projet, les aspects techniques de l'étude de faisabilité, l'évaluation de l'environnement concurrentiel, les aspects financiers, les questions relatives au personnel, au plan du marketing et de la commercialisation, ainsi que des considérations environnementales. Concernant l'étude de faisabilité, pour l'obtention du soutien financier des donateurs, des informations complémentaires doivent être fournies par le demandeur de fonds. Ces informations sont présentées sous le sigle SLEPT. Afin de souligner l'importance primordiale de l'aspect financier d'une étude de faisabilité pour une décision finale des assesseurs, la partie analyse financière d'une étude de faisabilité est présentée pour expliquer comment cette section est présentée pour aider à la prise de décisions.*

### **Introduction**

Investible fund is necessary in financing agribusinesses which have important roles to play in the overall economic development of African countries. The volume of funds required to start agribusinesses that can transform the economies of African countries surpasses that which can be sourced through the credit/loan from informal sources (friends, relatives, cooperatives and traditional credit associations). It is true that in Africa, banks are generally unwilling to lend to agriculture and agriculturebased businesses because of a number of reasons which include high administrative costs, low repayment and the higher risk of loss of investment (Mafimisebi, et al., 2010). Thus, a major age-long constraint to the development of agribusiness sector in Africa is insufficient investible funds. Since most young, prospective or existing agripreneurs with bright agribusiness ideas are often faced with fund constraint, the need arises to raise a major portion of the fund for agribusiness from formal sources (commercial banks, credit associations, donors and lenders). If the required financing for an agribusiness is to be obtained from these formal sources, then, a feasibility

report is usually required. The feasibility report will enable institution officials get acquainted with the business idea and its chances of success in the proposed environment and thus inform their decision on the fundability or otherwise of the agribusiness.

Apart from the apathy by banks to lend money to agriculture and agro-allied businesses in Africa, the poor quality of feasibility studies and consequently, feasibility reports submitted by prospective agripreneurs, has contributed to the high rejection rate by banks and other funding institutions. In most cases, some figures used in feasibility reports are bogus and unreasonable while some vital report components necessary for making the decision to fund proposals are often missing (Akinwumi, 1994). In spite of the general apathy by banks to fund agribusinesses, it is doubtful whether a formal sector funding institution that lives up to its responsibilities will refuse to fund a promising business idea which has been researched and presented in a faultless feasibility report. Thus, a properly executed feasibility study stands a chance of being funded. For the fund seeker (proponent) to properly conduct the feasibility study and present its report for favourable funding decision, a number of points need to be understood, which are addressed in this Chapter.

A feasibility study is a study carried out to establish that a business idea (project) is executable in a specified location, able to pay back the funds invested and return profit to the investors. In assessing feasibility reports, there is the tendency for some formal sector bodies (e.g. commercial banks) to concentrate on the financial aspect because their greatest concern is recouping their capital investment on the project. However, the decision to fund or not to fund a project proposal is more holistic when it is not only based on financial aspect but also on other considerations such as social, technical, economic and environmental aspects. What is expected in the report of a feasibility study conducted for the purpose of raising credit/loans from a financial institution are discussed below.

### **Learning objectives**

At the end of this chapter, the reader is expected to be able to do the following:

- a) Define or explain a feasibility study;
- b) Identify all the essential components of a feasibility study;
- c) Carry out a feasibility study for a prospective agribusiness; and
- d) Present the feasibility report in an acceptable and fundable way.

## **Identification/Justification of the Agribusiness Idea**

The prospective agripreneur is expected to state why the agribusiness idea is worth investing in by identifying its opportunities in its locale (the place at which the business is to be located). It is necessary to demonstrate that the fund seeker is not just “joining the bandwagon” by following a line of business because others are successfully doing it. The proponent must recognize the fact that no two agribusinesses are exactly the same even in the same location. S/he must identify the product intended to be put on the market and highlight how it will be different from competing products. This means that the agripreneur must establish that there is a gap (e.g. insufficient supply) for the intended product using data on demand-supply (if available) for similar products/services already on the market. Sometimes, the demand-supply gap is dynamic and one must demonstrate understanding of this dynamism since it may lead to seasonality in price, sales and profit. It is necessary to make 5-10 years projection to justify the need for investment in the intended agribusiness. It is a sustained demand-supply gap that justifies an agribusiness opportunity. It is also necessary to state the unique attribute(s) of the product or service that distinguishes it from other competing products, which will help to secure a reasonable and increasing market share in the future. This is very critical for initial success and continued stay in business. The agripreneur will have to state all the potential advantages the agribusiness has over existing competitors. For example, s/he needs to state the prevailing average price, distance between production points and market for existing products or services and whether or not the prospective agribusiness will have an advantage over existing ones if products or services are sold at a lower price or the agribusiness is sited closer to the market. The agripreneur should state clearly whether or not s/he is prepared to observe more business hours such as operating late into the evening or night, weekends and on public holidays to serve certain segments of the market. This section needs to be convincingly written so that the intended funders will have no doubt that what is being proposed is going to be a unique and successful agribusiness.

## **Technical Aspect of Feasibility Study**

The availability of factors of production such as land, layout of factory/production facilities, availability of appropriate technology (source, price and efficiency), expertise, raw materials and complementary infrastructure in the agribusiness environment, is discussed under this section. The issue of land and land tenure is very critical in every agribusiness because the factory and production facilities will be built on land. Also, land accounts for a considerable proportion of fixed cost for agribusiness. Issues relating to land are very contentious in Africa, even among members of the same family, thus prospective agribusiness owner can easily be duped during the process of acquiring land for agribusiness. One of the ways in which a prospective agripreneur seeking funding from financial institutions shows commitment to the proposed agribusiness is by legally

acquiring the land and showing proof of legal ownership for the land for the duration of the business. Thus, in the feasibility report, a fund seeker is required to state the area of land available for the agribusiness, its location, a description of how it was acquired (with the necessary documentations to back it up) and its cost for the purpose of determining owner's equity contribution to the finance of the agribusiness.

The lay-out of the factory buildings must be described. It must show the proponent's understanding and concern for the issues of health and safety of workers and customers, preservation of the environment, sufficient ventilation for installed machines and prevention and mitigation of factory mishaps (e.g. accidents and fire). The technology to be used in producing the product and its source(s) must also be well stated to convince prospective funders. The effect of use of such technology on product quality, extent of human labour needs and unit price of product/service must also be stated especially when they are favourable for the agribusiness. If the use of the proposed technology leads to higher cost and higher unit price of product/service in the short run, it is necessary to explain how the agribusiness will survive in the short run. The proponent must state whether or not it is possible to pass extra cost to consumers by charging a little additional price to affect the demand and thus total revenue for the product/service. What will happen to unit price of product on the long run and whether it is favourable or unfavourable to the agribusiness must be clearly stated. It is advisable that the two scenarios of costs and prices in the short and long run be used to justify the efficiency and effectiveness of the intended production technology.

Guaranteed source(s) of raw materials are very important for the success and continuity of an agribusiness. Many agribusinesses in Africa operate below 50% capacity due to paucity of raw materials while some have closed down for lack of raw materials to use for production. There is no need installing a machine that can process 2000 tons of cassava in a month when all that the factory can get in a month is 250 tons. The proponent needs to state the sources of his/her raw materials and the estimated quantity from each source to show that the installed capacity of the machines will be met. It is required that the proponent convinces the funders that adequate and timely supply of high quality raw materials to the factory is guaranteed. The mechanisms required to achieve this must be clearly stated. These mechanisms may include special arrangements such as contract farming, supply of inputs such as credit and improved seeds to farmers, supply through contractors or paying of remunerative prices/premium to farmers to induce them to sell their produce to the agribusiness.

The availability of experts to handle the machines is an important item under technical feasibility and this should be clearly stated. There are machines that must be installed and first handled by foreign experts recommended by the manufacturers of the machines. It is not bad if the technology leads to better quality and lower prices that can culminate in the emergence of the proposed agribusiness as a market leader in the future.

The caution here is that there must be plan for training of local people to take over operations, repairs and maintenance of machines from foreign experts. It will be too costly to seek experts from abroad every time the machine breaks down. In addition to the cost of maintenance, the agribusiness may suffer costs related with loss of workdays, loss of goodwill and sometimes inability to meet customers' orders, which can lead to protracted legal issues.

Under technical feasibility, the fund seeker also needs to describe availability of appropriate public or private complementary infrastructure that will enhance the operations of the agribusiness but which cannot be put in place by the agribusiness. For example, in the positioning a factory that will produce a high volume of agribusiness product, it must be considered that a large number of vehicles and trucks will pull up inside or in front of the factory premises every day for business transactions, loading and off-loading. Thus, there must be sufficient parking space and good access roads must be available in the area in where the factory will be located.

### **Assessment of the Competitive Environment**

The external environment is one of the vital factors determining the survival of a new agribusiness. The external environment represents individuals and companies that are presently dominating the scene in the production of a similar product/service and therefore have better understanding of the dynamics of the proposed agribusiness compared to the newcomers. As these existing individuals and company owners will normally feel threatened by a new entrant into the production of a similar line of agribusiness product/service, they can take steps capable of "choking the new business to death. Taking cognizance of these important stakeholders in planning a new agribusiness is referred to as assessing the competitive environment. Thus, the proponent needs to do a survey of present producers, the quantity they produce/supply, the region where they are concentrated and how well organized their distributors or distributive networks are. It is also important to know the technologies they are using, especially in terms of plants and machineries and the advantages these confer on their agribusinesses. Sub-sections to be screened will include estimation/survey of present level of supply and suppliers of the product/service, estimation of demand, and intensity of capacities of competitors, 3-6 year supply projection, and 3-6 year demand projection and present market prices for a unit of similar products/service already on the market.

### **Financial Aspect of the Feasibility Study**

This is a very important section of the feasibility report because prospective funders concentrate attention on the data presented to make a decision. Important things to be mentioned include: estimates of cost of production with regard to costs of major raw materials and other inputs), timing and cost of funds to be borrowed, equity and loans, target price of product/service, financial

analysis and projected income statement and cash flow. The best way to get estimated costs of raw materials is to take the average costs incurred by the major industry leaders and do a projection of at least 6 years. For cost of machines/plant, the internet is a dependable source and prices obtained from the internet can be confirmed from local distributors of such plant/machines. Costs of funds can usually be obtained by discussing with two or three financial institutions about their interest rates and repayment plans if they are willing to advance a loan for the business. The total estimated fund required for the agribusiness must be stated and the proportion of the owner's contribution must be stated. For funders to feel comfortable to put in the required financing in form of non-equity contribution, equity or owner's contribution should be between 20-25% of total estimated funds. Also, estimated price must be given for the intended product and this price must be projected for at least 5 years so that the trend in prices can be clearly revealed. Estimating the target price of a new product is not an easy exercise. In determining the price, cognizance of present prices charged by industry leaders for similar products must be taken into view. Also, the fact that the product is new and just entering the market. One therefore must be as conservative as possible to avoid stifling the product through an excessively high price. With the data gathered at this stage, a financial analysis should be carried out so that values can be reported for the three most important indicators for determining the profitability or otherwise of a new agribusiness. These profitability indicators are cost benefit ratio (B/C), Net Present Value (NPV) and Internal Rate of Return (IRR). Using information from Adegeye and Dittoh (1985), these indicators are explained in details below.

**Benefit-Cost Ratio (B/C):** This is the ratio of discounted costs to discounted revenue. A B/C of greater than unity is desirable for a business to qualify as a good one. Mathematically, B/C is expressed as:

$$B / C = \frac{\sum_{t=1}^n \frac{Bt}{(1+r)^t}}{\sum_{t=1}^n \frac{Ct}{(1+r)^t}} \quad (1)$$

Where

Bt = benefit in each project year

Ct = cost in each project year

n = number of years

r = interest or discount rate

**Net Present Value (NPV):** This is the value today of a surplus that a project makes over and above what it would make by investing at its marginal rate. Alternatively, it is defined as the value today of all streams of income which a project is to make in future. For a good business, NPV must be positive at the chosen discount factor. Mathematically, NPV is given as:

$$NPV = \sum_{t=1}^n \frac{Bt - Ct}{(1+r)^n} \tag{2}$$

Where Bt, Ct, n and r are as earlier defined.

**Internal Rate of Return (IRR):** It is the rate of return that is being expected on capital tied down after allowing for recoupment of the initial capital. The IRR is the rate of interest which equates the NPV of the projected series of cash flow payments to zero. It is also called the yield of an investment. Mathematically, it is given as:

$$IRR = \sum_{t=1}^n \frac{Bt - Ct}{(1+r)^n} = 0 \tag{3}$$

Practically, the IRR is usually obtained through a series of manipulations where two discount factors give rise to two NPVs. One of the two NPVs must be positive at the lower discount factor and the other negative at the higher discount factor, which indicates that the project can earn higher than the lower discount factor and lower than the higher discount factor. In this trial and error method, the IRR is given as (Adegeye and Dittoh, 1985):

$$IRR = \text{rate} + \text{discount rates} \left( \frac{\text{NPV at discount rate}}{\text{absolute difference between the two NPVs}} \right) \tag{4}$$

The performance of the agribusiness under various scenarios of changing prices of key inputs and product can be tested. This is what is called sensitivity analysis. The combined cash flow and sensitivity analysis has to be carried out to ascertain the extent of profitability of the agribusiness to identify the factor(s) to which profitability is sensitive.

### Personnel Issues in feasibility study

The points to mention and explain here will include management structure, organizational structure (organogram), job description and qualifications of staff

to be recruited, labour scheduling and salaries/allowances. The management structure should be clearly stated so that there will be an established line of authority for smooth day-to-day operation of the agribusiness. Usually, the line of authority is captured with an organogram that shows who coordinates what and who reports to who. This has to be done for orderliness in the operation of the agribusiness and it is critical for success. Job descriptions for the various workers to be employed must be clearly written such that the qualifications required of workers will easily come to the fore. This will allow prospective funders to see that qualifications match job descriptions to guarantee the success of the agribusiness in a competitive world. How labour is scheduled per period of time should be indicated and the salaries and allowances of workers to be engaged must be stated. One maxim in proposing salaries and allowances is that if you cannot pay the highest in the industry, then what is paid must not be lower than the industry average. A living wage that is commensurate with the qualifications must be paid to the workers. If this is not done it will, in the long run be detrimental to the progress of the agribusiness through issues like work absenteeism, pilfering, taking part-time job outside the agribusiness and other fraudulent financial practices.

### **Marketing and Market Plan**

Issues to mention and treated marketing plan will include determination of market share, similar products on the market and what buyers' feel about each of them, ratings of desirable attributes for each of the products as well as the overall ratings of each product by buyers. These can be accomplished through a market survey. The overriding importance of the market survey is to situate the proposed product within the context of the existing market potential and estimate what proportion of the market (termed the market share) that the product can capture at the initial stage of introduction. The market potential is the total level of sales possible in a target market for all firms (Seperich et al., 2002). Steps that will be taken by managers of the agribusiness to maintain and increase the market share in the long run must be stated. There are established methods in the literature for conducting market surveys and estimating the market potential and market share. This can be read up in standard texts on agricultural marketing. Steps to be taken to improve market share in the long run may include using branding, pricing and advertisement strategies, marketing strategy, marketing policy, capturing consumer loyalty and capitalizing on competitive advantages.

### **Environmental Considerations**

#### **Environmental Impact Assessment in Feasibility studies**

Environmental Impact Assessment (EIA) is a study conducted to determine the possible effects of a proposed project on the environment, and suggest



appropriate mitigation measures (Pubule et al., 2012). A large development project, such as an agribusiness enterprise, can affect various components of the environment, and therefore, the effects or impacts can be broadly classified as being of a biophysical or socio-economic in nature. It is important to know these impacts as they can determine the success or failure of an agribusiness. EIA, being a systematic evaluative process, elucidates all the likely impacts of a project. The biophysical impacts comprise the biological (e.g. impacts on animals and vegetation) and physical (e.g. effects on soils and water resources). The socio-economic impacts have to do with the social (e.g. effects on human health) and economic (e.g. creation of employment for the local community).

For proposed projects with expected significant environmental impacts, it is legally required that the environmental, social and economic impacts have to be identified before a decision is taken whether or not to proceed with it (e.g., Botswana Government, 2011). EIA is therefore an important part of the decision-making process and sustainable development (WCED, 1987). It helps to ensure that before a project is approved, the environment is given due consideration alongside economic and technological considerations.

The assessment of impacts of various alternatives helps to ensure that an EIA is not only confined to the proposed development project, but rather it should have a wider scope. These alternatives may include the most environmentally friendly technology, alternative locations, or the no-action (or zero) alternative. EIAs also need to consider the issue of what happens after the lifespan of the project (e.g. closure of a large piggery project and its decommissioning).

In addition to environmental assessments for individual projects, the impacts of policies, plans and programmes is also important for sustainable development to be achieved. This type of assessment is referred to as Strategic Environmental Assessment (SEA) (Nooteboom, 2000). For example, a national government may propose a programme to encourage and assist farmers to venture into particular projects such as poultry, piggery, or horticulture. The programme may have positive impacts such as creation of wealth and employment, as well as attaining self-sufficiency in food production. However, such a programme could have negative environmental impacts which should also be studied so that necessary measures are recommended to reduce pollution and land degradation.

### **Responsibilities of the Agripreneur**

The agripreneur introduces the proposal to start the agribusiness and therefore, is responsible for ensuring that an EIA is carried out, and that the environmental management measures contained in the EIA are implemented. Although the agripreneur usually engages a consultant to conduct the EIA, the responsibility for implementation lies with the agripreneur. The agripreneur should not consider an EIA as just part of the approval process, but an action plan to be followed during construction, implementation and decommissioning

of the agribusiness. Although project design has always been influenced by EIA, agripreneurs usually make the mistake of considering EIA as an add-on exercise rather than a fundamental part of project design (Chibueze et al., 2013)

The EIA continues alongside the feasibility studies of the proposed project by conducting various activities. The data collected and documented will be used, together with other data from project feasibility studies, in the detailed project design. Data on the relevant physical, biological and socio-economic conditions of the environment are useful for future monitoring of environmental changes caused by the project during its implementation. The possible impacts of the proposed project on the environment need to be identified and assessed for their significance and their possibility of occurrence predicted, during the project feasibility studies. Mitigation measures should also be identified, because they will require management or institutional changes or additional investment (FAO, 1995). An environmental management plan (EMP) document is part of the EIS, and it provides a framework for managing the environmental aspects associated with the proposed project. An EMP provides a guide for the administration of mitigation measures in all project phases (construction, operation and decommissioning). The monitoring programme is an important component of the EMP because it will help to assess the effectiveness of mitigation measures, as well as compliance by the proponent.

### **Other Socio-economic and legal Considerations**

For large agribusinesses that are to be funded by foreigner partners and external funding institutions, there are some other indices that must be reported. These other considerations called SLEPT are discussed below.

**Social Environment** - The socio-cultural set-up of the environment in which the agribusiness will operate will also be considered in planning. In most countries in Sub-Sahara Africa, socio-cultural factors and religion determine the consumption habits of people. Thus, operating a pork vending business in a Muslim dominated area may not be advisable and worthwhile.

**Legal Environment of the Project** - The expected regulatory legal requirement of each country or state must also be considered in planning an agribusiness.

**Economic Environment** - The economic position or dominance of the country will also be considered. This will take into consideration the macro-economic environment in recent years. The investment climate through the foreign direct investment (FDI) to the country will be considered. The external reserve of such country will be looked into.

**Political Environment of the Project** - The political environment of the country in question will be considered. For example in Nigeria, the political landscape is relatively calm and stable following successful transition to civilian rule in 1999. Since the achievement of the first successful transition from one

civilian government to another in May 2007, the implementation of a credible reform programme has resulted in improved global perception of Nigeria as evidenced by the following:

- Improvement in ranking on the Transparency International Corruption Index (up from 142 in 2006 to 121 in 2008) making it one of the most improved countries over the period.
- Exclusion from the Financial Action Task Force list of non cooperative countries in the fight against money laundering and terrorist financing.
- The implementation of the Niger Delta Development Plan is expected to reduce the crisis in the region.

**Technological Environment** - The pace of technological development in the area in which the agribusiness will operate should also be considered. Such indexes include the following: internet access, use of real-time operations by the banking sectors, adoption of ATM technology and card payment system and power availability per hour.

### **Conclusions**

An environmental impact assessment (EIA) study is required for proposed agribusiness enterprises that are expected to have significant impacts on the environment, in many countries. Information generated during the respective EIA stages is incorporated in the appropriate project cycle phases, so that the environment is given due consideration during project implementation. In countries where EIA is a legal requirement, an agribusiness enterprise will not be given a license to operate unless an EIA has been conducted and approved. Most financial institutions also require the proponent to provide proof that an EIA has been approved, before they can consider funding for the proposed project.

### **Study questions**

1. Briefly explain why it is important to take measures to ensure that agribusiness enterprises do not cause environmental degradation?
2. Why it is important to consult stakeholders during an EIA study?

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## Chapter 2

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### AGRIBUSINESS ENTERPRISES IN CROP AND FODDER PRODUCTS

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#### Summary

To attract investors to agriculture and agro-industry and ensure that investments lead to the creation of jobs, there is a need to produce highly skilled workforce in all technical aspects of agriculture and agribusiness. However, in African countries, the formation of entrepreneurial skills and know-how is not accepted as an academic discipline in its own right. This chapter provides support that will refocus and strengthen the university and professional training in agriculture and develop the capacities for crop and fodder production and add value to these agricultural products by processing. Specifically, the chapter seeks to promote agribusiness in Africa around food and fodder production and their processed products using cassava as an example. To contextualize this and highlight the role of gender in agriculture, the case study of rural women farmers in Côte d'Ivoire, who are achieving greater financial autonomy and economic independence through producing and processing new improved varieties of cassava into attiéké, (an added-value local Ivorian dish) and marketing it, is discussed. Secondly, another case study in fodder production and marketing in east Africa is presented.

#### *Entreprise d'Agrobusiness dans la production d'aliments et de fourrage*

#### *Résumé*

*Pour attirer les investisseurs à l'agriculture et à l'agro-industrie et garantir la création d'emploi à travers l'investissement, il y a besoin de produire la main-d'œuvre hautement qualifiée dans tous les domaines techniques de l'agriculture et de l'agrobusiness. Cependant, dans les pays africains, la formation aux affaires et au savoir-faire n'est pas admise comme une discipline scolaire en tant que tel. Ce chapitre fournit le soutien qui permettra de recentrer et de renforcera la formation professionnelle et universitaire en agriculture. Il permettra, en outre de développer*

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*les capacités pour la production de fourrage et apporter de la valeur ajoutée à ces produits agricoles par la transformation. Spécifiquement, le chapitre vise à promouvoir l'agribusiness en Afrique autour de la nourriture et de la production de fourrage, ainsi que leurs produits traités en utilisant le manioc comme exemple. Pour contextualiser ceci, accentuer et mettre en exergue l'approche genre, en agriculture, une étude de cas de fermiers femmes rurales en Côte d'Ivoire, qui ont acquis une grande autonomisation financière et une indépendance économique par le biais de la production et de la transformation de nouvelles variétés améliorées de manioc en ATTIEKE (le plat ivoirien local de valeur ajoutée) et son marketing est discutée. Deuxièmement, une autre étude de cas en production de fourrage et sa commercialisation en Afrique de l'Est est présentée.*

## **Introduction**

One billion people around the world are still chronically poor and a large number of this live in Africa (Chen and Ravallion, 2007). Significant progress has been made in the definition and measurement of poverty, in the analysis of its causes and the impact of policies on its prevalence. This has resulted in the understanding that introducing new interventions in agriculture in Africa is the most effective way to reduce poverty as evidenced by the report of the World Bank on agriculture (World Bank, 2008). Indeed, Agricultural growth and productivity remain central to poverty reduction, particularly in the poor countries in Africa where a large share of the population relies on agriculture and agribusiness for their livelihoods. Furthermore, most of the Sub-Saharan Africa's poor, live in rural areas and depend on agriculture as a business enterprise. Consequently, in recent years, the renewed focus on agriculture as evident by the formulation and implementation of policies and development programmes for the African continent agricultural sector. Similarly, at the international level, emerging policies of the African Union (AU) leaders and sub-regional organizations (ECOWAS, ECCAS etc.) supported by international organizations such as the United Nation's Food and Agriculture Organization (FAO), the United State Industrial Development Organization (UNIDO) and some banks like the African Development Bank (AfBD) and the International Fund for Agricultural Development (IFAD) have endeavour to invest in small-holder agriculture and agribusiness in Africa (FAO, 2012). These efforts have brought about some relative achievements in economic growth and food security,, improved livelihoods and poverty alleviation across the continent.. These initiatives also have the potential to solve the thorny problem of unemployment in Africa by promoting agricultural entrepreneurship and agribusiness for young graduates and non-graduates.

However, together, agriculture and agribusiness currently account for only about 45 percent of Gross Domestic Product (GDP) in Africa. In many developing countries, agribusiness plays a vital role in economic development, accounting for the major portion of the GDP, employment, and foreign exchange earnings.

This is particularly with reference to agriculture in Africa which accounts for only 25 percent of the continent's GDP, and 70 percent of employment. In the of agribusiness, despite its importance, the Sub-Saharan Africa's agribusiness sector faces numerous challenges. In many countries, most crops are produced by small-scale farmers with limited mechanization and capacity, leading to low yields. The unorganized markets, price controls, and poor infrastructure also contribute in making the sector unattractive. Many of the continent's agricultural products such as yam, potato, cassava and fodder including grasses, shrubs are not globally competitive or merely provide low profit margins for the producer. This means that although the potentialities exist, Sub-Saharan Africa is ill equipped to meet its food requirements, which are set to be doubled in the next 30 years or even sooner.

To further address these challenges, innovative techniques are increasingly developed within sub-regional and national agricultural research institutes at each level of the agricultural and agribusiness value chain. These are developed in order to improve crop production and yields, manage the costs and quality of products, add value through better post-harvest operations. Indeed, the increase in global food prices since 2008 has increased the desire to produce high quality products especially by those poor countries in sub-Saharan Africa. Nevertheless, all survey reports show that poverty is still high in rural areas and that the millennium goal of halving the population who suffer from hunger by 2015 will not be achieved in most African countries (World Bank, 2008) if much efforts are not given.

Currently, some examples of promising agricultural enterprises, especially in rural areas in Africa, are now available . One good example is the case of women farmers in Côte d'Ivoire who are achieving greater autonomy and economic independence, attributed to the production, processing and marketing of new improved varieties of cassava (Plate 2.1). This promising agro-industrial initiative, which also highlights the question of gender in the development of agriculture and agribusiness in Africa, justifies the need for production of improved practices . Indeed, it shows that food or fodder crops production and processing can play a special role in poverty reduction and in food security and increasing the income of small-holder farmers, creating jobs in rural areas and improving the competitiveness of food supply chains in Africa.





**Plate 2 .1 :** Rural Women Associations in their Cassava Farm  
(Gomon, Côte d'Ivoire)

This chapter is about how to promote agribusiness in Africa through food and fodder production and their processed products focusing mainly on cassava. Two case studies relevant to crop and fodder production and commercialization are presented at the end of the chapter.

### **Learning Objectives**

At the end of this chapter, agribusiness lecturers, students, extension workers, pastoralists and farmers will be expected to have gained insights into viable business in fodder production. Specifically, at the end of the chapter, students and practitioners would be able to:

- i. appreciate fodder production as an agribusiness;
- ii. describe the importance of fodder production in Africa;
- iii. identify the potential indigenous and exotic fodder trees and shrubs in Africa; and
- iv. present at least two crop and fodder production and marketing experiences from Africa.

### **Learning Outcomes**

At the end of this chapter, students and practitioners will:

- i. learn about crop and fodder production as important agribusinesses in Africa;
- ii. vividly identify the potential indigenous and exotic fodder trees and

- shrubs and the highly preferred, with reasons for their preferences;
- iii. learn about fodder production and marketing experiences from, Africa; and
  - iv. propose at least two agribusinesses each in crop and fodder production and marketing.

### **Agribusiness Enterprises in Crop Products**

Among seven billion people on the earth, one billion go to bed hungry every night and unfortunately most of them come from the African countries (Clein, 2003). However, recent reports have shown that, in most African countries, agriculture supports the survival and well-being of up to 70 percent of the population. Also, at least two-thirds of Africa's poor people, live in rural areas, depending mainly on agriculture and natural resources for their livelihoods.

The irony is that, despite the majority of the total labour force working in agriculture, the African continent is still unable to feed its growing population. As a result, Africa spends between US\$15 and 20,000 million on food imports annually, in addition to the US\$2,000 million which is received in annual food aid (Toutain *et al.*, 2009). These huge amounts of money could be used to revitalize agriculture, particularly the high-input required agriculture which yields are reduce as a result of low input use.

Crops and fodders products are essential for human and animal consumption. They greatly contribute to food security in the world. However, the low yield of these small-scale products for the exponential population growth in Africa has contributed to the recent global food crisis which caused riots in many African countries. This alarming situation has led international organizations to pose the following questions: i) What are the solutions to the current global food crisis? ii) what can urgently be done to remedy the low yield situation?

Reflections on the above cited questions at the international level, by renown international experts, including leaders, professionals, development partners, etc, have revealed that as far as the African countries are concerned, and considering their great agricultural potential, the way forward to overcome the food security and poverty situation requires redirecting government's policy and investments to improve smallholders agricultural entrepreneurship.

### **Agriculture as a Business (Agribusiness) in Africa**

Agribusiness takes into account both the concepts of agriculture and business. It could be defined as farming engaged on a large-scale including the production, processing, and distribution of agricultural products and the manufacture of

farm machinery, equipment, and supplies (Tadele and Asefa, 2012). Agricultural entrepreneurship is a crucial economic activity that provides employment and livelihoods for many peoples and serves as the basis for many industries worldwide. Based on this, developing agribusiness in Africa would account for a huge share of national income and foreign trade in many countries. As reported in the Framework for African Agricultural Productivity (FAAP), growth in the agricultural sector could lead to general development which could promote job creation and , therefore, likely to improve the living conditions of the poor (FARA, 2006).

After independence of most African countries, agriculture was mainly dominated by cash crops such as cocoa, coffee, sugar cane, groundnut, cotton and palm oil. But, with the increasing decline in their world commodity prices, food crops are occupying an important role in the development of African agriculture. This emergence has been accelerated in recent years with regard to the global food crisis of 2007-2008 that have seriously impacted on the poorest regions of the world and caused instability in several countries.

In April 2008, the World Bank (WB) and the International Monetary Fund (IMF) jointly announced a series of measures to mitigate the crisis. These measures included increasing agricultural lending to Africa and urgent monetary assistance to hard-hit areas such as Haiti. In the same context, the World Food Programme (WFP) had suggested an additional need of 500 million dollars to its budget of \$ 2.9 billion to finance agricultural and food projects. (FARA, 2006).

### **Crop Production and Food Security**

Most developed countries fall within the temperate climate zone where cropping season is limited to the summer months. On the contrary, crops can be grown throughout the year in Africa as the continent is endowed with a tropical climate. On the other hand, rising costs of greenhouse heating and labour in developed countries, coupled with pricing pressure in an increasingly global economy have made tropical countries a favourable alternative for producing greenhouse crops. Some tropical fruits and vegetables have substantial export potentials as consumers' desire for variety and awareness of the health benefits of these crops increases. In addition to their versatile adaptation to extreme environmental conditions, African indigenous crops provide income for subsistence farmers and serve as staple food for the vast majority of global low income consumers (Tadele and Asefa, 2012).

Recently, several African countries have also gone into the production of non-traditional crops such as fruits and vegetables of temperate origin in order to diversify their agricultural exports and increase incomes. Depending on climatic conditions, the list of such food crop products is extensive. Unfortunately, with the use of limited recommended practices, the performance of most of these crops

is very low. In addition to this, price fluctuations and poor infrastructure also serve as disincentives to production.

### **Cassava Production and Processing**

Cassava (*Manihotesculenta Crantz*), also called manioc, tapioca or yucca, is a commonly grown tuber crop in Africa. It can be used as food, as cash crop, as feed for animals and as a source of industrial raw material. Compared to other crops, cassava is one of the most important food crops in the humid tropics, being particularly suited to conditions of low nutrient availability and able to survive drought (Burrell, 2003). It could be produced under suboptimal conditions, offering the possibility of using marginal land to increase total agricultural production (Cock, 1982). Also, it requires less labour than all other staple crops and there are some extra early varieties that could be harvested between 6 months and long time varieties of 3 years after planting.

Initially grown as substantial food crop, cassava products are now widely used for industrial purposes. Their utilization has, especially during the early 1990s, extended beyond the traditional regions known for high cassava utilization. Most of these renewed emphasis of cassava industrial exploitations, have been taking place in the so-called “newly opened economies” of China and Vietnam. However, in African countries, this trend has only just started to take initial shape. Developing agribusiness around the production and processing of cassava roots is, therefore, a recent initiative that is gaining momentum in Sub-Saharan African countries. In Côte d’Ivoire, the development of new cassava varieties, such as Bocou 1, 2 and 3 by the National Agricultural Research Centre (CNRA) and their dissemination to rural farmers including rural women farmers and their production and processing by women is a good example of agribusiness.

### **Fodder Production to Enhanced Agricultural Productivity**

In Africa, many farm households depend largely on the sale of livestock as a source of stable income and, therefore, highly concerned about the available fodder supply (NAERLS, 2001). But in the eyes of environmentalists, livestock production, especially free-range production, is one of the factors responsible for increasing deforestation. This contradictory picture emerged in the 1970s, when land allocated to agricultural production increased dramatically because of the increasing demand for meat, milk and other products. As a consequence of this huge demand along with cattle production under unfavourable farm management conditions, serious environmental problems evolved. These included land degradation, and in particular, the degradation of pastures (ILCA, 1987).

Cattle, sheep and goat raisers have traditionally relied on indigenous fodder trees and shrubs as animal feed, but because of changing environmental and social

conditions, some of the practices used are no longer appropriate. Farmers used to practice slash-and-burn methods of farming, but due to the population increase, such an extensive production practices are no longer viable, fallow periods have been reduced, and more forest area is being cleared for agricultural purposes (Maricel *et al.*, 2006). Patches of land (0.5-1.0) are cleared from rainforests and then planted with food crops such as maize, cassava, sorghum, millet, rice, groundnuts and cowpea/beans. After growing crops for some years in areas with abundant land, the area is left fallow for four to ten years to regenerate. These fallow lands are used as grazing areas (Plate 2.2) and consequently do not get the chance to recover. Instead, grazing animals cause land degradation through overgrazing and trampling the land.



**Plate 2.2:** Herds of cattle grazing in the wild

Furthermore, the fallow lands usually only provide poor quality forage. The livestock carrying capacity of these grasslands is low because of the predominance of poor quality pasture grasses such as *Imperata cylindrical*, *Themeda triandra* and *Chrysopogon aciculatus*. Moreover, many farmers are not inclined to plant fodder trees. They believe that, being indigenous, these trees would grow by themselves. At the same time, the indigenous fodder trees and shrubs that used to grow around homes have now receded farther into the forests. The farmers now need to travel further and spend more time gathering tree fodder.

Ruminant production in Africa is constrained mainly by the poor quality of dry season forage. For up to 9 months of the year, the crude protein content of the natural pastures falls below the critical level of 6 to 7% needed to maintain efficient rumen function (Blesilda, 2003). In the drier areas, there may also be a shortage of bulk and this is often aggravated by the occurrence of bush fires. Some pasture may be burnt deliberately to induce re-growth with high protein content to supplement the physiologically older vegetation that is often commonly available in the dry season. This deliberate bush burning is an indication that livestock owners are aware of the problems caused by inadequate forage during the dry season.

Therefore, almost all households face a shortage of feeds, especially in the dry season, resulting in significant losses each year. The obvious management response is to buy supplementary feeds, such as cottonseed cake, but these are scarce and expensive. Modern interventions are, therefore, required to off-set this problem. One such intervention is the fodder bank – an area of densely planted forage, for providing a high protein animal feed supplement during the dry season or period of needs. Fodder trees and shrubs play an important role in bridging the gap in fodder supply during the critical dry months. Being perennials, trees are more able to withstand prolonged periods of moisture stress than grasses. In addition, fodder from trees and shrubs have a high nutrient value that supplements the quality of crop residues, which is the normal feed during the dry months (Andreas *et al.*, 2006).

### **Promoting Agribusiness in Fodder Production**

Promoting tree planting for the purpose of rehabilitating degraded lands is not, in general, appealing to farmers. But farmers can be easily motivated to plant certain species such as fodder trees and shrubs that directly addresses their livestock feed needs. Promoting fodder tree planting in degraded grazing lands is like killing two birds with one stone. On the one hand, it helps meet livestock raisers' needs for fodder, while trees help alleviate land degradation on the other hand (Blesilda, 2003).

### **Factors Favourable for Development of Agriculture in Africa**

Poor crop productivity in Africa is due to the use of inefficient agricultural practices starting from land preparation, sowing, weeding, harvesting and threshing. Post-harvest losses also account for over 10 % yield losses in Africa. In addition, sub-optimal use of inputs such as fertilizers, herbicides and pesticides are also responsible for the low productivity of crops in the continent (Toutaine *et al.*, 2009).

The Comprehensive Africa Agriculture Development Programme (CAADP) has identified seven pillars for agribusiness development in Africa (Floret, 2002). This programme has established very ambitious targets for Africa's annual agricultural growth analyzed in terms of increasing factor use and productivity, as well as the key drivers of dynamic agricultural growth in Africa. The first pillar that consists in enhancing agricultural productivity takes into account several factors and parameters (mechanization and research and development) which together can help to tackle Africa's low crop and fodder yields. These mutually reinforcing factors are the basis of the short-term improvement of agriculture, food security and trade balance.



In Asia, the green revolution has enabled several countries to boost their crops production enormously. This revolution has allowed these countries to attain a level of economical stability like some countries in Europe and America. In Africa, the agricultural sector is traditionally based on subsistence crops production. So, African people need to extend their traditional crop and fodder holdings in order to increase production and meet the needs of urban populations. The transition from subsistence economy to market economy requires a change in mentality and must be supported by both technical and economic measures. Since 1960, the mass exodus of young job seekers from rural areas to cities and industrial centers has led to depletion of the labour force for farm work, which is currently carried out by aged men and women. A lesson we can learn from the experience of Asian countries is that University faculties of agriculture and agricultural research institutes should have very close working relationships and association with research systems of both developed and developing countries. Achieving this should enable African Universities to become valuable sources of agricultural development.

To encourage the new generation of young people, particularly African graduate students to invest in crop and fodder production, they must first be trained on the merits of investment in these fields as a source of jobs, and part of the most effective way to reduce poverty, to contribute to food security. They must know the appropriate procedures and guidelines to carry out a project on crop and fodder production for marketing. To achieve these, they must also be informed about the large sum of funds allocated by CAADP to support agricultural projects, how to access the funds and the interesting opportunities involved (Verheye, 2000). Moreover, success in increasing food production depends on certain factors favourable for agricultural development which include the following:

- Assured markets for farm products;
- Constantly improving production technology;
- Local availability of farm supplies and equipment for the new technology;
- Production incentives for farmers, including remunerative prices, favourable land tenure, extension, credit, marketing facilities; and
- Road networks and transportation to connect farms with markets for farm products and outlets for farm inputs.

### **Case Studies**

Three case studies (Boxes 2.1 to 2.3) are presented here. The first one is on planting fodder trees and shrubs, the second is centred around attiéké processing- a cassava product that is widely consumed by the Ivorian people. In recent years, the product has been exported to other African countries and outside the continent. The third case study addresses farmer groups formation for fodder production commercialization as an agribusiness venture in Africa.

**Box 2.1: Planting Fodder Trees and Shrubs in Nigeria**

In Nigeria, farmers have started planting fodder trees and shrubs along farm boundaries and in backyards. Planting along boundaries is also done to mark the borders and to ward off stray animals. Some are limited to these planting sites as their farmland areas are small or because they do not own the land. But the farmers also prefer tree fodder species to be planted near their homes to reduce fodder gathering time. Women in particular prefer planting fodder trees near house so they do not have to go far for fodder or leave their homes for a long time. In addition, planting near homes reduces the risk of fodder being surreptitiously collected from their trees by other farmers.

Farmers with relatively larger holdings (2-4 hectares) can plant fodder trees as hedgerows integrated with crops. Those with larger fields in steeply sloping areas have established several hedgerows of *Leucaena* or *Gliricidia*. The farmers were pleased to observe that soil gets trapped on the upper slope of the hedgerows. These farmers may also plant trees in blocks as fodder banks in areas where crop farming is difficult. This is often on steep slopes or near waterways. However, farmers will priorities planting food crops wherever possible. Generally, farmers only consider planting fodder trees, or some fruit trees, where the land is not suitable for food crops.

Some trees, such as *Leucaena*, *Gliricidia*, *Muntingia calabura*, *Erythrina orientalis* can start producing fodder as soon as six months after planting. Others include *Trema orientalis*, *Muntingia calabura*, *Macaranga tanarius*, *Streblus asper* and *Albizia saman* which are very slow growing in the first three years, which makes them difficult to farmers to plant, although they have a high nutrient content and are relished by animals. Instead of planting, farmers were advised to allow the natural stands of this species more time to re-grow, so they would not die (Blesilda, 2003).

Depending on the tree species and soil conditions, average edible herbage yields from 90-120 day old could produce 1.5kg dry matter per tree for commercial use. At this rate, 400 trees could yield 600kg fodder. If a 300 kg cow consumes 7.5 kg dry matter per day, it will be assured of good quality feed for 80 days. In practice, however, farmers try to extend the availability of green fodder throughout the dry season.

Usually, farmers will give their cattle tree fodder once a day (about half of what is required) and for the remaining grasses in the fields. If the farmer has some spare cash however, his animals will be mainly dependent on tree fodder to survive this critical period.

The frequency of cutting fodder or harvesting from these trees depends not only on the species but also on the season. *Leucaena* and *Gliricidia* can be cut every 60 days during the rainy season but every 90 days during the dry season. *Trema orientalis*, *Muntingia calabura* and *Macaranga tanarius* can be cut every 90 days during the rainy season and every 120 days during the dry season. *Streblus asper* can be cut every 4-6 months.



**Box 2.2 : Case Study on Small-scale Attiéké Processing by Women Associations in Côte d'Ivoire**

This case study focuses on small-scale attiéké processing (an added-value local dish) as a business by women Associations in Côte d'Ivoire. This case study describes and clearly explains in details the different steps involved in attiéké processing. It is a popular food mainly produced by women, which is fast becoming a marketable product in Côte d'Ivoire.

Processing attiéké provides to smallholder cassava producers additional market opportunities, beyond simply selling the fresh cassava roots. Once they have invested in suitable equipment, processing attiéké enables smallholder producers to increase their incomes, since they can demand a higher price for the value-added products and buyers are readily available.

Indeed, traditional methods of processing cassava roots can result in poor quality products and may result in risk of poisoning and goiter development due to the presence of cyanide compounds in cassava root. However, proper processing converts fresh cassava roots into healthier and more marketable products by reducing cyanide levels in the processed products, reducing post-harvest losses of fresh cassava roots, increasing the nutritional value (e.g., by adding grain legumes during processing) and increasing the market value.

**Equipment required for processing attiéké**

Processing attiéké involves seven steps and different machines and equipment are used in various steps. Transforming cassava roots into attiéké involves several (7) steps (Plate 2.1), which includes: (i) Preparing fermented cassava, (ii) peeling and washing cassava roots, (iii) crushing washed roots into mash, (iv) fermenting mash, (v) de-watering fermented mash into wet cake, (vi) sieving wet cake into grits and steaming grits into attiéké and (vii) Bagging and storing the attiéké.



**Plate 2.3:** The various processes involved in the production of attiéké

### **The economic benefits of producing attiéké**

An average of about one (1) tonne of attiéké can be produced from three (3) tonnes of new improved cassava roots. A survey of attiéké production showed that for an investment of 10.000 FCFA (US\$ 20), a net income of between 15000-20.000 FCFA (US\$ 30-40) can be made. Thus, the production and marketing of attiéké can be a means of improving livelihood in countries with high cassava production.

#### **Impact on a woman involved in the cassava production and processing**

In Côte d'Ivoire, research on cassava is improving food security and increasing farmers' incomes (Zamblé, 2012). The women farmers and attiéké processors of the southern and eastern regions of Côte d'Ivoire began using three pest resistant and improved cassava varieties with high yield namely Bocou 1, 2 and 3. The women farmers are gaining more economic independence through selling the products of these cassava varieties. They can produce 32-34 tones of cassava per hectare per year against 5 tonnes per hectare for the traditional varieties (Zamblé, 2012). Miss Henriette Adou, a 35-year old cassava farmer in the village of Dabou (located about 50 km south of Abidjan) said she gave up farming for a year because yields are too low. However, friends advised her to plant the new cassava varieties, which she did between 2009 and 2010 and the results were far better she had expected. Beyond selling cassava roots, Henriette produces attiéké, which she supplies to Abidjan market. With cassava selling for about US\$48 per tonne, Henriette's income was about US\$3,000 last year. She is investing her income in building a house of her own, which she hopes to finish very soon given the good cassava root and attiéké businesses. . Now, she projects to establish a small factory for cassava products processing as well as cassava marketing business.

In Côte d'Ivoire and many parts of the world, large number of women are getting interested and involved in agribusiness ventures. The case of cassava production and processing into attiéké is a good example of agribusiness that provides financial independence to south Ivorian women. As a result, these entrepreneurs should be encouraged and modernized (especially in rural areas that depend on agriculture), by providing modern equipment and training for the farmers to comply with quality standards for additional market opportunities.

**Box 2.3 : Case Study on Farmer Groups Formation for Fodder Commercialization as Agribusiness Venture**

In Sub-Saharan Africa, improved availability of sufficient high quality feed is a key means of improving milk yields and hence dairy income for smallholder farmers (UNIDO, 2001; Olson, 2009). However due to reliance on rain-fed fodder production, farmers experience seasonality in fodder supply with too much supply during the wet season and scarcity in the dry season. This has led dairy farmers in the region to subsist in the otherwise lucrative industry with great potential which have not been fully exploited. In East Africa region, there is a cyclic acute shortage of feed supply during the dry seasons. The meager feed availability, coupled with its high prices during dry periods, do not always tally with feed quality attributes which often has been found to be low (Ogato *et al.*, 2009; Andreas *et al.*, 2006). Access and availability of fodder during dry periods has been identified as challenges facing the dairy sub-sector in the East African region (Blesilda, 2003). This challenge directly influences the dairy farming profitability through the low volume of milk produced and sold, as well as by reducing the profit margins as a result of costs incurred in feed purchases. This occasional feed shortage in the East African region influences other livestock performances in the dairy industry. In Western Kenya for instance, forage shortage occasioned by dry spells is considered to be a constraint for dairy goat performance (Anderson and Grove , 1999; World Bank, 2001).

The initiative by the East Africa Dairy Development (EADD) project to facilitate the formation and strengthening of Dairy Farmers Business Associations (DFBAs) in the East African region partly became an avenue to address dairy feed shortage. It is through DFBAs outlets that its members can access farm inputs including fodder feeds. DFBAs feed marketing model allows farmers to purchase animal feeds on credit which will be serviced later through the check-off system against the milk supplied by the members. DFBAs manage their own agro-chemical stores which are outlets for farm inputs and offers check-off services to its members. It is through DFBAs' check -services that members access and purchase animal feeds throughout the year thus ensuring consistent supply of milk to dairy hub. In addition, such an arrangement ensures that the profits margins, which accrue to its members, remains comparatively high because DFBAs' aim is not profit making from feeds sales, rather it is a service to its members.

**Forage (pasture and fodder) species grown in East Africa under the East Africa Dairy Development Project**

**Table 2.1** presents a list of pasture and fodder species that are commonly grown in East Africa, particularly by farmers in Kenya.

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**Kenya**

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1. Improved Napier grass varieties (KAK,1 KAK2, EX Mariakani, Clone 13)
2. Bana grass, French Cameroon
3. Hyparrheniarufa
4. Columbus grass
5. Guatemala grass
6. Oats
7. Forage sorghum (Kinyaruka, JB 26, BM 30, Lanet I, Kaw

- Kandy, E6518 and E1291)
8. Calliandra (*Calliandracoalythrusus*), tree lucerne (*Chamaecytisuspalmensis*) and *Leucaenatrichandra* tree nursery
  9. Rhodes grass (*Chlorisgayana*) and *Desmodium*spp intercrops
  10. Lucerne
  11. Lupin
  12. Dual-purpose sweet potato vines: Mugande, SPK 013 and Mafuta
  13. SASHA project forage and dual-purpose sweet potato varieties (Naspot1, Kemb23, Kemb 36, Gweri, Wagabolige and 103001)
  14. Mangold (*Beta vulgaris*)
  15. Burgundy bean (*Macroptiliumbracteatum*)
  16. *Clitoriaternatea*
  17. Vetch (*Viciavillosa-dasycarpa*)
  18. Pigeon pea (*Cajanuscajan*)
  19. *Canavaliabrasiliensis*
  20. *Dolichos (Lablab purpureus)*

**Uganda Forage Species**

1. Napier grass/calliandra intercrops
2. Rhodes grass
3. Guinea grass
4. *Brachiaria ruziziensis* Congo signal grass
5. Siratro grass (*Macroptiliumatropurpureum*)
6. Calliandra tree nursery
7. *Mucuna*spp
8. *Lablab* spp
9. Lucerne
10. *Centrosema*spp

**Rwanda Forage Species**

1. Rhodes grass
2. Napier grass *Brachiaria ruziziensis* *Mucuna* spp.
3. *Lablab* spp.
4. *Desmodium* spp.
5. Calliandra
6. Lucerne
7. *Leucaena diversifolia*
8. Sweet potato vines

**Farmers' Preference for Indigenous Fodder Trees and Shrubs Species in Nigeria**

Livestock farmers in Nigeria traditionally rely on indigenous fodder trees and shrubs species as animal feed. They appreciate fodder trees and shrubs because they play important roles in bridging the gap in fodder supply during the critical dry months. Being perennials, trees are more able to withstand prolonged periods

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of moisture stress than grasses. In addition, fodder from trees and shrubs have a high nutrient value that supplements the often poor quality crop residues, the normal feed during these dry months. However, harvesting of fodder trees and shrubs has often been so heavy to the extent that the trees cannot easily regenerate since fodder harvesting hinder the trees from producing the seeds required for natural regeneration. Despite these problems, farmers are often not inclined to plant fodder trees.

From 2005 to 2010, a project on the domestication of indigenous fodder tree and shrub species was undertaken to promote indigenous fodder trees production. The project used a participatory action research approach and studied the “highly preferred” fodder tree and shrub species. The species included in the research (Table 2.1) were selected in collaboration with the farmers.

Farmers’ preferences for certain fodder species were based on feeding values (palatability and ability to fatten livestock), tree growth characteristics (fast re-growth, ease of propagation and establishment) and tree management issues. For farmers, it is important that the trees are tolerant of frequent cutting and the cut herbage is easy to handle. The result shows that farmers like to plant different fodder tree and shrub species because the animals do not like to eat the same fodder all the time, but prefer to consume mixtures of several species.

**Table 2.2:** Farmers' preference of indigenous fodder trees and species in Nigeria

indigenous fodder trees and shrubs species				
Botanical name	Farmers' Preference			Overall rank
	Feeding Value	Tree Growth Characteristics	Tree Management	
<i>Macaranga tanarius</i>	9	9	8	1 <sup>st</sup>
<i>Streblus asper</i>	9	9	8	1 <sup>st</sup>
<i>Trema orientalis</i>	9	8	6	2 <sup>nd</sup>
<i>Cordia dichotoma</i>	8	7	7	3 <sup>rd</sup>
<i>Ficus angustissima</i>	7	8	7	3 <sup>rd</sup>
<i>Ficus belete</i>	7	8	7	3 <sup>rd</sup>
<i>Ficus hauili</i>	7	8	7	3 <sup>rd</sup>
<i>Ficus spp.</i>	7	8	7	3 <sup>rd</sup>
<i>Muntingia calabura</i>	9	6	7	3 <sup>rd</sup>
<i>Albizzia lebbekoides</i>	8	5	8	4 <sup>th</sup>
<i>Albizzia procera</i>	4	8	8	5 <sup>th</sup>
<i>Pipturus arborescens</i>	7	7	6	5 <sup>th</sup>
<i>Pterospermum obliquum</i>	7	7	6	5 <sup>th</sup>
<i>Vitex parviflora</i>	5	7	8	5 <sup>th</sup>
<i>Crewia multiflora</i>	7	5	7	6 <sup>th</sup>
<i>Anaxagorea luzonensis</i>	6	6	6	7 <sup>th</sup>
<i>Antidesma bunius</i>	7	6	5	7 <sup>th</sup>
<i>Antidesma cordato-stipulaceum</i>	7	6	5	7 <sup>th</sup>
<i>Bridelia stipularis</i>	6	6	6	7 <sup>th</sup>
<i>Gardenia longiflora</i>	6	6	6	7 <sup>th</sup>
<i>Arytera litoralis</i>	5	6	6	8 <sup>th</sup>
<i>Garuga litoralis</i>	6	6	5	8 <sup>th</sup>
<i>Klienhowia hospital</i>	6	6	5	8 <sup>th</sup>
<i>Pterocymbium tinctorium</i>	6	6	5	8 <sup>th</sup>
<i>Grewia rizalensis</i>	6	5	5	9 <sup>th</sup>
<i>Leea manillensis</i>	6	5	5	9 <sup>th</sup>
<i>Pterospermum diversifolium</i>	5	5	6	9 <sup>th</sup>
<i>Zizyphus trinervia</i>	4	6	4	10 <sup>th</sup>
<i>Capparis micracantha</i>	4	5	4	11 <sup>th</sup>

## Conclusion

Apart from the production of cassava and its processing into attiéké in Côte d'Ivoire, the cassava products are subject to exploitation in many areas around the world. Both at the household industrial levels, cassava has potential uses that should be explored to contribute to the development of agribusiness in Africa. Beyond cassava, other contextualized crops and/or fodders production and processing initiatives should be considered.

It could be concluded that the production of crop and fodder is a promising enterprise that should be taught in Universities and higher educational institutions in Africa, given the high potentials for agricultural in the continent. In doing so, they would contribute in changing the mentality and developing the spirit of entrepreneurship among the new generation of students. This will contribute in generating self-employment opportunities for young agricultural job seekers, resulting in poverty reduction and increase food security in Africa.

### Questions for Discussion

1. How can farmers be easily motivated to plant certain fodder tree and shrub species that directly addresses their livestock feed requirements?
2. What policy intervention(s) would you recommend to improve fodder trees and shrubs commercialization as animal feeds.
3. Critically analyze the roles played by farmer groups the DFBA in East Africa in the marketing of farm produce?
4. Develop an agribusiness relative to crop or fodder products in the context of an African perspective.

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## Chapter 3

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### AGRIBUSINESS ENTERPRISES IN LIVESTOCK PRODUCTS: CASE OF PIGGERY AND DAIRY PRODUCTION

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#### Summary

This chapter focuses on the importance of livestock products in human life, and specifically emphasizes the value of nutrition, particularly protein which they offer to mankind. It discusses the principles and practices of livestock production as a system of agriculture and agribusiness in particular. It further points out how agribusiness enterprises in livestock products such as pig and dairy production can be managed to ensure profitability.

#### *Entreprises d'Agrobusiness dans les produits d'élevage : Cas de la porcherie et de la production laitière*

#### *Résumé*

*Ce chapitre traite de l'importance des produits d'élevage dans la vie humaine, et notamment des projets sur la valeur nutritionnelle, en particulier la protéine qui ils offrent à l'humanité. En outre, il souligne comment les entreprises agro-alimentaires dans les produits de l'élevage tels que les porcs et la production laitière peuvent être gérées pour assurer la rentabilité.*

#### Introduction

The primary goal of livestock production is simply to make money. This implies that most people, carry out livestock production as a profitable business aimed to obtain adequate income to meet several households needs which may include: food, housing, education, health care, clothings, among others. It is desirable, therefore, that livestock offer value for money, which calls for prolific animals whose production can be accurately predicted. However, the efficiencies requirement of the livestock industries relative to other food industries may have short term influence upon the economic returns expected by the participants in that industry (Harris, 1970).

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The process of a profitable animal production venture starts at breeding, where the projected number of animals can be produced within defined time durations. Therefore, a comprehensive research to obtain quantitative baseline data on production, is a necessary guide for a profitable pig production enterprise.

This ensures that a novice entrepreneur is tutored, guided and rooted in the business enterprise, in order to minimize or even eliminate chances of business failure. This ensures that all is done right and well during the first 30 weeks of production, which are the necessary incubation period for a viable and profitable pig production business enterprise.

On the part of dairy production, the East Africa Dairy Development (EADD) project has found that the milk chilling plants managed by farmer organizations in Kenya were operating at 10 % below breakeven point during the dry season, these problems being further complicated by the inadequate fodder seed supply system (EADD, 2008.) The dairy subsector in Kenya enjoys high protection, due to its economically vulnerable position within the smallholder production systems. It is a major activity in the livestock sector and an important source of livelihood for about 1,000,000 small-scale farmers in Kenya. Increased dairy productivity, therefore, will not only enhance income, nutrition and reduce poverty for smallholder farmers, but also provide dairy products to the growing urban populations. Milk is, however, highly perishable and requires comprehensive safety assurance and quality regulation checks (Falvey, 1999). Therefore, there should be a need to develop sustainable milk marketing channels which would not only ensure farmers collect and sell their produce, but also remove farmers from exploitation by traders and milk processors. This will require a properly developed value chain that will ensure sustained high quality milk production that reaches the consumer at reasonable price.

### **Learning objectives**

1. Students must be able to appraise a livestock based business for profitability;
2. Students must be able to diagnose the problems encountered by dairy farmers;
3. Students must be able to find a solution for the problems encountered by livestock based agribusinesses.

### **Learning Outcomes**

1. Students must be able understand an agribusiness in livestock products;
2. Students must be familiar with various business strategies for an agribusiness in livestock products;

3. Students must be able to analyze an agribusiness in livestock products and be able to determine how the efficiency and profitability of the particular agribusiness can be improved;
4. Students must be able to develop a business strategy for an agribusiness in livestock products.

### **Feeds in Piggery and Dairy Production as Agribusiness**

The feed conversion ratio (FCR) of an animal is the mass of the food eaten by the animal divided by the body mass gain of that animal, all over a specified period. Animals that have a low FCR are considered efficient users of feed, and a pig's feed conversion ratio is 3.5:1, while that of chicken is 2:1, and that of cattle is 8.5:1, making a pig very efficient in feed conversion as compared to cattle, even though it is not as efficient as chickens.

Furthermore, a pig is a highly prolific animal, which gives birth to an average of 8 – 10 piglets after a gestation period of 114 days and as such proper feeding is a re-requisite in pig production. This makes pig production a high feeds demanding business enterprise but a very viable business world over. In 2002 the Food and Agriculture Organization (FAO) of the United Nations reported that the World Pig Population was 939,318,700, with the pig population in Africa (18,652,304) comprising only 2 % of these World Pig Population. This further makes pig production an unexploited viable business opportunity in Africa.

Milk production in Africa, on the other hand, is dependent on rain-fed forages. Because of the availability of forages, the dairy subsector has been growing steadily in East Africa in the 1980s and 1990s. The pace of growth has since been accelerated following enhanced consumption demands by urban dwellers. Ngigi (2004) reported that milk production increased in the 1990s by an annual rate of 4.1% in Kenya and 2.6% in Uganda due to high demands. This has been made possible also because most smallholder dairy farms are in highland areas with altitudes of more than 1,200 meters, which experience bimodal rainfall pattern that is suitable for year round feed production to sustain dairy productivity. It should be noted that these farmers occasionally experience either erratic droughts or excessive rains that result in subsequent crop failures and declined livestock productivity, which increases their vulnerability to food insecurity and poverty (Zagst, 2012). The reliance of these farmers on rain fed fodder production, results in seasonality of fodder supply with too much supply during the wet season and scarcity in the dry season.

### **A Quantitative Analysis of Profitable Small Scale Commercial Piggery Production**

Pig production as a business venture offers a rapid return on investments because pigs are prolific animals which produce litters of up to 14 piglets, and weans averages of 8 – 10 piglets even in developing countries where resources such as housing and feed are scarce. It further has a very short gestation period of 3

months, 3 weeks and 3 days (approximately 114 days). Piggery also offers a rapid return on investment because the farmer can sell weaners, porkers, baconers, gilts and breeding stock, thereby having a choice of which specific product to offer depending on its business supremacy.

The process of a profitable animal production venture starts at breeding; therefore, the farmer needs to know the basic principles of pig breeding. This requires that a novice entrepreneur is tutored, guided and rooted in the pig business enterprise, in order to minimize or even eliminate chances of business failure. This will ensure that all is done right and well during the first 30 weeks of production, which is the critical period of a viable profitable pig production business.

**Box 3.1: The Case of Commercial Pig Farmers in Botswana**

Small scale commercial pig farmers (up to 30 sows) in Botswana have had to close their businesses because of lack of profitability of the business. Some of the reasons given for the lack of profitability was that sows did not wean the expected litter of 8 – 10 piglets per cycle, and also did not deliver the 2.5 littering cycle per year. This case study gives a prediction of commercial pig numbers expected in a small scale commercial pig production business of up to 30 sows, provided all the aspects of pig production are done optimally. These aspects include good breeding practices, use of acceptable commercial breeds, good nutrition, housing and overall good management.

**Box 3.2: The Case of a Novice Pig Farmer in Botswana**

A novice pig farmer named Sebele in Botswana who started with 30 sows and 2 boars had 264 commercial pigs with a value of US \$ 26,908.27 after a duration of 30 weeks. The business venture recorded profits during this incubation period of 30 weeks. This farmer had invested in good housing facilities, for his pigs and was also feeding them the recommended commercial pig feed. This monetary returns after 30 weeks motivated the farmer to stay in the pig production business with the objective of making more profits from his enterprise.

**Improving Market Access for Smallholder Dairy Farmers**

This sub-section describes the solution to access market for small holder dairy farmers in East Africa through the intervention of a donor funded development project. It emphasises the importance of farmer owned marketing groups/ producers or organizations in improving access to markets for smallholder farmers.

The objective is to share experiences of how farmers in East Africa have managed to improve access to market by forming effective producer organizations which operate within a turbulent and competitive environment. These experiences are drawn from East Africa Dairy Development (EADD) project implemented in East Africa and funded by Bill and Melinda Gates Foundation.

East Africa region of Sub-Saharan Africa is a small-scale agricultural economy, consisting of resource-poor farm communities composed of about 115 million people, half of them subsisting on less than \$1.25 per day (IFAD, 2011). The structure of dairy sector in East Africa is characterized by lack of co-ordination between production, processing and marketing. This lack of vertical coordination impacts negatively on the performance and efficiency of the sub-sector.

The East Africa Dairy Development Project (EADD) was a regional industry development programme supported by Bill and Melinda Gates Foundation (BMGF) focused on enhancing dairy production and market access for small-holder farmers in East Africa. The project goal was to help dairy farmers in East Africa double their dairy related incomes by increasing ownership of improved breeds, increasing milk production and improving access to markets for the products. EADD Phase I aimed to work with 179, 000 farm families; reaching approximately one million people living on 1-5 acre farms and Phase II was intended to work with 136, 000 families.

The project was implemented through a consortium of five organizations: Heifer International (lead), TechnoServe (TNS), the International Livestock Research Institute (ILRI), African Breeders Total Cattle Management (ABS-TCM) and the World Agroforestry Centre (ICRAF). Phase I of the project began in 2008, which was implemented in Uganda, Kenya, Rwanda and ended in October 2013. Phase II was launched in January 2014 and will expand into Tanzania. The East African General National Development agenda emphasises accelerated economic growth through increased productivity and enhanced agricultural and industrial production, thereby increasing employment opportunities, and equitable distribution of income resulting in reduction of poverty. The realization of these objectives requires, amongst others, that smallholder farmers be integrated into viable value chains through competitive and sustainable producer organizations (POs). Business oriented PO's with effective and efficient operations are known to have the potential to improve incomes of smallholder farmers through bulking and marketing of quality farm produce.

The EADD Consortium Partners believe in the availability of accessible markets to transform smallholder dairy farmers lives. The project design, therefore, included market access as a core component of the EADD intervention. TechnoServe has been leading the market access component of EADD project as well as providing enterprise development expertise. The project invested in mobilizing farmers to form and register POs which would be engaged in joint milk marketing and service delivery to farmers. A total of 82 POs were established/strengthened including Kabiye Dairy in Kenya PO. As the POs improved in financial health, value proposition to market, and increased management and leadership capacity, the project supported them to transform from simple single route to a business hub. The business hub concept prescribes the need for centralized market systems for farm commodities and is hinged on using robust value chain analysis to establish scalable rural enterprises. The hub is characterized by regular payments for commodities through a centralized system, creating opportunities for economies of scale for typically low-value commodities. The

concept leverages bulk procurement of all services and products, resulting in reduced marginal costs and increased savings and investment through credit mechanisms. To ensure sustainability of the interventions, the project supported these POs to create linkages and relationships with private and public players.

EADD also supported the establishment and sustainability of 82 farmer enterprises in Kenya, Uganda and Rwanda. As at June 2013, these POs had linked over 200,000 dairy farmers to formal and stable markets that offer better prices for milk, plus a centralized system for business development services. They have generated over \$131 Million in cumulative sales since 2008, out of which 86% went directly to farmers for milk deliveries. Farmers were earning an average of \$0.30 per liter of milk delivered, whereas the average before EADD was a paltry \$0.20 per liter.

### **Navigating Turbulent External Environment by Producer Organizations: The Case of Kabiyet Dairies in Kenya**

Kabiyet Dairies PO was formed at a time when Kenya was recovering from its structural adjustment programs (SAPs) instituted by the World Bank and International Monetary Fund (IMF). Liberalization of key sectors in the 1990s was a major component of The SAPs. The dairy and cooperative sectors were liberalized during this period, resulting in their near collapse which left farmers with no access to markets which threatened their main livelihood. Consequently, the dairy farmers had to lose confidence in the cooperative movement because Kenya Cooperative Creameries (KCC), a state owned monopoly, had collapsed even before paying millions of shillings due to farmers for milk deliveries.

In 2008, a group of local dairy farmers met to discuss their challenges and how best to overcome them. They appointed representatives who wrote an expression of interest (EOI) to East Africa Dairy Development Project (EADD) for support to establish a producer organization. Kabiyet had been supported by EADD to register as a cooperative in late 2008 and later incorporated as a limited liability company with an authorized share capital of Milk bulking, chilling and marketing has been the primary business for Kabiyet Dairies. The Dairy commenced milk bulking business in June, 2009 collecting 1,623 litres per day after the completion of equipment procurement and installations, staff recruitment and farmer/shareholders mobilization with the support of EADD. As a result, milk volumes handled was on an upward trend reaching an annual average of 23,148 litres per day (lpd) in 2010.

Given the preferential treatment of Kabiyet by New Kenya Cooperative Creameries (NKCC) and the adoption of a centralized clearing house for other dairy co-operatives, the initial installed capacity of 10,000 litres capacity tank was stretched to its limit, getting to an average of 230% in 2010 (23,000 litres per day). Given the positive growth, Kabiyet made a strategic decision to expand chilling and handling capacity and acquired a 10,000 litre chilling tank with the support of their buyer, NKCC (in 2010). This was installed as a sub-station



within its catchment area and later acquired an extra 3,000 litres tank obtained through taking a loan from CFC Stanbic bank.

The rapid chilling capacity expansion and opening up of satellite collection centers drove the cost curve upwards with increased costs in personnel (staff hired to a peak of 73), power utilization, interest cost and other overheads, quickly and significantly driving up the milk handling cost to a high of \$0.47 per litre. There was, therefore, a clear need and urgency to change strategy to ensure improved efficiency and increased return to shareholders/farmers.

### **Conclusion**

In conclusion, the chapter discusses smallholder piggery and dairy production agribusiness value chains by highlighting the challenges and demonstrating the viability of these business enterprises. The study offers practical experience of smallholder entrepreneurs from within Africa. The existing technical and business challenges and opportunities which focus on market dynamics, access to inputs and technology as well as business environment have been elaborated. The favorable market outlook on both the demand and supply side for the two agribusiness value chains provides a unique window of opportunity for smallholders to mitigate failures which entail serious risks for agriculture and agribusiness development. Moreover, Government policies, particularly dairy as in the case of Kenya should be made enabling and implemented to unleash Africa's agribusiness potential. Also, the study emphasizes the need to improve agribusiness infrastructure for the two value chains using public-private-partnerships to overcome existing constraints. Finally, building skills and entrepreneurship is critical for competitive commercial agribusiness, especially lack of skills at the level of smallholders.

### **Questions for Discussion**

1. How can farmer Sebele increase the profitability of his business venture so that he stays competitive and profitable?
2. What must an entrepreneur in piggery do to ensure business success?
3. Explain the importance of well functioning value chains in dairy production?
4. How can the linking of production organizations improve the value of dairy produce?
5. What strategy must Kabiyet Dairies adopt to keep operational costs low, and increase profits?
6. How is operational efficiency increased in the Dairy Industry.

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## Chapter 4

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### AGRIBUSINESS ENTERPRISES IN FOREST AND NON-TIMBER FOREST PRODUCTS

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#### Summary

This chapter presents agribusiness enterprises in the forest and non-timber forest products (NTFPs) sector. It aims to build the knowledge base of students on forest and NTFPs and businesses that can be generated around their value chains. The chapter explores the context, concepts and definitions of common terms in the domain of NTFPs with a view to laying the foundation for understanding this subject. Selected case studies, which present practical application of agribusiness enterprises focussing on NTFPs, are also provided. Finally, the chapter provides a glossary, suggested reading materials and study questions to help the students delve deeper into the subject.

#### *Entreprises d'Agrobusiness dans le secteur des produits forestiers ligneux et non ligneux*

#### *Résumé*

*Ce chapitre présente les entreprises agro-industrielles dans les secteurs forestiers et des produits forestiers non-ligneux. Il facilite la compréhension des étudiants sur la foresterie et produits forestiers non ligneux et jette les bases sur les opportunités d'entreprises qui peuvent être générés autour de leurs chaînes de valeur. Il se compose d'une introduction qui présente le contexte, les concepts et les définitions des termes communs dans le domaine des forêts et des produits forestiers non ligneux. L'introduction présente à l'étudiant les objectifs de la formation et les résultats du chapitre suivis des études de cas. Les études de cas présentent des cas concrets de deux entreprises agro-industrielles des produits forestiers non ligneux. Le chapitre se conclut par les références des matériels utilisés dans le texte, un glossaire, une proposition de document à lire et des questions d'étude.*

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## **Introduction**

Globally, and Africa in particular, people have depended on plant resources and a host of related products for survival. Trees, in particular, are important in supporting the needs of different groups in African societies including hunters, subsistence and small-scale farmers (Leakey and Izac, 1998). Until recently, the importance of forests resources - (NTFPs- to the global economy and livelihoods has been downplayed. However, the growing interest in rural development and poverty alleviation, the contribution of forests and forest products to households' food and livelihood security is being taken seriously. Within this framework, the economic importance of forest products cannot be gainsaid. These products have begun to attract particular attention and are being considered viable income-generating components of the non-farm part of the rural economy. This interest has been reinforced by shifts in development policy and strategy towards more market-driven orientation of the economy. As is the case in many countries, the economic contribution of NTFPs to national economies is increasing. Apart from timber and wildlife resources, NTFPs constitute a large part of the forest economy in developing countries.

## **Learning Objectives**

The general objective of this chapter is to build the understanding of students on forest and NTFPs and businesses that can be generated around their value chains. Specifically, the chapter aims to:

- 1) Provide definitions of common terms in the domain of forest and non-timber forest products;
- 2) identify the different stakeholders involved in forest and NTFP value chains;
- 3) understand the major challenges associated with forest and NTFP commercialization;
- 4) appreciate the importance of NTFPs in livelihoods improvements;
- 5) Present case studies of NTFP businesses in Africa.

## **Learning outcomes**

At the end of the chapter students should be able to:

1. Define common terms in the domain of forest and NTFPs;
2. Identify the different stakeholders involved in the value chain of any NTFPs;

3. Outline the different challenges associated with the commercialization of NTFPs;
4. Outline the importance of NTFPs in improving livelihoods;
5. Analyze different NTFP businesses.

## **Concepts and definitions in Non-Timber Forest Products businesses**

### **Non-Timber Forest Products**

Increasingly recognized in research and policy sectors, NTFPs play a critical role in rural livelihoods, income generation, and local economies; and in some instances, forest conservation. This has stimulated several efforts aimed at collecting and reporting data pertaining to their extraction rates and sustainability. However, this exercise has met with several challenges at different levels. These are outlined below:

The sheer complexity resulting from the high number of different species and types of NTFPs, ranging from large and whole plants and animals to smaller parts such as fruits, leaves, flowers, seeds, roots and bulbs, bark, honey, insects, resins, horns, skins among others:

- Variations in quantities extracted, used, and traded from a small handful of small a particular product during times of needs (such as bark of medicinal plant tree and to hundreds of thousands of tons of products on an annual basis (fuel wood, some fruits species, fibre products, etc.);
- Extraction of NTFPs is largely carried out by rural communities with poor or no infrastructure and formal recording or census agencies;
- Insufficient biological knowledge, understanding, and monitoring of most NTFPs species with respect to their growth and mortality rates, productivity, reproduction and responses to harvest makes assessment of sustainability of extraction almost impossible;
- Inconsistencies in what constitute an NTFP and what does not, which determines what types and species of products should be recorded.

NTFPs were first brought to public attention in the environmental and development dialogue of late 1980s especially in the Post-RIO 1990s. Since then NTFP promotion and trade has been promoted by conservation and development organizations alike- particularly those working in the tropical rainforest - due to its high potential to supply local people with sufficient incomes to provide them with incentives to maintain the forest. Known and used for centuries by local populations, non-timber forest products were designated by different terms: harvested products, secondary forest products, minor forest products, special

forest products, traditional agricultural products, food crops, etc. The concept and definition of NTFP has evolved and mutated since it came to the lamp light in the late 1980s. This is a function of: (a) the large array of species and situations studied, (b) the exponentially increasing information and knowledge base, and (c) the growing range of disciplines involved and questions posed during research (Shackleton *et al.*, 2007). Different debates on the definition centre on whether NTFPs refer to non-timber or Non-wood products, are of biological or abiotic nature, are derived only from the forest, are derived only from the wild, are solely indigenous, are restricted to subsistence and local extraction, are only for consumption uses, or only for local benefits. Regardless of the definition, the focus has always been on the benefits that accrue from conservation (ecosystem) or improved local livelihoods. Within the context of this book, the interpretation of what constitutes NTFPs looks at the different businesses that are generated from the use of NTFPs besides livelihoods benefits and other “for human uses”. In this regard, the key elements that define NTFP encompass businesses developed from the use of:

- Biological products (e.g. fruits, nuts, bark, leaves, seeds, roots, tubers, saps, oils, etc.);
- Wild species (indigenous, naturalized, or alien e.g. game, insects, bee products, giant snails, fish, birds, reptiles, etc.);
- Products harvested by humans (this excludes fodder consumed by free-ranging animals);
- Products with consumptive and no-consumptive uses;
- Products from any landscape or ecosystems (including human dominated landscapes and ecosystems);
- Products that act as an incentive to a species or site conservation;
- Products from different production systems (spontaneous collection versus cultivation of plants; hunting versus animal husbandry).

### **Non-Timber Forest Products Markets**

Highlighted by Belcher and Schrenkenberg (2007), NTFP commercialization is defined as increasing the value of an NTFP in trade. There are two principal objectives for promoting NTFP commercialization or businesses: NTFP commercialization is expected to increase income and employment opportunities especially for poor and disadvantaged populations. This expectation is based on the well-documented importance of many NTFPs in rural livelihoods; the emergence of new markets for natural products; and the development of new marketing mechanisms (green marketing, fair trade). Building on their local importance, there is a great potential in commercializing NTFP as an engine for

rural growth, as in the case of woodcarving in Bali (Kusters and Belcher, 2004), and contributing to improved national incomes and livelihoods.

With regard to conservation, NTFP commercialisation offers opportunities for rational forest utilisation (Myers, 1988) as well as creating incentives for the conservation of individually valuable species and the environment in which they grow. The idea is that demand for products from a forest environment will translate effectively into demand for forest conservation. Therefore, conservation organisations have been prominent in advocating for NTFP commercialisation as a way to encourage conservation-compatible income sources and to displace more destructive land- and resource-use options.

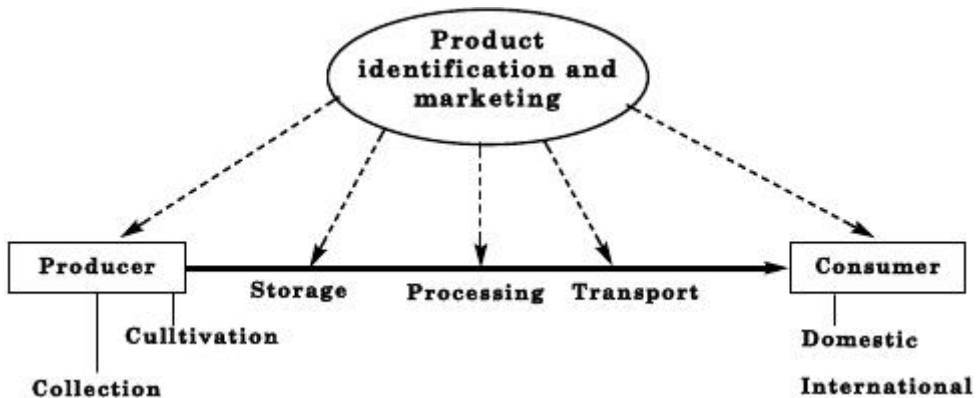
Based on their characteristics, non-timber forest products face marketing challenges of diverse nature which include:

- Poorly developed markets and dispersed production: the production of many NTFPs is dispersed over the year and market outlets few. This poses the problem of irregular supply and distorted market outlets thus discourage traders or other actors who may want to invest in inputs (storage and processing equipment's). Another constraint linked to disperse production is that of poor communication and transportation infrastructure given that most NTFPs come from forests located in remote areas;
- Typically small volumes: most NTFP markets are small in scope and value hence attracts limited attention or investment. When successful, sustaining supply may be a serious problem. This poses a problem with product development, which in most cases requires detailed planning of how to meet future demands, including how to organize producers to collaborate through market cooperatives to ensure adequate supply of NTFPs to major markets;
- Lack of appropriate technology: based on literature, a large number of NTFPs are not processed. This is probably due to misunderstanding about the level of technology required to get NTFPs to markets. Processing may add value to the products and helps ensure they meet the required international standards;
- Growing need for certified products: given that certification opens up opportunities for niche markets, products certification is a rapidly growing field. However, it requires a high level of organization and technical expertise from producers, such as management planning, marketing, monitoring and product tracing. The costs involved in obtaining certification from several bodies may prevent most NTFP harvesters from participating in such initiatives unless they have access to sustained technical and financial assistance;

- High barriers to market entry: Most often, a major barrier for most traders is that each destination market (industry) has its own research, manufacturing and marketing requirements that must be taken into account during product development. For food, herbal or medicinal products, barriers are particularly stringent. Very few low-income countries have the required infrastructural and institutional mechanisms, strict quality control and sophisticated supply chain management practices necessary to enter an international market with a new product.

### Non-Timber Forest Products value chains

Several subcategories of activities may be involved in NTFP value chains. These activities include collection, processing, storage, transport, marketing and sale (Figure 4.1). The relative importance of each activity differs from product to product. An activity may be repeated or be omitted for a particular product. For locally traded NTFPs, their chains are most often shorter and simpler in which harvesters sell their products directly to consumers. NTFP value chains that extend beyond the local level generally tend to be more complex. One major difference between most NTFPs and the value chains of agricultural products is the status of wild harvesting in the production process, often from locations far from the home where the collector has no secure land tenure. Depending on where the product originates, the nature of the product, the degree of processing, and the requirement of the consumer, transport, storage or processing (in no precise order) may be more or less complex. The predominantly wild, and therefore low-density, production of NTFPs means that ‘bulking-up’ – the collection of sufficient volumes of the raw or partially processed material to make any subsequent processing step economical – is a key function of the value chain.





For NTFPs traded internationally, export and import requirements must be fulfilled. These include respect of quality standards, phyto-sanitary regulations, permits and taxes. On arrival in the importing country, another round of storage, processing and transport may be required involving agents, distributors before a completely transformed product is sold to retailers and final consumers. At each level of the trade, commercial considerations such as guaranteed supply of a quality-assured product, respect of supply schedule and equitable cost allocation - are critically important for developing a sustainable long-term relationship between sellers and buyers.

### **Actors in NTFPs value chains**

Very often, for nationally and internationally traded NTFPs, the whole production-to-consumption system is hardly undertaken by a single enterprise unlike at the local level where a family may gather and sell products directly to local consumers. In a majority of cases, there is a chain or network of different actors (organizations, individuals, loose associations, shareholder companies) involved in getting a NTFP from the forest or field to the consumers. Particular actors may be more appropriate in intervening at a particular level in the chain than others e.g. in the case where an NTFP is collected from a communal land, community-based organizations may be more appropriate with ensuring rational exploitation while collection by individuals from individual plots may lead to the formation of a cooperative with individual members. The two types of organization allow for pulling of the produce to meet the minimum order requirements, sharing the costs and benefits of collective investment in storage, processing or transportation and improved negotiation through collective bargaining.

In remote areas and for products with a poorly developed value chain, producers may act as traders on opportunistic bases. Producers and traders may also rely on middlemen to transport to and/or market their produce. This is the case with *Irvingia gabonensis* commonly called “bush mango” in Cameroon where traders rely heavily on middlemen (local collectors) for their supply. With other products such as *Ricinodendron heudelotii* in some villages in Cameroon, producers cannot sell unless the trader comes to the village.

### NTFPs versus agricultural products value chains

When setting up businesses using NTFPs, the following key differences in their value chain compared to agricultural products are essential (Table 4.1). Note should be taken that NTFPs compared below are those that have not yet undergone cultivation as some NTFPs are now cultivated as smallholder crops and may respond to biological and market trends as other agricultural products (Boxes 4.1 and 4.2).

**Table 4.1:** Key differences in the value chains of NTFPs and smallholder agricultural products

Factor	NTFPs	Smallholder agricultural products
Related policies	Little relevant policy in support of commercialization; usually restricts policies in place including credit harvest and/or transport and sale of provision, extension, research NTFP	Agricultural products supportive policies in place including credit harvest and/or transport and sale of provision, extension, research
Market structure	'Local markets'-often few buyers for the total product from a area	Many buyers at different scales; producers have more options for trading
Market information	Very little available; through intermediaries	channelled Often widely available via radio, parastatals
Production volumes	Often supplementary as production varies as producers choose between different livelihoods opportunities	Usually more consistent part of livelihoods, leading to more predictable production volumes.
Destination markets	Very diverse, faddish, frequently 'luxury' goods and niche markets	Better known markets and more predictable
Resource tenure	Insecure tenure over collection areas leads to risk of over-exploitation; inability to manage the resource (improve quality and/or quality	Individual tenure, therefore ability to exclude others, provides incentives to invest in the resource.
Sourcing	Often distant from the home with low production densities necessitate bulking	Fields often close to or in walking distance to home and cultivation leads to higher densities

Source: Adapted from Kuster and Belcher, 2004

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**Box 4.1:** Production and commercialization of two NTFPs: the case of *Recinodendron heudelotii* in Cameroon and Gum Arabic in Kenya



Several subcategories of activities may be involved in NTFP value chains. These activities include collection, processing, storage, transport, marketing and sale. The relative importance of each activity differs from product to product. This case study presents a table of two NTFPs and the challenges involved in the development of their value chains.

Value chain characteristics	Non-Timber Forest Product	
	<i>Ricinodendron heudelotii</i> (Njansang)	<i>Ricinodendron heudelotii</i> (Njansang)
Tree product/part commercialized	Dried yellow kernels	Gum (dried exudation obtained from the stems and branches)
Current uses	Culinary (nuts ground and used as flavour and thickener in soups), medicinal and cultural	Culinary, medicinal and technical (printing, ceramics and textile industries)
Domestication	Trees from seedlings integrated in various farming systems (cocoa farms) and patches of secondary forest	Trees from seedlings as plantation and integrated into different farming systems.
Collection	From primary and abandoned secondary forest.	From wild (animal pasture)
Post-harvest handling	Machine that cracks nuts into kernels after washing of fruit pulp and drying of nuts by Common Initiative Groups (CIGs).	Storage, cleaning, sorting, grading, packaging and labelling by specialized collectors on full time bases and by individuals on part time bases.
Processing	No formal processing involved currently but a few individuals process nuts into oil and cake for traditional use only.	Exported in raw form except for a small quantity that is ground and graded by a local exporter (Arid Land Resources Limited)
Marketing	The supply chain is composed of local producers, local collectors, wholesalers, retailers and exporters.	The supply chain is composed of gum collectors and producers, local retailers, wholesalers and exporters.

### Questions

1. What similarities and differences exist in the values chains of the two NTFPs?
2. What strategies could be employed by dealers in both NTFPs to increase the quantity collected and sold from the wild or forest?
3. Outline the different agribusiness opportunities that can be created along the value chain of the different NTFPs.
4. If you were to specialize in the marketing of one of the two NTFPs, which will you select and which markets will you develop along its value chain. Which comparative advantages exist for selecting the NTFP and the markets to be developed?
5. Suggest two important activities not mentioned in the value chains of the two NTFPs which could contribute in improving the value chain.
6. Outline five environmental/external factors that can affect value chain development and marketing of the two NTFPs.

#### **Box 4.2:** Contextual factors affecting the production and commercialization of *Ricnodendron heudelotii* in the southern regions of Cameroon

For optimum production and commercialization of NTFPs and; for the NTFP sector to sufficiently improve livelihoods and the environment, there is need for an appropriate institutional and policy framework. In Cameroon like many other countries in Africa, a very weak policy and institutional framework exist in support of production and commercialization of NTFPs. This case study presents the institutional and policy environment surrounding the production and commercialization of *Ricnodendron heudelotii* and its potential implications at household and group levels.

The production and sales of *Ricnodendron heudelotii* in southern Cameroon is partly undertaken by producers and traders organized in groups (Common Initiative Groups). The prevailing contextual factors surrounding the production and sales of the product include: inappropriate government policy/legislation governing NTFPs (*R. heudelotii*), limited Government spending on rural infrastructure (roads, ICT, markets, etc.), insufficient access to finance and financial services, high rural-urban exodus of mostly active age group, unstructured markets with high price variation, poor governance, etc. Though NTFPs and AFTPs have been promoted over the years by international bodies the environment/context in which these products are promoted still remain a challenge to smallholder producer livelihoods improvement.

## Conclusion

Although commercialization of NFTP has many potential benefits, not much has been done in this respect. Apart from increasing income and employment opportunities for poor and disadvantaged populations, it is also associated with conservation of forests. The emergence of new markets for natural products and the development of new marketing mechanisms (green marketing, fair trade) have created increased demand for NFTPs. However, for this potential to be actualised, existing challenges - poorly developed markets and dispersed production, lack of appropriate technology, growing need for certified products, barriers to market entry - must be addressed.

## Suggested further reading

- 1) Gum Arabic in the United Kingdom. CBI Market Information Database · [URL:http://www.cbi.eu](http://www.cbi.eu)
- 2) Gum Arabic in France, CBI Market Information Database · [URL:http://www.cbi.eu](http://www.cbi.eu)
- 3) Gum Arabic in Germany, CBI Market Information Database · [URL:http://www.cbi.eu](http://www.cbi.eu)
- 4) Policy and Legal Framework Governing Trees: Incentives or Disincentives for Smallholder Tree Planting Decisions in Cameroon? (Foundjem-Tita et al, 2012).
- 5) *Ricinodendron heudelotii* (Djansang): ethnobotany and importance for forest dwellers in Southern Cameroon (Fondoun et al, 1999).
- 6) Can the commercialization of NTFPs alleviate poverty? A case study of *Ricinodendron heudelotii* (Bail.) Pierre x Pax. Kernel marketing in Cameroon (Cosyns et al. 2012).

## Questions for study and discussion

1. Define NTFPs and outline the major hindrances associated with the collection and reporting of data pertaining to their extraction rates and sustainability.
2. Outline the two principal objectives for promoting NTFP commercialization and the marketing challenges associated to their trade.
3. Characterize the key actors involved and businesses that could be developed in NTFP value chains?

4. Expound on the key factors that differentiate NFTP value chains from agricultural products value chains.
5. Complete the Table 4.2 below with present and medium term implications of different contextual factors on production and marketing of *njansang* at group and household levels.

**Table 4.2:** Contextual factors on production and marketing of *Njansang*

<b>Contextual factors</b>	<b>Implications on production and marketing of <i>njansang</i> at group and household levels</b>
<p style="text-align: center;"><b>Market trends</b></p> <p>Unstructured markets with high price variation</p>	<p><i>Producer and trader association</i></p>
<p style="text-align: center;"><b>Market trends</b></p> <p>Increased demand and prices for graded and well processed <i>njansang</i>.</p>	<p>Limited access to market information, poor linkage between traders and producers,</p>
<p style="text-align: center;"><b>Rural infrastructure and services</b></p> <p>Limited government spending on rural infra-structures (roads, ICT, markets)</p>	<p><i>Household</i></p> <p>Unstable income in households</p>
<p style="text-align: center;"><b>Institutional Environment</b></p> <p>Inappropriate Government legislation/Policy governing <i>R. heudelotii</i> production and sales</p>	
<p style="text-align: center;"><b>Finance and microfinance</b></p> <p>Insufficient access to microfinance and financial services</p>	
<p style="text-align: center;"><b>Macroeconomic indicators</b></p> <p>Higher proportion of active age group in urban than rural areas</p>	
<p style="text-align: center;"><b>Structure of producer associations</b></p> <p>Structurally weak groups With poor governance</p>	

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## Chapitre 5

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### TECHNIQUES POUR LA CULTURE MARAÎCHÈRE EN AFRIQUE

Ouattara-Soro F. S.<sup>1</sup> and M. Bedikou<sup>1</sup>

#### Résumé

Les légumes et les produits protéagineux sont réputés être très riches en vitamines, en sels minéraux et en protéines ; ce qui constitue un important moyen de lutte contre la malnutrition surtout chez les enfants, les femmes enceintes et les maladies cardiovasculaires. Au Nord de la Côte d'Ivoire, le maraîchage bien qu'étant un secteur informel, constitue un appoint non négligeable dans l'alimentation et une source de revenus substantiels pour les populations locales. Ce chapitre est un support pour renforcer les capacités agricoles en production maraîchère dans la formation universitaire et professionnelle. Il permettra également aux étudiants inscrits en MASTER d'avoir une meilleure connaissance de la chaîne des valeurs, de la promotion des petites unités de transformation et de la vulgarisation des méthodes de transformation utilisées par les maraîchers afin d'accroître leur esprit d'entrepreneuriat.

#### *Techniques for Vegetable Growing in Africa*

#### *Abstract*

*Vegetables and protein rich products are known to contain vitamins, minerals and proteins and thus constitute an important means for fighting against cardiovascular disease and malnutrition especially among children and pregnant women.*

*In northern Côte d'Ivoire, gardening despite being an informal sector, contributes significantly to nutrition and is a source of substantial income for local people. This chapter aims at strengthening agricultural capacities on vegetable production in the academic and professional training. It will also allow students enrolled in Master degree programmes to have a better understanding of the value chain, the promotion of small processing units and the popularization of processing methods used by gardeners in order to raise their entrepreneurial mindset.*

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## Introduction

En Afrique subsaharienne, la croissance rapide de la population urbaine pose un triple défi: le défi des changements dans la composition de la demande alimentaire dus à l'urbanisation des populations; le défi posé par la pauvreté globale des populations urbaines et le défi d'une demande alimentaire en constante augmentation qui suppose une réadaptation permanente de modalités de l'approvisionnement depuis la production jusqu'à la commercialisation (Franqueville, 1997; Gheboutin, 1997; Temple et Moustier, 2004; Broutin, *et al.*, 2005). Dans ces pays d'Afrique subsaharienne, l'approvisionnement en produits alimentaires des villes constitue un enjeu important pour l'agriculture. Cet approvisionnement est assuré à travers un ensemble de filières traditionnelles, notamment les filières maraîchères qui ont un impact important sur l'économie de ces pays (Essang, 1994). Dans certains pays comme la Côte d'Ivoire, une réorientation des activités vers l'exploitation de la filière maraîchère a été observée et est une réaction de prévention en réponse aux signes précurseurs des crises de certaines cultures de rente, des risques climatiques, des incertitudes économiques et de l'urbanisation rapide (Djoulde, 2002). Par ailleurs, les espèces protéagineuses et les maraîchères sont des cultures de première importance capitale pour l'alimentation de base en Côte d'Ivoire, car elles sont la principale source de vitamines et d'oligoéléments pour les populations. En 2010, la production nationale ivoirienne des légumes était estimée à plus de 850 000 tonnes dont 400 000 tonnes pour les légumes de type européen et 450 000 tonnes pour les légumes traditionnels selon le plan directeur de l'horticulture de Côte d'Ivoire 2006/2025 (Le Partenaire, 2009). Aussi, les activités de productions de ces cultures occupent une frange importante de la population constituée d'environ 60% de femmes et de jeunes des zones urbaines et périurbaines. Une mauvaise gestion de cette production induirait une énorme perte, un manque à gagner et une précarité notable tant au plan social qu'économique pour les producteurs Africains. L'acquisition de connaissances, sur la production, le transport de ces produits la commercialisation et la transformation du surplus de production, que présente ce chapitre, s'avère donc capitale.

Certaines études sur l'évolution des populations mondiales s'accordent pour dire que l'urbanisation et l'augmentation de la pauvreté vont de pair. Les données de la Banque mondiale (1990) montrent qu'en 1988, 25% des populations les plus pauvres vivaient en ville. En 2000, cette proportion aurait atteint 50% (sur <http://www.formation-continue.theodore-monod.educagri.fr>). Pour Griffon (2003), le phénomène est particulièrement vrai en Afrique où les villes « deviennent des lieux de concentration de populations à faible pouvoir d'achat ».

Ainsi, la moitié des ménages des plus grandes villes des pays en développement (PED) consacrerait 50 à 80% de leurs revenus pour l'achat de nourriture, plaçant la question de la sécurité alimentaire comme un enjeu majeur pour ces populations (sur <http://www.formation-continue.theodore-monod.educagri.fr>). Selon N'Diéonor (2006), la situation précaire dans laquelle vit une part

importante des urbains leur impose de produire sur place, à proximité des villes. Le renforcement des liens de l'agriculture urbaine et périurbaine avec la ville permet de bénéficier du faible coût d'acheminement des produits et des ressources potentielles que peuvent constituer les déchets urbains. L'agriculture urbaine et périurbaine est largement dominée par les systèmes de production à cycle court. Les secteurs les plus représentés sont en premier lieu le maraîchage suivi de l'élevage (Moustier *et al.*, 2004). Les études menées par Moustier et David (1997) dans certaines villes d'Afrique entre 1990 et 1995, révèlent un pourcentage de ménages impliqués dans la production de légume de 10% à Gaoua (Cameroun) à 50% à Antananarivo. Par ailleurs, la part de l'agriculture située en ville et à sa périphérie dans l'approvisionnement en légumes-feuilles est de 80% pour Brazzaville, 100% pour Bangui et 90% pour Bissau et Antananarivo. Outre la petite taille des surfaces cultivées, les systèmes maraîchers produisent différents types de légumes qui se différencient selon la longueur de leur cycle, leurs exigences en intrants et le degré de risque lié à leur production (sensibilité aux maladies et aux ravageurs) ainsi qu'à leur commercialisation (délai de stockage et de transport, demande du marché). Les légumes-feuilles de cycle court (moins d'un mois), comme l'amarante, le chou chinois et l'oseille locale, sont peu sensibles aux parasites et demandent peu d'intrants.

Une large clientèle les consomme régulièrement, et assure ainsi une rentrée d'argent quasi quotidienne au producteur. Les légumes d'origine tempérée à cycle long (plus de deux mois), comme les tomates, les carottes et les concombres, présentent des risques à la production et à la commercialisation, cependant leurs marges par hectare sont les plus élevées (Moustier *et al.*, 2004).

### **Objectifs d'apprentissage**

- Développer les bonnes pratiques culturelles de la production maraîchère en zone urbaine et périurbaine ;
- Vulgariser les itinéraires techniques de la production maraîchère ;
- Adapter les variétés sélectionnées aux conditions locales de production ;
- Améliorer le système de commercialisation utilisé par les maraîchers ;
- Développer la transformation du maraîcher dans la région.

### **Résultats d'apprentissage**

L'étudiant, à la fin de ce chapitre, devra être capable de :

- Sélectionner des variétés améliorées à haut rendement pour la région ;
- Elaborer des itinéraires techniques ;

Recommander les conditions saines de production des cultures maraîchères en zones urbaine et périurbaine ;

Exploiter les opportunités de marché additionnel ;

Analyser les capacités et les potentialités de transformation des produits dans la région.

### **Différentes étapes d'une bonne production maraîchère**

Le maraîchage est une activité qui a connu un important développement au cours des trente dernières années. Il s'adresse à différents types d'acteurs: des coopératives, des groupements familiaux et certains particuliers. Il concerne également des regroupements de femmes ou de jeunes que des écoles créant de petits jardins potagers scolaires éducatifs.

Le maraîchage peut donc prendre des formes très variées allant de quelques dizaines ou centaines de m<sup>2</sup> à plusieurs hectares. Le maraîchage est donc un bon moyen d'améliorer la nutrition des populations, de s'assurer de leur auto-suffisance alimentaire, d'apporter des revenus complémentaires mais aussi de promouvoir des activités sociales et communautaires. Ce type d'activité peut être financièrement rentable et améliorer considérablement la situation économique des communautés concernées, mais il n'est pas toujours simple à mettre en place et demande un certain travail de réflexion préalable.

### **Choix du sol**

Le maraîchage se pratique plus aisément dans des sols drainants, pas trop argileux, peu caillouteux et peu calcaires, assez profonds, avec une plage de pH allant de 5,5 à 6,5. Les facteurs édaphiques ont trait aux propriétés physiques et chimiques des sols qui ont une action écologique sur les êtres vivants. Les sols hautement favorables aux cultures irriguées sont les vertisols et les sols hydromorphes à cause de leur potentiel chimique. Pour Couliadiati et Hiema (1990), ces sols ont un potentiel chimique très élevé et se prêtent le mieux aux cultures irriguées, dont celle du maraîchage. Cependant, ces terres, du fait de leur nature gonflante, sont difficiles à travailler et exigent une mécanisation adéquate. Les sols hydromorphes ou glysols sont des sols très hétérogènes mais dans des conditions favorables de texture et d'hydromorphie, ils sont utilisables pour la culture du riz en saison des pluies et du maraîchage en saison sèche. Les sols argileux, calcaires et humifères, sont aussi exploités pour la production maraîchère à condition d'apporter les corrections nécessaires à savoir certains fertilisants.

## Fertilisation du sol

La plupart des sols Africains sont caractérisés par une carence en matière organique à cause des phénomènes d'érosion et de lessivage qu'ils subissent. Leur utilisation pour les cultures maraichères devrait prévoir l'apport fragmenté de fumure de fond et l'apport massif de fumure organique pour améliorer leur structure par conséquent leur fertilité. Ainsi, l'utilisation efficace des engrais minéraux est incontournable pour améliorer la productivité agricole et faire face aux défis alimentaires et de réduction de la pauvreté en Afrique de l'Ouest. En effet, les plantes, pour leur croissance ont besoin d'éléments minéraux (azote N, phosphore P, potassium K et micro-éléments) tirés du sol, de carbone tiré du gaz carbonique (CO<sub>2</sub>) de l'air, et d'hydrogène (H) et d'oxygène (O<sub>2</sub>) tirés de l'eau (Brown, 1942 ; van der Ploeg *et al.* 1999). Les nutriments majeurs N, P et K sont disponibles en quantités limitées dans les sols cultivés et doivent y être apportés à travers divers produits fertilisants pour restaurer la fertilité.

La culture légumière en général est exigeante en éléments fertilisants, les besoins sont assez élevés. On veillera donc à ce que le sol soit suffisamment riche. Schématiquement, la base de fertilisation consiste à disposer d'un sol dont le taux d'humus (actif) approche ou dépasse 5%. La minéralisation progressive de cet humus met ensuite à la disposition des légumes les éléments nutritifs nécessaires. Lorsque la préparation pour la commercialisation de la production se fait directement au champ, les apports pour la fertilisation sont réduits. Une analyse de sol régulière, tous les 3 à 5 ans, permettra d'ajuster ses besoins grâce aux apports de fertilisants.

## Matières fertilisantes

La fertilisation vise à rechercher un équilibre pour que le sol possède des matières organiques facilement minéralisables et des matières organiques formant de l'humus. Il existe différents types d'engrais tels que les engrais organiques, les engrais verts, les engrais simples et les engrais composés. Les engrais organiques ont différents apports aux sols tels que les apports de fumier et de compost mûrs formant de l'humus ainsi que les apports de compost jeune. Les engrais verts offrent de nombreux avantages telles que la stimulation de la vie microbienne; l'amélioration de la structure du sol; et la protection mécanique contre le lessivage. Les engrais simples ne contiennent qu'un seul élément nutritif, tandis que les engrais composés en contiennent deux ou trois. L'appellation des engrais minéraux est normalisée par la référence à leurs trois composants principaux : N-P-K.

Les engrais simples sont azotés, phosphatés ou potassiques. Les engrais composés sont au moins binaires (contiennent deux éléments N-P ou P-K ou N-K). Ces lettres sont généralement suivies de chiffres, représentant la proportion respective de ces éléments.

## Calcul de la dose d'engrais

La méthode est simple. Il suffit de savoir résoudre une règle de trois. Les concentrations des unités fertilisantes dans les engrais sont exprimées en % (c'est-à-dire par 100 kg de produit commercial) et les besoins des cultures sont donnés par hectare. La formule de calcul de dose est la suivante :

Dose recommandée = besoins de la plante × 100 kg / la dose de l'engrais

Exemple :

Calcul de la dose de fertilisation d'une plante dont les besoins sont de 60 unités (kg) N/ha avec de l'urée 46% :

Dose recommandée =  $60 \times 100 / 46 = 130$  kg

## Semences

La production de plants sur son exploitation correspond à des choix personnels, pratiques ou économiques. Elle permet d'être autonome, notamment pour le choix des variétés et des périodes de semis et de plantation. Elle réduit généralement le coût de production de la culture. Dans ces conditions, l'on utilise des semences sous forme de grains pour les semis.

**Tableau 5.1 :** Températures minimales de germination de quelques espèces de semences

<b>Espèces</b>	<b>Températures minimales de germination</b>
Espèces exigeantes en chaleur pour la germination : saison sèche	
Concombre	28°C – 35°C
Tomate – poivron - aubergine	27°C - 34°C
Melon – pastèque - courgette	25°C - 32°C
Oignon – poireau - Persil	21- 28°C
Espèces pouvant germer à basse température : saison de pluie	
Laitue- épinard -chou	20°C

## Irrigation

La production de légumes se déroule la plupart du temps en saison sèche, période au cours de laquelle le degré d'humidité du sol et de l'air est très bas. D'où la nécessité impérieuse d'irriguer. L'irrigation des cultures maraichères est un point à maîtriser pour permettre le bon développement des plantes: un manque d'eau conduit au dessèchement de la plante, alors qu'un excès provoque



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une asphyxie racinaire dont la conséquence est la même, l'affaiblissement puis la mort.

Plusieurs modes d'irrigation existent et peuvent coexister sur une parcelle. La liste ci-dessous présente les principaux modes, leurs avantages et leurs inconvénients.

### *Irrigation par le système de goutte à goutte (Figure 5.1)*

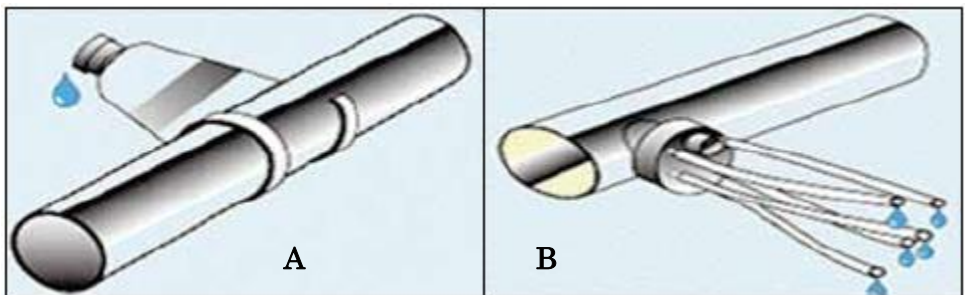
On appelle irrigation au goutte-à-goutte l'application lente et localisée d'eau, littéralement au goutte-à-goutte, au niveau d'un point ou d'une grille de points sur la surface du sol. Chaque goutteur doit déverser l'eau goutte à goutte sur le sol, à un débit prédéterminé, allant de 1 à 10 litres par heure (Rappel : 1 mm d'eau = 1 L/m<sup>2</sup> = 10m<sup>3</sup>/ha). Les légumes fruits sont très bien adaptés au goutte à goutte car leur plantation se fait en ligne. Deux lignes de goutteurs peuvent être nécessaires par ligne de plantation sur des sols à faible capacité hydrique.

### *Irrigation par aspersion (Figure 5.2)*

Ce type d'irrigation est largement utilisé de par son accessibilité facile. Le matériel utilisé est, pour la plupart des cas en Afrique, l'arrosoir. Ce système utilise un moindre débit et une moindre pression de service.

### *Irrigation par le système gravitaire (Figure 5.3)*

Il s'agit du mode d'irrigation le plus gourmand en eau. Il demande un terrain plat et des sols non battants. Une surveillance pendant l'irrigation est nécessaire



**Figure 5.1 (A et B):** Système d'irrigation de goutte à goutte (FAO 2010)



**Figure 5.2 (C et D):** Irrigation par aspersion (CIRAD 2009)



**Figure 5.3 (E et F) :** Irrigation par le système gravitaire (<http://www.bionetagro.org/>)

### **Itinéraire technique pour une bonne croissance maraîchère**

1. Faire les semis sur une couche chaude ;
2. Repiquer les plants assez profondément en motte de 7 cm et les mettre également sur couche chaude, baisser la température en arrosant de façon progressive selon les exigences de l'espèce ;
3. Mettre les mottes dans l'eau pendant 15 à 30 mn ;
4. Planter 10 - 12 cm de profondeur après avoir passé une ficelle sous la motte ;
5. Arroser et faire un paillage biodégradable des allées ;

6. Tailler les plantules 1 fois par semaine en levant tous les bourgeons secondaires ou gourmands. Pour la tomate grappe, enlever les fleurs en excédent sur les bouquets pour n'en conserver que 5 à 7 ;
7. Arroser 2 à 3 fois par semaine du fait des besoins élevés de la plante à partir de la formation du 3<sup>e</sup> ou 4<sup>e</sup> bouquet (environ 1 l d'eau / plant/ jour) ;
8. Effeuillez les premiers fruits avant maturation puis tous les 15 jours ;
9. Récolter 2 à 3 fois par semaine selon le développement de l'espèce cultivée.

### **Culture hors sol**

La culture hors sol permet à de petites surfaces de produire de grandes récoltes. Comme son nom l'indique dans la culture hors sol, les plants ne sont pas en contact avec le sol, mais enfouis dans un substrat autre que la terre, qui lui-même se trouve dans un petit sac en plastique ou un pot. En lieu et place de la tourbe de coco généralement utilisée comme substrat, l'on utilise les sciures de bois ou aux coques de cacao. La fiente de volailles comme engrais est également utilisée à cet effet.

### **Principe de la culture hors sol**

Le principe de production hors sol consiste à apporter au niveau de chaque plante par un système de goutte à goutte les éléments minéraux et les oligo-éléments dont la plante a besoin. Les racines colonisent un substrat inerte servant de support à la plante et disposant de propriétés physiques particulières (rétention en eau et en air importante). Le maintien de l'eau et des éléments minéraux à des niveaux optima dans la rhizosphère des plantes est le principal facteur favorisant leurs hautes efficacités d'utilisation, se traduisant par des rendements élevés des cultures et une meilleure qualité. L'apport des engrais dans l'eau d'irrigation, appelé fertigation ou ferti irrigation. - ou irrigation fertilisante, permet d'atteindre un équilibre ionique optimal au niveau de la rhizosphère.

### **Récolte et transport**

La plupart des produits maraîchers ont été récoltés de façon manuelle dans des paniers, des cageots ainsi que dans des sacs (Figure 5.4). Elle se fait en fin de croissance de la production concernée: fruits (ex. tomate, aubergine, gombo) présentant la couleur de maturité, feuilles (ex. laitue, épinard) et racines (ex.

carotte, navet) lorsque les feuilles sont bien développées présentant la couleur normale de maturité. Le conditionnement se fait dans des cageots ainsi que dans des sacs (de 25 kg, 45 kg et 50 kg). Les cageots ne sont pas complètement remplis, et les sacs également sont remplis de manière à ce que les produits de récolte ne soient pas trop tassés pour éviter des pertes lors du transport. Les produits récoltés, sont transportés (Figure 5.5) à motocyclette ou à vélo pour la consommation et ceux destinés à la commercialisation sont transportés par des camions ou des bâchés.



**Figure 5.4:** Récolte et transport de produits maraîchers (FAO 2010)

### Commercialisation

Pour une bonne commercialisation des produits maraîchers, il est important de mettre en place des supports de concertation entre producteurs et commerçants. Ces supports consistent en deux ateliers dont le premier avant le début de la prochaine récolte qui permettra de déboucher sur une contractualisation entre producteurs, commerçant(e)s et transporteurs. Le second, à la fin de la campagne, doit faire un bilan du partenariat au cours de la campagne pour relever les atouts enregistrés et insuffisances à corriger.

#### Instaurer la vente sur contrat

Ce système vise à:

- instaurer une corrélation entre la production et la demande sur le marché ;
- éviter que le producteur ne supporte davantage de pertes après récolte ;
- garantir un prix plus rémunérateur au producteur, intégrant les coûts de

production, toute chose qui contribue à faire de la production maraîchère un véritable emploi temporaire ou permanent selon le type de maraîcher ;

- contribuer à professionnaliser le producteur.

Au regard du contexte de la région, pour les producteurs individuels, la vente sur contrat permet de mettre directement le producteur en relation avec les grossistes qui se chargent par la suite d'approvisionner les demi-grossistes et détaillants auprès de qui viennent s'approvisionner les consommateurs. Quant aux groupements de producteurs, leurs contrats sont négociés par des comités de commercialisation avec les commerçantes grossistes. Le conditionnement des produits après paiement du producteur est suivi de l'enlèvement immédiat à cause de la nature périssable des denrées. Concernant l'option de livraison local magasin-client, le groupement se charge du conditionnement et du transport de la marchandise jusqu'au magasin du client dûment indiqué dans le contrat. Parallèlement à la vente par contrat, il sera nécessaire de mettre en place un centre de distribution (Centre Commercial de Produits Maraîchers), équipé d'une chambre froide pour l'entreposage des produits maraîchers. Le système d'entreposage vise à sauvegarder l'identité des lots des groupements et des producteurs individuels. Ce centre approvisionnera les clients grossistes, demi-grossistes et détaillants, sur place ou par des livraisons à domicile. Ce centre devrait être animé d'un personnel assez léger comprenant un agent commercial, un caissier ou une caissière, et quelques manutentionnaires occasionnels. Outre la chambre froide d'une capacité proportionnelle aux besoins d'entreposage des produits, le centre doit également être doté:

- d'une bascule pour les gros enlèvements, et une balance pour les petites mesures, toute chose qui pourra familiariser la clientèle au système de pesée ;
- d'emballages en fonction des différents produits ;
- d'une moto équipée d'un triporteur pour les livraisons à domicile.

Le système de gestion à développer pour le centre doit fonctionner sur des commissions à prélever sur les ventes réalisées pour le compte des groupements ou producteurs individuels pour assurer à la fois l'amortissement des équipements et le fonctionnement du centre. L'exploitation d'opportunités de marchés additionnels doit être envisagée à savoir approvisionner les pays voisins.

### **Transformation et Conservation**

Dans la plupart des pays d'Afrique de l'Ouest, le séchage constitue le principal moyen de conservation des produits agricoles. Il permet de réduire les pertes après-récolte, mais aussi les coûts de transport et autorise ainsi une

commercialisation au-delà des frontières nationales. Pour les consommateurs et les négociants, il accroît la disponibilité et la régularité des produits sur les marchés; pour les producteurs, il permet d'augmenter les revenus et de mieux les répartir dans le temps. C'est pourquoi les produits séchés restent les exemples adéquats dans le processus de la transformation des produits agricoles. Le développement de nouvelles activités de séchage et de nouveaux produits séchés (ex. oignon, mangue) pour satisfaire la demande urbaine s'appuie sur une bonne connaissance du fonctionnement et des acteurs des filières existantes.

La poudre de tomate et de piment, ou les cossettes d'igname au Bénin sont des cas intéressants, car ces produits séchés circulent et sont présents sur les marchés urbains dans toute la zone des savanes d'Afrique centrale ou d'Afrique de l'Ouest. Les produits maraîchers faisant l'objet de transformation dans la région Africaine sont: la tomate, le piment, le gombo, la pastèque et l'oseille de Guinée ou Bissap.

### Conclusion

Le maraîchage est une activité qui a connu un important développement au cours des trente dernières années. Il s'adresse à différents types d'acteurs: des coopératives, des groupements familiaux et certains particuliers. Il concerne également des regroupements de femmes ou de jeunes créés par certaines écoles autour de petits jardins potagers scolaires éducatifs. Le maraîchage peut donc prendre des formes très variées allant de quelques dizaines ou centaines de m<sup>2</sup> à plusieurs hectares. Les produits maraîchers occupent une place importante dans les activités de commercialisation des produits agricoles de l'Afrique. Parmi ces produits, l'oignon, la tomate, le piment, le gombo et les légumes feuilles sont les plus commercialisés et consommés. L'essentiel des produits commercialisés dans les marchés provient des zones urbaines et périurbaines. L'offre sur ces marchés est fortement saisonnière et les approvisionnements sont généralement journaliers et hebdomadaires.

Ainsi, pour une bonne production maraîchère, il faudrait respecter certaines étapes importantes relatives aux choix du sol. Pour cette étape, choisir un sol drainant, pas trop argileux, peu caillouteux et peu calcaire, assez profonds, avec une plage de pH allant de 5,5 à 6,5.

Les sols utilisés pour les cultures maraîchères devraient prévoir l'apport fragmenté de fumure de fond et l'apport massif de fumure organique pour améliorer leur structure par conséquent leur fertilité.

L'utilisation de matières fertilisantes telles que les engrais verts offrent de nombreux avantages que sont, la stimulation de la vie microbienne; l'amélioration de la structure du sol; et la protection mécanique du sol contre le lessivage.

Le choix des semences est également un facteur important pour une bonne production. En effet, la production de plants sur son exploitation correspond à des choix personnels, pratiques ou économiques. Elle permet d'être autonome, notamment pour le choix des variétés et des périodes de semis et de plantation. Elle réduit généralement le coût de production de la culture.

L'irrigation des cultures maraichères est un point à maîtriser pour permettre le bon développement des plantes: un manque d'eau conduit au dessèchement de la plante, alors qu'un excès provoque une asphyxie racinaire dont la conséquence est la même, l'affaiblissement puis la mort.

L'itinéraire technique pour une bonne croissance maraichère est donc le suivant:

- faire les semis sur une couche chaude ;
- repiquer les plants assez profondément en motte de 7 cm et les mettre également sur couche chaude, baisser la température en arrosant de façon progressive selon les exigences de l'espèce ;
- mettre les mottes dans l'eau pendant 15 à 30 mn ;
- planter 10 - 12 cm de profondeur après avoir passé une ficelle sous la motte ;
- arroser et faire un paillage biodégradable des allées ;
- tailler les plantules 1 fois par semaine en levant tous les bourgeons secondaires ou gourmands. Pour la tomate grappe, enlever les fleurs en excédent sur les bouquets pour n'en conserver que 5 à 7 ;
- arroser 2 à 3 fois par semaine du fait des besoins élevés de la plante à partir de la formation du 3<sup>e</sup> ou 4<sup>e</sup> bouquet (environ 1 l d'eau / plant/ jour) ;
- effeuiller les premiers fruits avant maturation puis tous les 15 jours ;
- récolter 2 à 3 fois par semaine selon le développement de l'espèce cultivée.

Après la récolte, plusieurs moyens de transport sont utilisés pour assurer l'approvisionnement des marchés en fonction du type de produit, de la distance, du type d'acteur et du lieu de vente. Ainsi il existe les transports par : tête, porte tout, taxi moto, car et camion. Par ailleurs, l'analyse des circuits de commercialisation permet de mettre en exergue trois types de circuits. Des circuits longs, avec la présence de plusieurs intermédiaires entre les producteurs et les consommateurs. Les circuits courts pour les légumes de type européen, avec peu d'intermédiaires et enfin les circuits directs pour les légumes de type local, avec



presque pas d'intermédiaire. Le maraîchage est donc un bon moyen d'améliorer la nutrition des populations, de s'assurer de leur auto-suffisance alimentaire. Il permet la création d'activités financièrement rentables et permet d'améliorer considérablement la situation économique des communautés concernées.

### Questions

- Indiquer les préférences pédo-climatiques de la tomate ;
- Identifier les variétés à bon rendement de la tomate (semis et plantation) ;
- Quelles sont les pratiques culturales à savoir : Fertilisation, Irrigation, soins culturaux et lutte phytosanitaire utilisées pour améliorer la production de la tomate ;
- Quelles sont précaution à prendre pour une bonne récolte et une bonne conservation de la tomate ;
- Citer les particularités de la tomate de saison à savoir : Fertilisation Irrigation et soins culturaux.

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<http://www.mvad-reunion.org>: Site de la Mission de Valorisation Agricole des Déchets, de nombreuses publications sur la valorisation des matières organiques (fumiers, lisiers, composts, boues de STEP, etc.)

[http://www.cirad.fr/reunion/produits/prestations/analyses\\_agronomiques](http://www.cirad.fr/reunion/produits/prestations/analyses_agronomiques): Adresse du laboratoire des sols du CIRAD, formulaire de demande d'analyses, tarifs de l'année en cours, etc.

<http://www.reunion.eaufrance.fr>: Système d'information sur l'eau du bassin Réunion

<http://www.formation-continue.theodore-monod.educagri.fr> <http://fr.wikipedia.org/wiki/Tomate>

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<http://tomodori.com/3culture/3culturecadres.htm>

[www.ca83.fr](http://www.ca83.fr); <http://www.ardepi.fr> (Association Régionale pour la maîtrise des irrigations) : vous y trouverez tous les coefficients culturaux ainsi que de nombreuses fiches techniques.

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## Chapter 6

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### AGRIBUSINESS ENTERPRISES IN AGRICULTURAL INPUTS: CASE OF AGRO-INPUTS AND CREDIT SERVICES

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#### Summary

Access to agricultural inputs and credit services played significant roles in the success of the green revolution in Latin America and Asia. The use of these inputs helped to raise agricultural productivity and farm incomes, thus laying the foundation for broader economic growth. Despite the growing evidence that fertilizers, seed and other agro-chemicals can substantially increase yields in Africa as well as slow down environmental degradation, farmers in Africa still lag far behind other developing countries in their usage. Similarly, an efficient credit system is a precondition for the effective fulfillment of the roles of agriculture and agribusiness. Thus, low inconsistent use of improved seed, fertilizer and credit services remains the single most important factor explaining the low yields and poverty in Africa. The low fertilizer use could be traced to demand and supply factors such as low farmer incomes; and the few fertilizer, seed and agro-chemicals market participants. This suggests a huge opportunity for agribusiness in fertilizer, seed and finance services in Africa.

#### *Entreprises d'Agrobusiness dans les intrants agricoles : cas des agro-inputs et des services de crédit*

#### *Résumé*

*L'accès aux intrants agricoles et aux services de crédit joue un rôle important dans le succès de la révolution verte en Amérique latine et en Asie. L'utilisation de ces intrants contribue à augmenter la productivité agricole et les revenus des agriculteurs, jetant ainsi les bases d'une croissance économique plus large. Malgré l'évidence croissante que les engrais, semences et autres produits agro-chimiques peuvent contribuer à augmenter considérablement les rendements en Afrique ainsi que leur faible impact négatif sur l'environnement, les agriculteurs en Afrique sont encore loin derrière ceux des autres pays en développement dans leur utilisation. De même, un système de crédit efficace est une condition préalable à l'accomplissement effectif des rôles de l'agriculture et l'agroalimentaire. Ainsi, la faible utilisation*

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*incompatible des semences améliorées, des engrais et des services de crédit demeure le facteur le plus important pour expliquer les faibles rendements et la pauvreté en Afrique. Le faible niveau d'utilisation d'engrais pourrait être attribué à des facteurs d'offre et de demande tels que les à les faibles revenus des agriculteurs, le manque d'engrais, de semences et des acteurs du marché agro-chimique. Ce qui suggère une énorme opportunité pour l'agro-industrie dans les engrais, les semences et les services financiers en Afrique.*

## **Introduction**

Agriculture is a key sector of the African economy. It is responsible for the production of food and fiber for the rapidly growing population, and raw materials for industries. About 70 percent of the population depends on agriculture or agricultural related activities for their livelihood. Better access to agricultural inputs and services are, however, critical to the development of the agricultural sector. This is so because in every region of the world, agricultural development has been associated with better access to improved seed, chemical fertilizer, animal feed, credit, extension services and, other inputs. Growth in the use of these inputs has accounted for large share of agricultural growth. Countries that have developed dynamic seed and fertilizer sectors, such as India and Thailand, have seen annual yield gains of 2-3 percent compared to about 1 percent in Africa (Chirwa *et al.*, 2010). Use of hybrid and improved open-pollinated seed is scanty across Africa. The challenge is to help smallholders close the gap between their yields of less than 2 tons per hectare and the 6-7 tons per hectare seen in other countries (a three-fold increase). This suggests a huge opportunity for agribusiness in fertilizer, seed and credit services in Africa.

Appropriate fertilizer levels, access to improved seed and other inputs played a significant role in the success of the green revolution in Latin America and Asia. The use of these inputs helped to raise agricultural productivity and farm incomes, thus laying the foundation for broader economic growth. As much as 50 percent of yield growth in these regions could be attributed to increased fertilizer and seed use. Despite the growing evidence that fertilizers, seed and other agro-chemicals can substantially increase yields in Africa as well as slow down environmental degradation, farmers in Africa are still far behind other developing countries in agro-chemicals use (FMA/FAO, 2010). Low inconsistent use of improved seed and fertilizer remains the single most important factor explaining the low yields in Africa. Low fertilizer and seed use not only constrains yields in the present but causes them to decline in the future, as soil nutrients are mined continually (Dorward *et al.*, 2008).

Although the low fertilizer use could be traced to demand and supply factors such as low farmer incomes, high market prices, public policies, limited fertilizer and seed market participants have also contributed to this gap. In Nigeria, the extension service is also instrumental in providing farmers access to fertilizer.

Based on interviews with extension agents, Beintema and Stads (2011) found that the primary constraint to fertilizer use was the physical absence of the product at the time that it is needed, rather than problems of affordability or farmers' lack of knowledge about its importance. Thus, the most often cited primary challenge for both male and female farmers is limited access to farm inputs.

Farm inputs are of two major types: first is the biological/technical which includes improved seed, fertilizers, plant protection chemicals-bio-pesticides, animal feeds, and mechanization equipment or tools, and farm capital in terms of financial input such as cash or credit in kind.

Financial inputs are usually service-oriented dealing primarily with the loaning or investing of money or the equivalents of money (stocks, bonds, property rights, etc. ) in agribusiness. Examples of financial services are commercial banks, insurance companies, thrift and loan societies, etc (Aboubakar, 2007).

The second major type of farm input is water, in terms of the provision of irrigation equipment and water facilities with a view to raising/increasing the number of cropping runs in any given year (FAO, 2010). The focus of this chapter is, however, on the latter.

### **Learning Objectives**

The objectives of this chapter are to:

- i. teach some of the agribusiness farm inputs available in Africa;
- ii. identify the constraints of the agro- inputs sector;
- iii. examine the level of private sector involvement in agro- and financial inputs business in Africa;
- iv. teach the warrantage credit system and present some case studies on agro-and financial inputs in Africa.

### **Learning Outcomes**

At the end of this chapter, students and practitioners will:

- i. know some of the agribusiness farm inputs available in Africa;
- ii. give examples of challenges of the agro-inputs sector;
- iii. describe the level of private sector involvement in biological and financial inputs business in Africa;





- iv. prepare a report recommending an action for removing the impediments in the case studies presented, for improving farmers' access to agricultural inputs in Africa; and
- v. describe in detail, the warrantage credit system and design at least two input business models suitable for Africa.

### **Challenges of the agro-inputs sector**

Relative to other sectors, agricultural input industries have specific challenges that impede their development in Africa. Seed of new varieties, for example, must be suitable for the environment where it is grown or it will not yield properly (Langyintuo *et al.*, 2008). Demand for seed is seasonally variable; thus, seed companies require specialized imported equipment. It is costly to establish an initial market for a dispersed clientele, and seed quality is unobservable before planting. The seed business is also technically complex, especially for hybrid seed, and requires skilled technical staff. A study of some registered seed companies in Eastern and Southern Africa identified a number of generic constraints, such as access to finance, poor infrastructure, competition, high investment cost, poor markets, weak extension services, a shortage of skilled technicians, and low adoption rates. Industry-specific constraints topped the list, however, including lack of access to germplasm, high start-up costs, and outdated and rigid seed policies and regulatory environment (Setimela *et al.*, 2009).

Inconsistence seed policies are a major constraint to growth of the private seed industry. At least five policy and regulatory areas are specific to the seed industry including policies governing: i) varietal release, ii) seed quality and certification, iii) intellectual property protection, iv) cross-border seed trade, which usually requires accreditation by the International Seed Testing Association, and v) testing and release of genetically modified organisms, especially bio-safety regulations. A review of the seed distribution system indicates that very few countries in Africa have the requisite policies in place (Setimela *et al.*, 2009).

Even when seed policies are in place, they are often outdated, unduly rigid, and difficult to implement. Releasing a new variety usually involves a long process—two years of national performance trials, followed by two years of distinctness, uniformity, and stability trials—even if breeders have extensively tested the variety or if it is being imported from a neighboring country. After a variety is approved for release, seed can take up to a decade to become available to farmers in significant quantities. Seed certification is made compulsory, although no country in Africa has the capacity to implement such a regulation. National policies are not harmonized across countries, leading to fragmented markets and high transaction costs for companies looking to expand market size by selling varieties or trading seed across a region (Freek *et al.*, 2010).

The fertilizer distribution system has its own challenges—there are major economies of scale in manufacturing and procurement; bulky fertilizer imports require good logistics and large amounts of financing, and fertilizer purchases by great numbers of smallholders are highly constrained by their lack of cash. Fertilizer use, like the use of seed, is location specific, highly seasonal, and the quality of the product cannot be observed. Because farmers obtain the best results from using both seed and fertilizer, close coordination is needed in developing both sectors, complemented by improving farmers' and dealers' skills, and access to information (Farrington, 2008).

In addition to these broad challenges identified, other constraints involved are the lack of sufficient agro-input dealers to ensure that smallholder farmers, especially those in remote rural communities have adequate access to agro-inputs; lack of adequate working capital; low demands; lack of market information; limited business skill and knowledge, compounded by lack of credit services for smallholder agro-dealers (Chianu *et al.*, 2008). Nevertheless, there are opportunities for increased productivity in African agriculture. Dorward (2009) argues that the high potential yields achievable with the “high response cereals” and “roots and tubers” suggests that these have the potential to make major contributions to driving and supporting pro-poor growth in African countries where these crops can be produced, depending on other potential drivers of growth such as agricultural inputs in these countries. Thus, encouraging the establishment of a stockiest network, which will make inputs required for crop production readily available in local markets, seems to be the solution to the low productivity of African agriculture. Hitherto, lack of growth in agro-input business, particularly fertilizer, has been blamed largely on past governments' over-involvement in its production and distribution (Kelly *et al.*, 2003; Wayo *et al.*, 2011). However, a wide variety of efforts including encouraging the establishment of a stockists network have been made to relieve the constraints of agricultural input market initiatives. Greater number of stockists will foster a business environment at the village level and expand opportunities in agribusiness in agricultural inputs.

### **Private sector involvement in seed business in Africa**

Liberalization in some countries has caused private sector investments in the seed sector to rise sharply. The number of private seed companies, especially local companies, is expanding rapidly. A review of maize varieties released in 13 African countries found that of 250 varieties released, over 60 percent were developed by private seed companies, with most activities focused on Kenya, Zambia and Zimbabwe (Setimela *et al.*, 2009).

Pioneer Hi-Bred, one of the global producers of maize hybrid, recognized the potential of commercial seed in Africa, where yields are very low and where underutilized farm land is available has been in the business for more than 50

years, operating primarily in southern and east-central Africa. On the other hand, Freshco Kenya Limited is one of several local seed companies that grew out of the 1996 liberalization of Kenya's seed industry. Freshco has worked on its own to produce and sell hybrid maize and other seed. Freshco worked primarily with smallholders, a strategy which had greatly paid-off (Setimela *et al.*, 2009). Another seed giant reported by the same authors was Monsanto.

In Nigeria, prior to the establishment of its National Seed Council of Nigeria (NSCN) in 1976, and the emergence of the Agricultural Development Projects (ADPs) in the 1970s, the production and distribution of certified seed were largely handled by the National Agricultural Research Institutes (NARs) and Special Agricultural Programs such as the National Accelerated Food Production Program (NAFPP). At later years, due to deteriorating financial situation of the NARs and NSCN, the lack of researchers' motivation and the termination of World Bank support for the ADPs, combined with limited capacity of these public sector agencies to produce and distribute adequate seed to support accelerated demand, the government decided to allow the private sector full participation in the production and marketing of seed. Prior to this, the private sector had been only minimally involved in the supply and distribution of seed (FMA/FAO, 2010). In this regard, the Premier Seed became the predominant private sector initiative in seed production and marketing in Nigeria. The private sector agencies obtain foundation seed from the NARs and multiply them through contract out-growers. The seed are packaged in units ranging from 2kg to 50kg and are sold through retail outlets such as Superstores, Farm Service Centers, private agencies such as Da-All GreenSeeds, Manoma Seeds, GoldenSeeds, Mercy Seeds, MaslahaSeeds, AlheriSeeds and individual suppliers, etc. As indicated by Okoro *et al.* (2011), less than 10 percent of the total improved seed requirement is being satisfied. The main task, therefore, is how to produce sufficient quantities of improved seed to satisfy self-sufficiency requirements in Africa suggesting that big business opportunities exist in the seed sector.

### **Credit services input**

Credit is a monetary or financial agribusiness input. It can take such forms as: money in cash or bank overdrafts, "in kind" as forms of biological and physical capital purchased and supplied to producers. In these two main forms, credit is often classified into long-term, medium-term and short-term. Short-term credit means loans for periods roughly corresponding with a cultivating season and not exceeding one year or eighteen months. Medium-term credit means loans for periods of two to five years, and long-term credit involves loans for longer periods which may extend from six to twenty or thirty years (Kelly *et al.*, 2003).

An efficient credit system is a precondition for the effective fulfillment of the roles of agriculture and agribusiness in:

- (i) generating internal capital through savings;

- (ii) producing sufficient food of high quality for feeding the growing population;
- (iii) providing raw materials and other fibres for home industries; and
- (iv) providing surplus food and fibre for export in any given country.

However, one of the major factors militating against agricultural modernization and agribusiness in Africa is the lack of adequate credit supply to the farmers. This is largely true of tropical Africa and other developing countries (Beintema and Stads, 2011).

Moreover, most innovations in agriculture inevitably increase the capital requirement of the farmers. Thus, the low rate of adoption of improved practices by African farmers could partly be due to the lack of adequate credit to implement them. Experience in many parts of tropical Africa has indicated that loans are essential tools for the adoption of modern practices in agriculture (Beintema and Stads, 2011). For example, the recent innovations in intensive system of poultry keeping for eggs and broiler production have been limited by lack of adequate credit facilities (World Bank, 2012). Also, it has been found (Yumkella *et al.*, 2011) that the productivity of the tree-crop economy can be raised substantially through control of pest and diseases such as blackpod and swollen shoot in cocoa. But the problem is that thousands of farmers trained in the disease control operations have been unable to take full advantage of the innovation due to lack of credit to purchase chemicals and cocoa-spraying equipment (World Bank, 2013). The need for credit is further stressed by:

- i. The bulk of farmers and primary producers produce largely for subsistence with such a small marketable surplus that they can hardly save from their earning to take full advantage of modern farming practices;
- ii. The seasonal nature of primary production, especially agriculture and fisheries and the corresponding income realization are such that production takes place long before income is generated. Even an annual arable crop takes several months to grow. The need, therefore, arises for short-term, medium-term and long-term credit to effectively finance any medium-scale or large-scale operations;
- iii. There is the need to strengthen the position of primary producers in disposing their produce rather than have the timing conditioned by the urgency of the need for cash. In other words, the low prices at harvest can be enhanced through efficient processing and storage and delay in sale of produce;
- iv. In many parts of tropical Africa, the scale of farm enterprises and the seasonal cycle in agriculture often result in under-employment on the farm during certain periods of the year. Credit is needed to introduce

appropriate supplementary and/or complementary enterprise in order to increase labour utilization and efficiency and thus promote a steady flow of income (Aboubacar, 2007).

The following question may be asked: what are the main sources of funds and credit open to producers in Africa's rural communities?

First, are the informal sources such as self-savings, gifts from relatives and friends, money lenders, merchants and produce dealers, thrift societies and cooperatives societies. Self-saving is possible if farmers can operate at a large enough scale and at a high level of productivity so as to obtain a reasonable margin of profit. Because of the predominant subsistence nature of farming in Africa, self-saving is an insufficient source of farm finance. Loans from relatives and friends are generally small and of short duration and may not be made available to farmers at the appropriate time. Relatives, too, have their own economic needs. The money lenders generally charge exorbitant rates of interest because of the risks involved, and in some cases the farmers who pledge their crops, land or houses have lost them due to their inability to pay the high rate of interest charged. Similarly, the merchants and produce-buying agents generally give loans to selected farmers with conditions that limit the farmers' freedom of selling and buying in a market of their own choice and the time most opportune to him. It is usually a precondition of loan that the farmer either buys from or sells his products to the merchants, sometimes at a predetermined but invariable lower price.

Second is the formal sources of credit such as commercial banks, cooperative bank sand State financial aid. But the majority of the farmers have no access to the commercial banks because they lack adequate security. The banks regard farming as too risky and an unreliable area of investment, especially in developing countries where the mastery of production practices is generally low. It is also known that the long production period tend to restrict the use of ordinary commercial banks as direct sources of credit to ordinary farmers, as these banks by the nature of their business require a quick turnover of their money. Besides, the potential borrowers are scattered over very wide and often inaccessible rural areas, and the banks are unwilling to employ touring staff necessary to maintain that constant touch with the clients.

Cooperative banks grant loans to cooperative societies which in turn pass on the loans to their individual members. But because of the very small percentage of farmers who are members of cooperative societies and the constrained resources of the cooperative banks, this is a very limited source of credit for agricultural development.

The State financial aid is essentially to supplement what credit is made available to farmers from private sources. The government may supply direct agricultural credit either through a special department of its ministry of agriculture, or

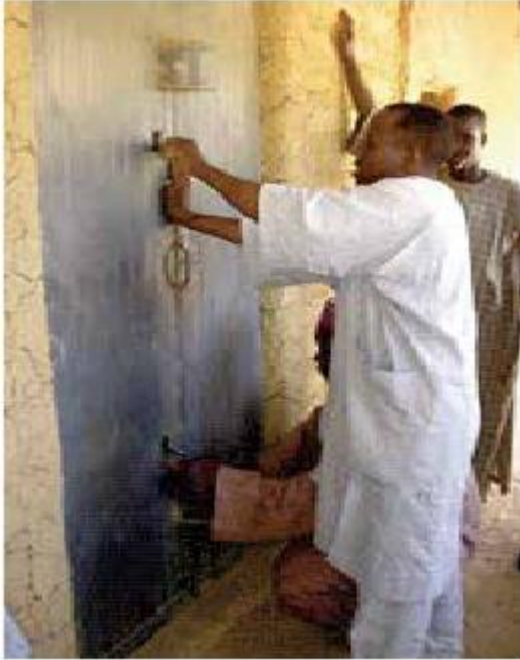
through a credit corporation or through cooperative societies. In developed countries, state financial aid has been known to contribute to rapid agricultural development (FAO, 2009). For example, the structural reforms in Belgium, Italy and Denmark were greatly encouraged by state financial aid whereby loans were given to farmers to buy neighbouring farms when they came up for sale (FAO, 2009). The success of agriculture in the United States and Japan was in no small measure due to the establishment of good credit institutions for the use of farmers (USAID, 2006). The Israeli Settlements owe their success in part to the elaborate credit arrangements by the Jewish National Fund and Joint Stock Bank (Al-Hassan, 2000).

Thus, traditionally, financial capital for investment in agribusiness in Africa comes from two potential sources: formal and informal markets with the informal sources, according to studies (CARE, 2001; FAO, 2007) constituting the dominant sources of credit for agribusiness. In sum, the informal agribusiness financial markets have the advantage of being quick, more personal, flexible and informal. But reliance on them could exert adverse effects on agribusiness resource-use efficiency. Also, the high and exploitative interest rates charged, this category of lenders may enjoy obligatory patronage at uncompetitive prices when the entrepreneurs sell their products (FAO, 2010).

Indeed, the formal financial markets, such as the commercial banks, agricultural banks, micro-finance institutions have especially been instituted to save small agribusiness from the exploitation inherent in the informal financial markets. However, there is growing reluctance of the formal financial markets to lend funds to small-scale agribusiness entrepreneurs due to high default rate. Even larger and, at times, agribusiness-focused commercial banks have shied away from agribusiness lending due to their own experience with poor repayment of agribusiness loans. Since the banks are reluctant to lend for small-scale agribusinesses due to the unacceptable default rate, the “Warrantage Credit System” or inventory credit system seems to be the panacea.

Warrantage is a credit technique, adapted to the needs of finance and capacity of guarantees of certain socio-professional category (agricultural producers, etc), guaranteed by a stock of agricultural products, “warrantables” (i.e., products that could be stored and that are not too bulky and that are likely to increase in value) stored and pledged in an appropriate and secure place (Aboubacar, 2007). It involves the use of a pair of padlocks - one held by a bank and the other by a farmer group requesting for loan. In this way security is guaranteed for both parties concerned (Plates 6.1 and 6.2).





**Plate 6.1:** Abanker with some members of awarrantage association pad-locking a store for safety (Source: J. G. Akpoko)



**Plate 6.2:** Properly secured store with pair of padlocks (Source: J. G. Akpoko)



The success of some microenterprise credit programs led to bold experiments with the warrantage. These experiments resulted in the emergence of micro-finance institution, i.e specialized agribusiness financial system that serve the poor mainly because:

- i. farmers yields remain very low (below the potential yields);
- ii. farmers sell at very low prices due to urge at harvest time;
- iii. farmers get generally poor market prices, hence low income;
- iv. due to low income, they have insufficient money to buy inputs;
- v. farmers need money to solve other needs (family/social);
- vi. farmers need credit facilities.

To meet all their needs, the banks have money for disbursement as credit to farmers, but will usually request for collateral as security before granting loans to farmers. Produce stored in warehouses can be used as collateral to obtain bank loans, but farmers usually hold on to their produce until the lean period- when food stocks start to run low and prices climb high. The advantages of this include:

- i. credit received could be used to purchase essential inputs for the next planting;
- i. establishing an input store is part of the warrantage system and this helps farmers to overcome problems of inputs availability within their communities;
- ii. in the short and long run, farmers become business-oriented, extension agents and a self-sustaining system is built;
- iii. buying inputs in a consolidated order by all the farmer groups enables cooperative members to purchase inputs at a lower price and of good quality at the beginning of the production cycle;
- iv. the establishment of an inventory credit scheme also allows households to smoothen their consumption patterns, thus reducing consumption risk;
- v. money received could be used to diversify house hold economy, by investing in small scale income generating activities like stocking of agro- chemicals, market gardening, extraction of groundnut and peanut oil and salts, meat selling, poultry, animal fattening, juice and yoghurt making, gathered products(gum Arabic, palms, etc), artisanal activities, etc.

Thus, many farmers may repay the loans even before selling their produce (Plates 6.3 and 6.4).



**Plate 6.3:** Sheep fattening with credit received under the warrantage program (Source: J. G. Akpoko)



**Plate 6.4:** Tomato trading with credit received under the warrantage program

### **Benefits to resource-poor entrepreneurs**

Apart from the aforementioned advantages, the system provides:

- i. access to financial means to meet immediate priority social needs at harvest time, income generating and purchase of agricultural inputs;
- ii. collective sale enhances bargaining power;
- iii. household food security is enhanced.

### **Benefits to the financial agencies**

- i. minimizes risk on bank loan;
- ii. offers high liquidity requirement for bank loan;
- iii. there is accrued interest on the loan.

### **When could the produce be stored ?**

The produce should be stored at harvest time (October–December) when prices are very low and yet farmers need cash. The stored produce should be properly labeled for purpose of identification (Plate 6.5).



**Plate 6.5:** A participant standing by his properly labeled stored product  
(Source: I. Y. Amapu)

### **What amount to take as loan under the warrantage credit system?**

Farmers should apply for a loan amount which is slightly lower than the value of the stock stored at harvest time (October– December).

### **When should farmers sell the produce?**

Farmers should be monitoring market prices on a routine basis, and once an appreciable increase in prices is observed (April– June), the produce could be sold.

### **Criteria for obtaining bank loan under the system**

Farmers are expected to fulfill all the criteria they negotiated with the banks. Some of these criteria may include the provision of collateral.

### **When should the borrower decide on the appropriate crops to grow?**

During the beginning of the cropping season, members of the group meet to identify the type of crops and estimated quantity to store for loan in the warehouse at harvest time.

### Collective Sale

Members and the Bank negotiate a price for the whole stock with a dealer (Plate6.6).



**Plate 6.6:** Collective sale of produce under the warrantage program  
(Source: I. Y. Amapu)

### Conditions for operating a successful warrantage credit system

The following conditions are necessary in order to operate a successful warrantage credit system:

- i. existence of well-organized farmer groups;
- ii. existence of a Good Warehouse(safe, strong doors, windows, good floors and walls, etc)which could create confidence and attract the banks to commit;
- iii. their funds or give the loans;
- iv. identification of produce with high storage ability and potential to appreciate in price over-time;
- v. financial institutions should be re-orientated to see the system as a joint venture between them and the farmers;
- vi. start with available facilities at a site;

- vii. start with few sites and few farmers;
- viii. ensure there are potentials for economy diversification;
- ix. take loan up to only 80 percent of stored produce;
- x. exercise caution on the amount each farmer can take;
- xi. monitor the market prices very closely and sell once some reasonable increases in price is noticed;
- xii. crop(s) must be properly dried before storage;
- xiii. crop (s) must be properly treated and bagged;
- xiv. the group must fulfill all other banks' requirements;
- xv. the ware house must be large enough to contain all the stocks and allow for free movement by inspectors;
- xvi. more importantly, the group must be viable;
- xvii. negotiate the interest rate making sure farmers are not at disadvantaged position.

### Case Studies on Agro-inputs and Credit Services

Four case studies on agro-inputs and credit services input are presented below in boxes 6.1 to 6.4:

**Box 6.1:** Case studies from some African countries on agricultural inputs voucher-based subsidy program

The use of a voucher-based fertilizer subsidy program by smallholder farmers has been experimented by many African countries including Malawi, Ghana, Kenya, Tanzania, Zambia and Nigeria fertilizer subsidies programs. The promotion of voucher use stems from the challenges associated with wastage and subsidy diversion inherent in the government's agricultural inputs procurement and distribution system. The overall objective is to facilitate farmers' access to procure fertilizers with some percent subsidy from private dealers. It also aims to demonstrate the potential for an efficient private sector management system for smallholder's agro-input dealership.

In theory, input vouchers have a number of advantages over direct government in-kind provision of subsidized fertilizer to farmers which include the followings:

- i) vouchers can help build the private-sector distribution network by requiring that farmers take their vouchers to private input dealers to exchange for fertilizer;

- ii) voucher programs can build exit strategies by reducing the value of the voucher over time or converting it to a crop production credit that is repaid at harvest;
- iii) voucher programs provide an opportunity to train farmers and input suppliers on efficient, profitable use of fertilizer, and iv) in emergency response situations, vouchers could replace food aid as medium-term support to those affected. Thus, vouchers have been used in Malawi, Ghana, Kenya, Tanzania, Zambia and Nigeria fertilizer programs since in 2000 with immense impacts on the targeted beneficiaries.

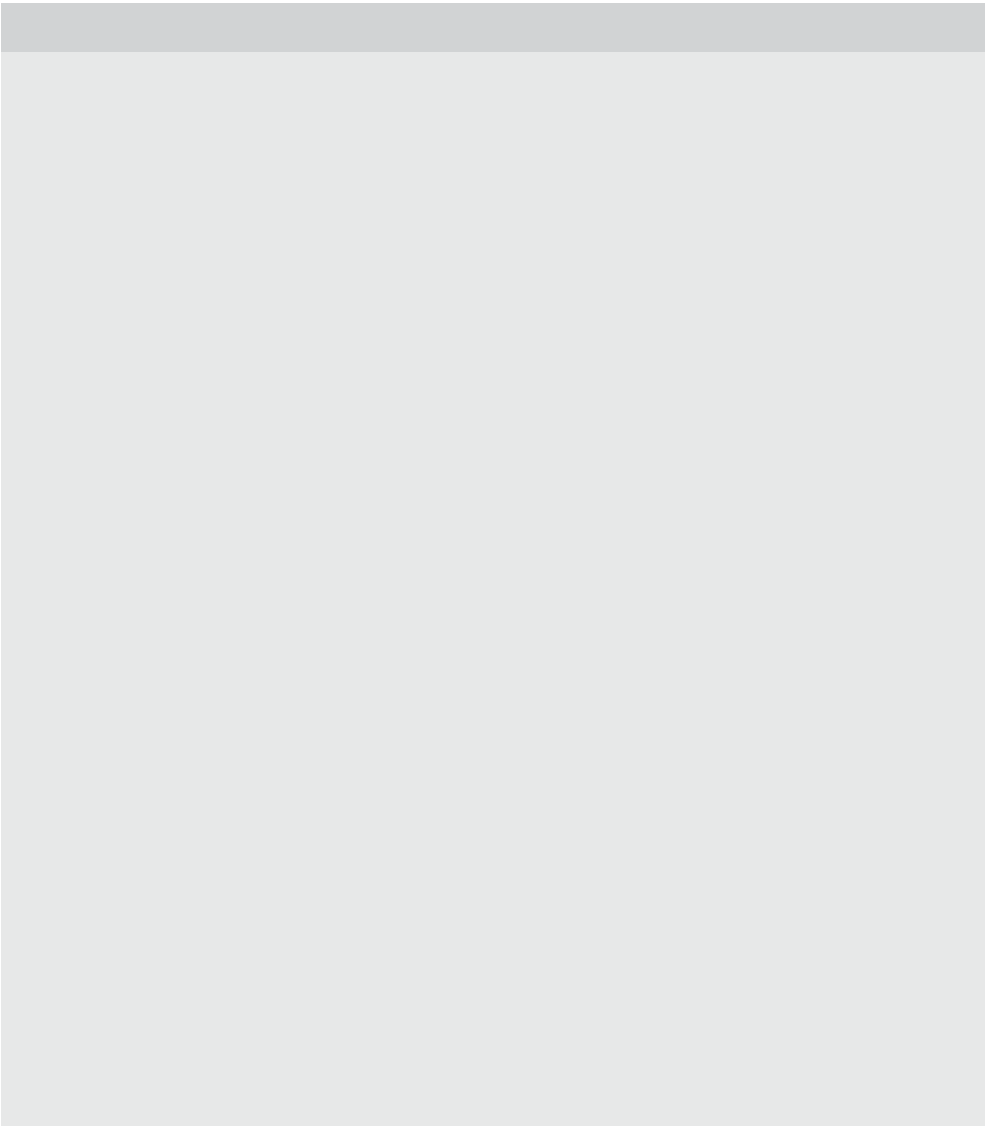
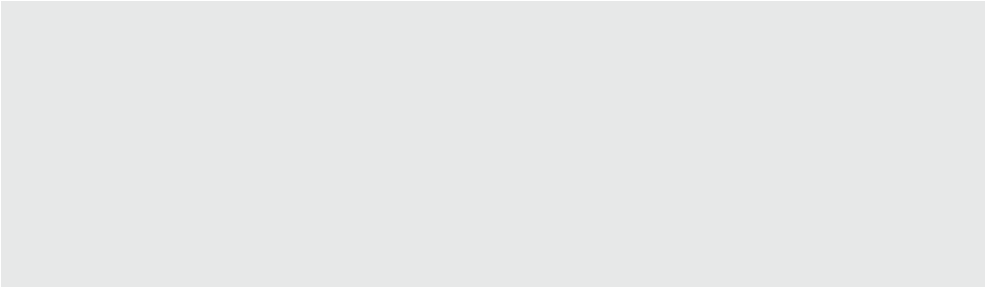
**Box 6.2:** Case Study from Nigeria on agro-dealership

The Institute for Agricultural Research (IAR) of Ahmadu Bello University, Zaria, Nigeria implemented a Soil Health Project with one of its major components dealing with agro-chemicals dealership. Under the agro-chemicals dealership component, the project encouraged the establishment of a stockists network, which made inputs required for crop production readily available in local communities and create an inputs business environment at the village level.

Methodologically, potential local farmers businesses were selected to become input stockists and because most of the local stockists were new in agro-dealership as a business enterprise, training which was tailor-made was provided at the onset. These training focused on topics like fundamental knowledge about fertilizer and its use, stock-keeping, financing of agribusiness, advertising and credit use. It was also thought that the small emerging entrepreneurs needed training to improve their knowledge of marketing agricultural inputs, to enhance their analytical thinking, planning, and decision-making skills and to meet the challenges of open and competitive markets. The criteria for selecting participants included:

- i) candidate should be a practicing farmer resident in the village;
- ii) should have good reputation;
- iii) be interested in agro-dealership; and
- iv) should be prepared to learn simple techniques for analyzing investments in agro-chemicals business.

Lack of capital in the form of cash was a major impediment among the stockists to develop the trade. Consequently, a short-term credit-guarantee facility was established. Experience has shown that lack of credit prevents distributors from maintaining stocks. Consequently, the Project also provided the distributors with extra financial capacity to maintain stocks of essential peak periods of demand. The credit guarantee scheme allowed distributors to supply goods to the stockists. Under the credit scheme, stockists were required to make down payment of 30 percent of the value of each consignment of goods collected thereby reduced the distributors' financial risk. Stockists will complete payment of the remaining 70 percent after selling the goods to farmers. The project was not liable for any credit that stockists extended to farmers.



Impact assessment of the warrantage credit system in Nigeria shows that it helped to develop the financial capacity of a stockists network and many farmers purchased their agricultural inputs during the off season (Plates 6.7 and 6.8).



**Plate 6.7:** Farmers carrying their fertilizer allocations in a loaded lorry under the agro-dealership program in Nigeria (Source: I. Y. Amapu).



**Plate 6.8:** Children joyfully carry fertilizer purchased by a farmer for the next cropping season in Nigeria under the agro-dealership program (Source: I. Y. Amapu).



**Box 6.3:** Case Study on Bio-pesticides in Africa

The market potential of bio-pesticides is high, in particular due to the increasing trade in horticultural products from African countries into EU and NAFTA regions. Although there is paucity of scientific and evidence-based data on African plants and micro-organisms for their pesticidal potential, up-take of this research and commercialization of these preparations have been very slow. What is currently common Africa, is the home-made or do-it-yourself preparations from plants which is used, particularly for the protection of field crops and stored harvest from insect, mite and other pests destructions. Plant powders/ashes, leaf/root/shoot decoctions, whole fresh/dried leaves, seed/kernel oils, etc. are sprayed on field crops, while whole fresh or dried leaves or powdered plants are mixed with the grain in storage. In many parts of Africa, such practices are part of the local indigenous or traditional knowledge passed down through the generations. From such indigenous and traditional knowledge has developed two of the major groups of synthetic pesticides widely used today: the carbamates and pyrethroids, which are modeled on biologically active compounds in the calabar bean (*Physostigma venenosum*) and the chrysanthemum flower (*Chrysanthemum cinerariaefolium*).

In developed countries, market for local plant pesticides runs into billions of dollars globally. One of the best studied and most widely known tree plant that has been used for its pesticidal properties in Africa is the neem (*Azadirachta indica*) from the Meliaceae family. In 1993, the International Centre for Insect Physiology and Ecology (ICIPE), Kenya together with the German Development Agency (GTZ), and a Kenyan private investor developed the first commercial neem pesticides, Neemros® and Neemroc®, which have become very popular. Other neem products developed and marketed by ICIPE include oils for the preparation of soaps, skin creams and shampoos.

The Southern African Pesticidal Plants Project, commissioned in December 2009, was followed by the African Dry land Alliance for Pesticidal Plant Technologies project, which worked on a number of African plants with the aim of optimizing and promoting the use of local plants for food security and poverty alleviation in Africa.

**Box 6.4:** Case studies on warrantage credit experiences from five African countries

The warrantage credit system was first initiated in 2003 in Burkina Faso with 8 farmer organizations. In 2004, the number of associations participating in the warrantage credit system had increased to 250 in the targeted areas. Participants for the most part, stored millet, sorghum and groundnuts, and received loans amounting to 1,449,000 FCFA. The loan received was used to diversify their household economy, by investing in small-scale income generating activities like stocking of agro-chemicals, market gardening, animal fattening, etc. The loan also assisted them to adopt recommended agricultural practices.

In Mali, the system commenced in the 2002/2003 cropping season. The farmers put in stock large quantities of millet, sorghum and paddy rice and were granted 10,233,655 FCFA in 2003/2003 and 16,351,100 FCFA in 2003/2004 cropping seasons. The farmers also used the credit to undertake income-generating activities like sheep fattening, groundnut oil extraction by the women etc. Their total net benefits were 2,709,725 FCFA in the 2003/2004 season alone. The profits realized under the warrantage scheme were also

used to purchase fertilizers and improved seed varieties for the next cropping season.

In Niger Republic, 40 farmer associations were involved in the warrantage credit scheme in 2002/2003 and 2003/2004 cropping seasons. The farmers used millet, paddy rice and peanuts as collateral. A number of other crops including horticulture products such as onions, garlic, dried tomatoes and dried pepper were also used. They initiated income generating activities such as groundnut oil extraction, vegetable gardening, sheep fattening. They also used art of the money to purchase inputs. In the 2003/2004 cropping season, they obtained about 11,500,000FCFA as loan under the warrantage credit system.

In Nigeria, the credit system enabled the smallholder farmers to buy essential inputs for the next planting season and also allowed them to hold on to their produce until the lean season. A study conducted also found that some of the borrowers used part of the credit to finance other income-generating activities; this enabled them repay the loans even before selling their stored produce.

In Ghana, on average, in a period of 5 years, farmers participating in the program increased their net income by 36 percent over what they would have earned had they sold their maize immediately after the harvest. Perhaps more significantly, the scheme had achieved a 100 percent repayment rates across the participating associations.

## Conclusion

There are several agribusiness opportunities in agricultural inputs and services in Africa. For example, the potential for seed market in Africa is unquantifiable; the demand is around 430,000 tons for maize seed, with a value of at least US\$500million and only 100,000 tons are currently being produced.

Likewise, Africa cannot meet its agricultural growth targets without increasing fertilizer consumption from its current 1.5 million nutrient tons annually to at least 5.5 million tons by 2020. That market potential is estimated to be worth more than US\$6 billion. Many formal financial markets, such as the commercial banks, agricultural banks, micro-finance institutions have also specifically been instituted by government to provide credit facilities to entrepreneurs at more favourable terms. In a nutshell, the agricultural inputs and financial services are lucrative agribusiness ventures in Africa, which emerging entrepreneurs can exploit with maximum returns.

### Questions for Discussion

1. What are the constraints to inputs use by smallholder farmers in Africa?
2. Describe the major challenges of the agro-inputs sector in Africa.
3. What is the level of private sector involvement in agro-dealership in Africa?
4. Identify the training needs in agribusiness inputs.
5. Describe the criteria for selecting inputs stockiest.
6. What are the disadvantages of the voucher-based credit system?
7. What would you do to promote the voucher-based subsidy program in your country?
8. What are the conditions for operating a successful warrantage credit system?
9. Appraise the benefits of the “warrantage or inventory credit” system as agribusiness input to resource-poor entrepreneurs and financial agencies.
10. Why are Africans unable to capitalize on the business opportunities provided by biopesticides?
11. Recommend ways in which biopesticides product development and marketing can be promoted in Africa.
12. Design at least two agricultural input business models for your country.

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## Section 1 Conclusion

This section aims to introduce the reader to different aspects of viable agribusiness case studies of products and services in Africa with current efforts at mitigating some of the production challenges. The section contends that addressing the current challenges requires above all a meticulous and detailed economic analysis of the different situations within which the firms are expected to operate.

Traditionally in Africa, many farm households depend largely on the sale of livestock as a source of stable income and, are therefore, highly concerned about the available fodder supply. Traditionally, cattle, sheep and goat raisers have relied on grasslands containing indigenous fodder trees and shrubs as animal feed, but because of changing environmental and social conditions, these practices are no longer appropriate. Therefore, almost all households face a shortage of feeds especially in the dry season resulting in significant losses each year. The obvious management response is to buy supplementary feeds, such as cottonseed cake, but these are scarce and expensive. Modern interventions are, therefore, required to off-set this problem. One such intervention is crop and fodder production to provide the high protein animal feed supplement during period of needs. Crops and fodder trees play an important role in bridging the gap in animal feeds supply during the critical dry months. In addition, fodder from trees and shrubs have a high nutrient value that supplements the, often poor, quality of crop residues, the normal feed during the dry months.

It has been estimated that at least 80 percent of Africa's livestock products are not processed. This is particularly so for the cattle milk. This milk is consumed on-farm, sold or traded to neighbors, or cheaply sold to informal middlemen ("hawkers"), who transport the milk to nearby towns for resale, untested and unprocessed. This market structure presents a tremendous business opportunity. Much of the urban consuming public is also willing to pay a premium for hygienic, high-quality, and conveniently packaged milk and other dairy products. A dependable and discerning market that is willing to pay for quality dairy products is therefore available.

Increased population, per capita income and opportunities have also expanded the demand for livestock-related products and services, such as medications, feed supplements, as well as for a wide range of general consumer goods and services. As human nutrition is improving - the consumption of fresh produce, dairy, meat, and poultry also increases.

The relevance of enterprises in horticulture, forest and non-timber products in the livelihood sustenance of human beings cannot be overemphasized. These enterprises have several potentials and hold great promise as tools to unfold the window to job creation and income generation in Africa.

Agro-chemical consumption is generally low in Africa. For example, the average consumption of fertilizer is estimated to be about 9 kg/ha compared to 40 kg/ha

for Latin America and 100 kg/ha for the European Union and United States of America. Yet, the declining soil fertility of farmers' fields in most African regions is well documented. These reports cite five major causes of this decline: mining of soil nutrients, water losses by run-off and evaporation, loss of soil cover by *in situ* destruction of vegetation and by removal of residues, accelerated loss of soil organic matter, and restricted rooting from soil compaction.

In order to mitigate the declining soil fertility, more appropriate soil management techniques are recommended including the use of artificial fertilizers and other agro-chemicals. The use of artificial fertilizers to further improve yields in a depleted soil is a well known and successful technology to lift smallholders out of their subsistence livelihood. Nevertheless, the network of wholesalers and retail input dealers is thin on the ground: many farmers have to travel a long distance to the nearest dealers, then have to carry heavy bags of chemicals back home. Agro-inputs supplies often arrive too late to be useful, and some are of the wrong type for a particular crop or have been adulterated, so are ineffective. Many input dealers are poorly informed about what they sell, and they therefore cannot advise farmers appropriately. Farmers end up applying the wrong chemicals at the wrong time, and harvest low yields as a consequence. This leads to a decrease in their trust in the potential of the inputs and in the people who sell them.

Most African farmers keep the seed from the last harvest and sow it in the following season. That has advantages: local varieties are hardy and adapted, and farmers do not have to find money to buy seed. But local varieties tend to produce low yields. With fertilizer and manure, higher-yielding hybrid varieties can produce a lot more. Based on the prospects for agricultural modernization and increase use of recommended practices such as artificial fertilizers, agro-chemicals, improved seed, feed and fodder, and credit, investment in agricultural products and services in Africa, therefore, has potential for profits which is the determinant for the marketers willingness to take risks.

Finally, in order to overcome overwhelmingly the challenges inherent in complete business environments, Africa needs well trained personnel with profound knowledge of case studies that are related to Africa. Evidently, there are bachelors of sciences and postgraduate degree programmes in African Universities that offer courses in agribusiness which have already successfully graduated students. It is also obvious that the graduates of these Universities have made substantial contributions to the development of the African agribusiness sector. However, it has become apparent now that these programmes have not adequately discussed the specific case studies relevant to Africa agribusiness products and services. The section has, therefore, vividly bridge this gap.





# Section 2

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## Agribusiness Marketing



## Section 2 Introduction

Agribusiness marketing is increasingly becoming important as Africa takes its position in world trade. With liberalization taking place rapidly in many economies and trade opening up, agribusiness managers need to carefully combine marketing mix elements to derive maximum benefits from their ventures as they continuously adapt to the changing business environment through appropriate strategies. Marketing is an important function because it is the only business activity that brings revenues to meet profit targets. In market driven enterprises, it is the function that guides operations of other business sections. Therefore, understanding concepts in this section is very important.

This section is comprised of two chapters, namely, chapters 7 and 8. **Chapter 7** introduces students and learners in general to the marketing chain concept. It defines the agribusiness marketing concept, outlines factors responsible for evolution of agribusiness marketing, describes approaches for analyzing agribusiness marketing, discusses the four marketing mix elements and basic marketing channels, and lastly, provides some tools for evaluating marketing processes. It is hoped that eventually, students should gather basic skills of analyzing agribusiness marketing, identifying business opportunities, deriving benefits, and consolidating a business activity within an agribusiness marketing chain. **Chapter 8** is on marketing strategies commonly used by agribusinesses. It outlines strategies for increasing sales to attain sustainable competitive advantage in both short run and long run horizons. Emphasis is placed on product differentiation, product positioning, pricing, communication and distribution in response to the prevailing business environment. It is hoped that students will acquire basic skills of developing and implementing such strategies.



## Chapter 7

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### FUNDAMENTALS OF AGRIBUSINESS MARKETING

Syampaku E. M.<sup>1</sup> and G. Nimino<sup>2</sup>

#### Summary

This chapter introduces students to basic elements of marketing as an essential activity of an agribusiness venture. It is divided into seven main sections. The first section introduces the subject and outlines the importance of marketing. This is followed by the purpose and main participants in agribusiness marketing. The third section focuses on the factors responsible for the evolution of agribusiness marketing chains while the fourth section gives approaches of analysing marketing chains, detailing information on marketing orientation, institutional linkages and interest group interactions. The fifth section addresses the marketing mix, giving details on price, commodity, communication and positioning whereas the sixth section provides basic examples of commodity marketing chains. The last section gives information on evaluating the marketing process. A case study and questions for discussion have been provided at the end of the chapter.

#### *Fondements du marketing en Agrobusiness*

#### *Résumé*

*Ce chapitre introduit les étudiants aux éléments de base de la mise à marché dans le commerce agricole et présente la mise à marché comme une activité essentielle de tout commerce agricole pour l'atteinte des objectifs de profit. Il est divisé en sept principales sections. La première fait état de l'introduction qui souligne l'importance de la mise à marché. Les objectifs et les principaux acteurs sont mis en exergue dans la deuxième section. Les facteurs responsables de l'évolution de la chaîne des marchés dans le commerce agricole sont fournis dans la troisième section. La quatrième section donne des approches d'analyse de la chaîne de la mise à marché détaillant les informations sur l'orientation de la mise à marché, les liens institutionnels et les interactions du groupe d'intérêt. La cinquième section s'attaque aux éléments combinés de la mise à marché en donnant les détails sur le prix, les produits de base, la communication et le positionnement tandis que la sixième section donne des exemples de base de chaînes de la mise à marché. Enfin, la septième section donne des informations sur l'évaluation du processus de mise à marché. Une étude de cas et des questions de discussion ont été fournies à la fin du chapitre.*

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## **Introduction**

Marketing is an especially important management function for any agribusiness because it is undertaken to bring in revenues, cover costs and eventually generate profits intended to justify the business venture. It is driven by four elements, commonly referred to as the marketing mix. They are:

Product;

Price;

Communication; and

Marketing channel.

Agribusiness managers need to identify target markets, select forms of products to supply, adopt prices to use, and position the products with appropriate communication in the target markets in order to make sales within limited time frames. Poor marketing success is attributed to inappropriate combination of these four marketing elements. Agribusiness marketing invests heavily in producing appropriate products through appropriate farming techniques, storage and processing. A marketing chain then evolves and attracts various participants who justify their existence by adding value to products. Pricing is often tied to market power of key participants. Interest groups jostle for power to swing prices in their favour. Value addition then remains an important weapon for participants in the marketing chain. Benefits accruing to participants at each stage of the marketing chain depend on how customers appreciate the value added to the commodity at that stage of marketing, and the power wielded by participants to swing the price and product quality in their favour. Participants may be differentiated into those who drive the marketing chain and those who facilitate it. Therefore, marketing is shaped by combinations of marketing elements - marketing mix - and how they are reorganised after evaluation processes.

## **Learning Objectives**

The chapter aims to equip students with knowledge on:

The concept of agribusiness marketing;

Factors responsible for agribusiness marketing;

Approaches for analysing agribusiness marketing, main participants and interest groups involved; and

How they wield market power, types of marketing mix elements and basic marketing process evaluation.

## **Learning Outcomes**

After studying this chapter, students should be able to:

- Explain the concept of agribusiness marketing, its purpose and factors shaping its existence;
- Describe the key business activities and players in the marketing chains;
- Explain approaches for analysing agribusiness marketing chains;
- Describe individual elements of the marketing mix;
- Give examples of some common marketing chains; and
- Carryout some basic marketing evaluation processes.

Students should have basic skills of analysing agribusiness marketing, identifying business opportunities, deriving benefits, and consolidating a business activity within an agribusiness marketing chain.

## **The Concept of Agribusiness Marketing**

Agribusiness products pass through a chain of business activities as they move from points of initial production on farms to final consumption in households. Core business activities that have evolved are production, aggregation, storage, packaging, processing and manufacturing, wholesaling, distribution and retailing. Major businesses have evolved around these activities to become large players in many African economies. Different participants have also been attracted to add value to commodities, regulate business activities and facilitate the commodity exchange. Performance of business activities at each stage forms part of agribusiness marketing, it is viewed differently by participants of particular business activities. Farmers see agribusiness marketing as delivering produce to buyers offering the best price. Traders may view it as an opportunity to gain from limitations of farmers to deliver farm produce to large scale buyers. Aggregators may see marketing as bulking products to gain from economies of scale and gaining the best price from among the various target markets. Storage warehouses may see marketing as keeping the products for lean periods to gain from relative scarcity. Processors and manufacturers may view it as transforming products to gain from the new value and uniqueness at competitive prices. Packers may view it as putting commodities in more convenient volumes and attractive containers to gain from increased demand and commodity appeal to customers. Distributors may see marketing as increasing commodity access to gain from increased numbers of purchasers. Retailers may still view it as supplying commodities in more convenient volumes to gain from direct interaction with final consumers. Consumers may see it as accessing best quality products at low price.



The definition of agribusiness marketing differs among authors. Downey and Erickson (1987), define it as the “study of flow of products from the producer through intermediaries to consumers”. This definition considers marketing as a study rather than a series of agribusiness activities. Kohls and Uhl (2002) add the business aspect by defining it as “the performance of all business activities involved in the flow of agribusiness products and services from the point of initial Agribusiness production until they are in the hands of consumers”. These two definitions point out that agribusiness marketing links producers to consumers (Figure 7.1) through a set of business activities.



**Figure 7.1:** Marketing linkage between producers and consumers

Agribusinesses exist by creating any of the four types of value addition appreciated by customers within the marketing chain. The first type is form value addition, and it is created by changing the form of the product to increase its appreciation to consumers. Producers add form value by transforming inputs into outputs. Processors add form value by changing the primary product into a secondary product with new features and convenience appreciated by consumers. Aggregators and packers also add form value by ensuring that consumers access commodities in right quantities. The price changes with the amount of form value addition that has taken place. Place or position value addition is the second type, and it is created by increasing commodity access to consumers through distribution. Consumers will be willing to pay higher prices when commodities are brought near compared to when the same commodities are far away. Thus, prices at respective selling outlets need to reflect distribution costs. The third type of value addition is time value of the commodity, and it is created by delaying to consume the product in favour of consuming it in periods of relative scarcity. It is performed either because farm production is seasonal while consumption is required all year round, or consumption is required for a period longer than the normal life span of the product. This creates another generation of agribusinesses that add value through storage and preservation. Prices need to reflect storage and preservation costs. The fourth and last type is possession value addition which is created by ensuring transfer of commodity ownership. A new generation of agribusinesses has evolved to perform this activity. Lending institutions are now common, and they provide credit to facilitate exchange of commodity ownership. Moreover, commodity exchange and risk management businesses have also evolved to guarantee transfer of ownership.

## **Justification for Agribusiness Marketing**

The need for marketing in many African countries is directly related to the features of agribusiness products. Agribusiness marketing exists because farm production, value addition and consumption take place in different geographical locations. Production takes place in certain specialised regions with comparative advantage whereas consumption is countrywide. Moreover, production takes place in rural or peri-urban areas, and processing in urban areas. This implies that production is dispersed, processing centralised and consumption dispersed again. This then calls for the existence of the distribution businesses between producers and processors, and between processors and consumers.

Farm production is dominated by small-holder farmers with limited volumes which do not make business sense. However, processing requires much larger volumes to justify investments whereas consumption is required in small quantities. This requires aggregation between producers and processors, and warehousing and dispersion between processors and consumers. Aggregation, transit storage and distribution become critical businesses in this respect. The small nature of these farms leads to low marketing volumes which usually make breaking even and profit generation difficult. This feature also reduces the power of farmers in negotiating for favourable prices in input and output markets. Aggregation of outputs and inputs through farmer groups, such as cooperatives, becomes an attractive type of agribusiness to pursue.

Farm production is also determined by seasonal variations. In some cases, production is done in one season and consumption in another. This creates the need for long term storage and quality maintenance. In addition to this problem, products have short life spans because of varying degrees of perishability. This creates need for innovative businesses in specialised storage management. It also creates opportunity for development of selling skills for quick disposal of commodities.

Consumption patterns are rapidly changing with globalisation and technological development. In many southern African countries, consumption of fast foods is on the rise. Time saving and convenience are receiving greater attention. This entails investing in processing, food preparation and packaging.

The general need to develop African economies is increasingly becoming an important factor. Agribusiness products are being recognised as offering great potential for development through their many vertical linkages. Potential for domestic employment creation is much higher than in other economy sectors. The sector is also being recognised as having potential for stimulating development of non-agribusiness sectors. Transforming the agribusiness sectors through value addition creates a new frontier for raising exports and improving the balance of trade for many African countries. The sector is also being recognised as one the vehicles for distributing incomes through rural industrialisation. Lastly, the agribusiness sector is highly linked to political stability. Volatile food prices are common in some African countries (Common Market Eastern and Southern

Africa (COMESA), 2010) and this can be a major source of political instability in some countries. The need for price stability, food security, equitable income distribution and foreign exchange earning has led to creation of marketing institutions performing various roles in many economies.

### **Approaches to Analysing Agribusiness Marketing Chains**

Several approaches have been developed over time for analysis of agribusiness marketing chains. Common ones are the functional, institutional (sub-systems), competition, orientation and contingency approaches. A few of these approaches will be discussed in subsequent sections.

#### **Marketing Orientation Approach**

This approach views agribusiness marketing as positioning products in the market to successfully reach customers in the target segment. Agribusinesses guide their marketing activities by choosing from among five orientations, namely, production, product, selling, marketing and societal orientations.

With respect to production orientation agribusinesses, assume that customers buy products because they are easily accessible. Hence, the agribusinesses concentrate on mass production and wide distribution to make products accessible to majority of target customers at low cost. Use of mobile sales outlets is common. It is adopted by agribusinesses that perceive demand as outstripping supply.

The product orientation is adopted when agribusinesses perceive that customers buy products which appeal to them. Under this orientation, agribusinesses concentrate on improving quality and adding features that maintain attractiveness and demand for long periods. It is common in market segments with high competition and rapidly changing demand trends, e.g. baby food markets.

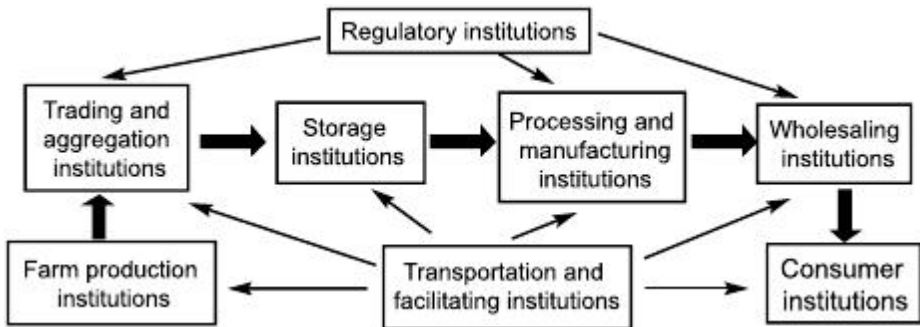
The selling orientation is adopted because customers are perceived to buy products only if persuaded. Agribusinesses guide marketing programmes by adopting aggressive selling and promotion efforts, especially where supply outstrips demand and the market is unaware of the product. Use of mobile sales representatives is common. Street food vendors in cities and towns also use this approach.

The marketing orientation is adopted because agribusinesses perceive that supplying products to target market segments should be preceded by obtaining information on needs and wants of customers and the form in which the product must be supplied. Agribusinesses invest in market research and product development. They produce prototypes and test them before they go into mass production. It is commonly adopted when the market is unknown and when customers are sensitive to products they consume.

Lastly, the societal orientation is adopted when agribusinesses recognise that products need to be produced and distributed to consumers in a responsible, accountable and ethical manner. Agribusinesses invest heavily in commodities that meet the health and nutritional needs of consumers and environmental protection. They also take responsibility for negative consequences associated with consumption of products by maintaining some amount of ownership for products in the hands of consumers. Display of information on expiry dates, product safety or hazard, type of product whether “green” or not, genetic makeup whether genetically modified or not, and other features is becoming mandatory with time. This is essential to meet the consumer’s right to information. Central and local government authorities have units that enforce compliance to food standards among agribusinesses.

### Institutional Approach

The institutional approach may also be viewed as a systemic approach. It views marketing chains as systems comprising groups of agribusiness and non-business institutions or actors performing specialised activities to fulfil the marketing processes in a continuous manner. It classifies institutions into 8 main groups, namely, farm production, trading and aggregation, storage, processing and manufacturing, wholesaling, retailing, consumer, facilitating and regulatory institutions, as shown in Figure 7.2. Participants in each institution have interests which they seek to satisfy.



**Figure 7.2:** Groups of institutions in agribusiness marketing chains

Farm production institutions comprise businesses that produce and supply primary farm products such as maize, rice, cattle, milk, fish and such similar products. They include commercial farms, fisheries, apiaries, agro-forests, and other similar businesses. In many African countries, small-holder farmers produce outside commercial and formal systems, and as individuals are not recognised as businesses. These institutions provide form value by producing new products which other players convert into different products down the marketing chain. They raise prices to reflect the amount of value they have added. Generally, farmers do not manage to collectively regulate amounts of commodities produced and supplied.

Trading and aggregation institutions arise due to small nature of farm production relative to storage and processing requirements especially when small-holder farmers dominate farm production. They buy farm produce and bulk it in transit storage facilities at collection centres, and supply it to other participants in the value chain at higher prices depending on the amount of value added by bulking and volumes acquired. Aggregation centres need to be certified. Formal and informal traders are the major participants in this category.

Storage institutions are registered and certified to keep products for long periods. They procure products from aggregators, add value by storing them over long periods, and supply them to other participants at the right time in required quantities. Selling prices need to reflect the time value by taking into account storage costs and quality changes. These institutions differ in activities performed depending on type of business handled. Stored products are can also be used as collateral for securing financing. These institutions may influence prices by hoarding, depending on their market power.

Processors and manufacturers add value by transforming primary products into secondary and tertiary products to justify their role in the marketing chain. Secondary products are products that are inputs into tertiary products. Important institutions are millers, ginners, brewers, extractors, and other similar institutions. These institutions are interested in buying products and services of best quality from either aggregation or storage institutions at low cost prices so that they can add value and sell at competitive prices. They also add a margin to the price to reflect the amount of value added by transforming the product.

Wholesales are institutions that buy products from processors and manufacturers in bulk for onward supply to retailers. Some wholesalers take title to products whereas others simply act as commission agents. They add value by taking products to centres where retailers can easily access them.

Retailers buy bulk products from wholesalers and resell them to final consumers in smaller volumes. They add value by repackaging products into smaller quantities relevant to consumers and taking them as close as possible to them. The final price reflects all the costs incurred in the value chain.

Final consumers comprise the general public, farms, and other institutions, and they constitute the main reason for the existence of agribusiness marketing chains. Consumers buy products from retailers for final consumption. They are interested in high quality, service and convenience in products at low prices. They buy more when quantity, quality and convenience are high according to the law of demand. The need to satisfy them is the major preoccupation of various players in the marketing chain.

Facilitating institutions ensure the smooth flow of business activities along the marketing chain by providing services that enhance commodity exchange.

Important services include financing, information supply and risk bearing at a fee. Common institutions are banks, government departments, insurance companies, and brokers. Commodity prices need to reflect the cost attributed to these services.

Regulatory institutions set rules, procedures and standards of marketing, and ensure compliance of marketing practices to these set rules, standards and procedures. They also have units that interpret these rules, standards and procedures to market players. Important participants are central government departments and agencies (responsible for fisheries, veterinary, wildlife, bureau of standards, nutrition commission, health, and others), local councils, and international institutions like World Trade Organization. They make and enforce laws on standards, hygiene and ethics in the marketing system to protect consumers. Actors in this category of institutions impose levies to support administrative costs which have to be reflected in commodity prices.

### **Functional Approach to Agribusiness Marketing**

The functional approach views agribusiness marketing as performing various business roles that move products from points of production to points of consumption. It groups marketing roles into three categories, namely, physical, exchange and facilitating functions (Downey and Erickson, 1987; Schrimper, 2001).

#### **Physical Functions**

Physical functions define the changes in commodity flow during each process. They are performed by institutions and individuals involved in form, time and place value addition in the flow of commodities. Prices change depending on how appreciated the value addition provided is at each stage. Important functions are transportation, storage, processing, aggregation, distribution and retailing.

Transportation is movement of products or services from the point of production or storage to the point of consumption. The road transport is the most commonly used mode of transport for large volumes but it is quite expensive. Often poor roads in rural areas reduce the use of this mode of transport. In small-holder businesses, motor cycles, bicycles, ox-carts and head pottage are also used to transport small volume commodities over short market distances. The rail transport is used for bulk commodities and it is much cheaper than road transport. The air transport is an expensive mode of transport and it is most appropriate for transporting high value commodities over very long distances over a very short period. Water transport is most appropriate for bulk commodities but it is quite slow especially for international transactions. The choice of mode of transport used and cost involved depend on the bulkiness of the product, its value, time factor, distance, costs, and availability of alternatives. Prices reflect

the type of product sold. Prices change with distance covered, and prices need to reflect the cost of transportation (Schrimper, 2001). Spatial price-distance relationships are particularly important in agribusiness marketing to determine regional market boundaries, trade flow between surplus and deficit areas, and market integration.

Aggregation and storage are important functions that add time value of commodities. These functions are required because commodities need to be stored for lean periods or to extend their shelf life. Quality often deteriorates in storage due to disease and pest infestation, and enzymatic activity. However, it is important that quality is maintained through appropriate handling. Fresh commodities may require cold chains whereas grains may need fumigation and ventilation. Prices should reflect costs related to duration of storage and bulkiness of product stored.

Processing and manufacturing change the forms of products by transforming primary products into secondary and tertiary products. It adds value by changing the form of the product. Primary farm products are often in inappropriate forms for consumption. For example, maize grain needs to be transformed into maize meal, beef into sausage, and potato into chips for convenience to consumers.

### **Exchange Functions**

Exchange functions define the change in commodity ownership during each transaction. They constitute buying and selling, and are performed by institutions and individuals involved in buying and selling of commodities. Price discovery and determination are important aspects as buyers and sellers jostle to swing prices in their favour depending on their market power.

Buying is assuming ownership of a product or service by paying money or its equivalent to the original owner. A buyer gains in the process by lowering the price to his or her advantage. Buyers influence are able to lower prices when they are well organised and purchase commodities in large volumes. They also lower prices when cheaper alternative sources are available especially when products are uniform. Integrating business activities backwards into production can also increase their power to lower prices they buy the same product from other suppliers. Buyers also increase the need to negotiate for lower prices when they procure inferior commodities and project low profit margins from their sales. The evidence of their power is measured by the downward price movement during the negotiation processes.

Selling is transferring ownership of a product or service by receiving money or its equivalent during the transaction process. It can be direct between seller and buyer or indirect through the commodity exchange. Sellers are more powerful than buyers when they can negotiate for higher prices for their products. They gain this power when they are well group organised and have alternative markets.

Forward integration of business activities into distribution and retailing also increases their power to raise prices. Supplying products of high quality gives sellers power to negotiate for higher prices. Suppliers form associations and cooperatives to raise their negotiating power.

In exchange functions, prices are determined by interaction between buyers and sellers. Prices determined by negotiation move downwards only until buyer and seller agree on one figure. The upper price is set by the seller and the lower price by the buyer. The movement towards the agreed price may be higher or lower for each one of them depending on the negotiating power of the respective participant. Auctioning is the opposite of negotiation. In this case, the price goes up only since it is set by the financial position of the buyer. In many markets dominated by many participants, neither buyer nor seller dictates the price level. The interaction between buyers and seller reconciles the price.

### **Facilitating Functions**

Facilitating functions are activities that help the market system operate smoothly. They enable buyers, sellers, transporters and processors contribute to the marketing process with minimum risk or financing problems, and ensure that exchange functions occur smoothly. They include grading, standardisation, certification, financing, information flow, and risk bearing.

Although financing is provided by the buyer during the transaction process, due to seasonal nature of agribusiness products, borrowing is common especially in cash deficit periods. For example, a firm supplying fertilisers may borrow from banks to pay for storage costs in periods when the commodity is not demanded by farmers. So lending institutions must be available all the time to necessitate many transactions. In Zambia, microcredit institutions provide short term credit to enhance consumption, with monthly interest rates of around 3%.

Buyers and sellers need information on prices, quantities, elasticity of demand and supply, major competitors, product ranges, quality, sources, transportation costs, and other relevant information. This information is available from government, researchers, firms, commodity exchange, and value chain participant associations. Marketing firms need to have market intelligence units for information gathering and processing before making decisions.

Marketing risks are common, and management of these risks is aimed at obtaining favourable prices for products and ensuring that all marketable supplies are sold. Agribusiness risks are caused by several factors which include unfavourable changes in the power of consumers and suppliers, and competitor products in the market. Thus, marketing risks occur due to changes in the composition and behaviour of both factor and product markets.

Grading is establishing classes (grades) of certain qualities for comparison. For example, maize grain in Zambia is graded as: A - for good quality; B - for moderate quality, and C - for low quality. Each grade has its own features



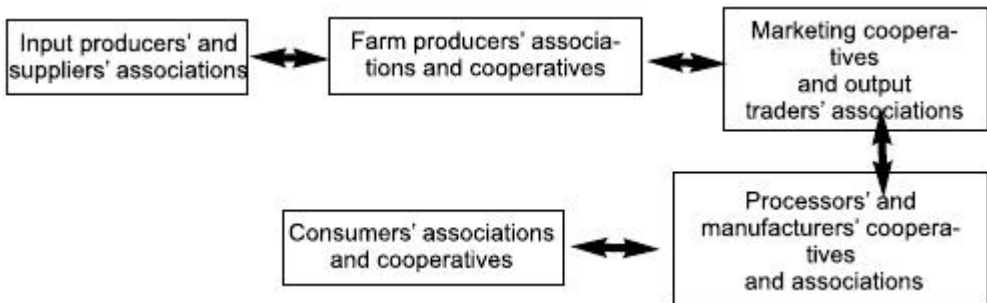
which differentiate it from other grades. It is the function of markets to classify commodities into different grades to ease transaction processes. Commodities of high quality grade fetch higher prices compared to those of low quality grade. In some cases, commodities of different grades are given new brand names to ease market communication with consumers.

Standardising is establishing measures (standards) of performance for comparison. Each element in the commodity has its own standard. Standards are set by national and international institutions to protect health and guarantee fairness to consumers. Food standards are set by food and nutrition state agencies to ensure that citizens consume the acceptable commodities. Water standards are set by World Health Organization (WHO) so that all businesses in water supply can supply water that meets acceptable standards. Markets have to supply commodities of certain acceptable standards only. Standards are important for creation of sets of elements that are used to define grades. The purpose of grading and standardising is to facilitate buying and selling, and minimise pre-purchasing inspection, as well as protecting consumers against exploitation.

Certification is ascertaining a product that it has met the required standard. It is common in agribusiness markets because of health and safety needs. This function assures quality of products to traders and consumers. In Zambia, the fish certification is done by the Department of Fisheries and local government authorities. Meat certification is undertaken by the Department of Veterinary Services. Planting seed is certified by the seed certification institute (Government of Zambia, 1988). A certificate is normally issued at the end of the process.

### Interest Group Interactions

Participants in marketing chains form interest groups that aim to swing marketing power to the advantage of members. Analysis of such groups assumes that distribution of benefits to participants at any stage in the marketing chain depends heavily on the extent to which they speak with one voice. The need for formation of business and lobby groups is growing in many African countries. Two common types of pressure groups are associations and cooperatives. Interactions among interest groups are indicated in Figure 7.3.



**Figure 7.3:** Interest groups interactions in agribusiness marketing chains

Cooperatives are businesses formed by members who face common problems related to market failure at certain stages of the agribusiness marketing chains. These members run individual businesses for which they seek to support through formation of these cooperatives. Thus, cooperatives are unique businesses because they formed to help individual member businesses generate higher profits rather than make own these profits (Downey and Erickson, 1987; Burton, 1989; Kohls and Uhl, 2002). All profits generated by cooperatives are redistributed to individual member businesses as patronage refunds. Cooperatives generate profits on basis of use by members rather than investment. On the contrary, associations are lobby groups formed to protect interests of members engaged in business or consumption. Cooperatives and associations play important roles in the agribusiness marketing chains. Both types of interest groups exist to solve market failure problems faced by members in input supply, output, processing and consumer markets. They perform different functions depending on the marketing chain activity. On basis of function, interest groups are in five categories, namely, input supply and procurement, production, marketing, processing and consumer cooperatives and associations.

Input associations supply farm inputs to farmers and input procurement cooperatives are involved in purchasing inputs, and supplying them to farmers who provide demand at low cost. Whereas input suppliers' associations are interested in high prices for their members, cooperatives in this category want large volumes and low prices for their members. Thus, the two types of interest groups are constant conflict with each other. Benefits to members lie in equate distribution of input prices and trade volumes to both groups.

Production cooperatives and associations are involved in farm production, and supplying to target markets. Interest groups in this category interact with both input supplier groups and output market groups. They negotiate for large volumes and low prices with input supply groups, and large volumes and high prices with output market groups. Thus, they try to raise the net profit margins from two fronts. Farmer groups, like the Poultry Association of Zambia, are in this category.

Marketing cooperatives and associations are involved in bulking, packaging and storing smallholder output into commercial volumes for large scale buyers and processors, and supply these commodities when market periods are favourable. Cooperatives and associations in this category are always in conflict, and they are also in conflict with processing cooperatives and associations. Whereas cooperatives solicit for high prices for their large volumes, traders associations want low prices, large volumes and high quality. The major advantage of these institutions lies in their recognition of small-holder farmers in marketing chains, support farm production by finding stable markets, promoting quality and raising producer prices. In Zambia these institutions are mostly found in the dairy and grain marketing sectors, and range from small local groups to large federated interest groups.

Processing cooperatives and associations are involved in transforming smallholder farmer output into secondary products through processing and manufacturing. They are essentially value adding interest groups. Their major advantage is in their capacity to raise prices through value addition. In Zambia these institutions are mostly found in milk, beef and rice processing. These groups do not have conflicting interests with each other. However, they are in constant conflict with cooperatives and associations in the marketing node as well as those in the consumption node.

Consumer cooperatives and associations provide consumer goods to members who find it costly to individually solicit for them from main consumer centres. They also lobby for enactment of laws to protect consumers. These institutions are credited for availing high quality consumer goods to members at low cost. Consumer cooperative shops and beverage clubs are common in police and military camps located in remote areas. Consumer protective associations are mostly found in commercial centres. Interest groups in this category are not in conflict with each other but are in conflict with those in the processing category.

### Agribusiness Marketing Mix Elements

Success in agribusiness marketing depends on how well it combines products, prices, communication and distribution in a target market segment. These four elements comprise the marketing mix which is defined as a group of variables offered to the market at a particular time (Figure 7.4).



**Figure 7.4:** Agribusiness marketing mix elements

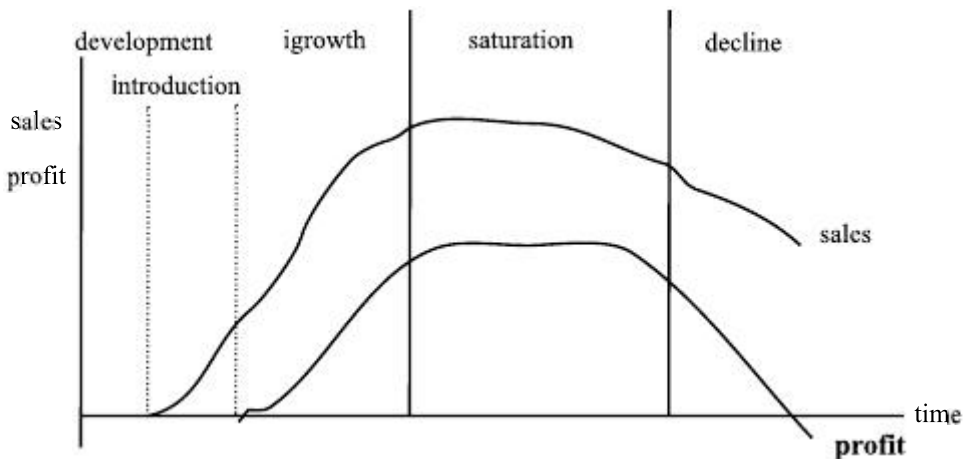
Selection of marketing mix combinations depends on the type of market segments targeted by individual firms. Consumers in particular market segments have buying habits, consumption patterns and demand trends that suppliers need to observe. Moreover, suppliers also have to contend with substitutes, complements, and competitors they have to contend with. These factors shape combinations of marketing mix elements that suppliers use at any time.

## Product

A product is a commodity that a marketer sells to consumers to generate an income. Agribusinesses formulate product policies on basis of several factors such as product attributes, product combinations, presence and closeness of substitutes and complements, age of the product, and availability. Products need to be of high quality, have attractive features, and be distinguishable from other products. Thus, individual products have to be branded by indicating a brand is a name, term, sign, and symbol intended for identification from those of other competitors. Finally, products have to be packaged for product hygiene, long shelf life, and reputation. Labelling communicates the contents of the product and company name, and appeals to customers to make a purchase.

A product needs to be in appropriate combinations with other products in the markets place. It is preferred that close substitutes are few and strong complements many to sell fast. A product mix or set of product lines and items offered for sale to buyers in a given market segment needs to provide complementary effects on each other and, at the same time, minimise easiness of entry by close competitors. A careful combination of product width (number of lines offered) and length (number of items in the product mix) helps to reach many buyers and maximise sales.

Agribusiness products have life cycles with stages that influence costs, sales and profits. A typical commodity life cycle has five stages, namely, development, introduction, growth, maturity (saturation) and decline (Figure 7.5). Product costs, sales and profits differ at each stage of the life cycle.



**Figure 7.5:** Sales and profit performance in the product life cycle

In the development stage, sales, revenues and profits do not exist. However, there is expenditure on product and market development, research, market testing, market analysis, and development of both market and product strategy. The introduction stage is characterised by appearance of new products on the market, high promotion and special offers to dealers, and low sales. Profits show a little later after sales have been made. The growth stage is associated with rapid sales rise, large market size and increasing competition. Agribusinesses concentrate on expanding production, improving product quality and features, adding new products, expanding market outlets, and directing communication towards conviction to buy. At maturity (saturation) stage, market and sales growth stagnate, prices shrink, and price competition is high. At this stage, firms may embark on market modification to expand sales volume by converting non-users, entering new markets and winning customers from competitors. They also embark on product modification [re-definition] through quality improvement, feature improvement, and style improvement. When a product bears words like “new” or “improved”, it may be an indicator that it has been redefined. The final or decline stage is characterised by permanently declining sales and losses. Products may either be withdrawn from the market or still be redefined to keep it on the market.

The length of the product cycle may be long or short depending on certain factors. Generally, products have longer life cycles when they are more consumer friendly and more adaptable for use in changing business environments. High frequency of close substitutes on the market reduces the life cycle. On the contrary, presence of strong complements lengthens the product life cycle. Lastly, high running costs associated with the use of some products shorten the life cycle. Investment in product development is important to keep pace with factors reducing the product life cycle.

Successful product marketing requires blending the stage of the product life cycle with the state of the market. When both products and markets are present and well developed, agribusinesses need to concentrate on market penetration. Capturing market share through low prices and aggressive promotion are pursued to win new consumers and maintain loyalty of existing consumers. Placing new products in existing markets requires concentration on product development. Agribusinesses undertake this strategy by changing the quality, brands and service of products. However, expanding into new and unfamiliar markets with existing products creates substantial risk. In such cases, embarking on market development by identifying potential users, increasing distribution channels, and expanding into export markets are better alternatives. Lastly, placing new products in new markets is very risky, and firms need to diversify into other products. Agribusinesses have three main diversification approaches. Firstly, they can diversify by adding new products by using the same production technology to come up with new products that appeal to new customers. Secondly, they can also diversify by adding new products produced from different types of production technology. Thirdly, they can diversify into new businesses with no relationship to current technology, products or markets.

## Price

Price is an important marketing mix element because it determines revenues for marketers. It is formulated by taking into account production and development costs, expected profits, required market share, relative commodity scarcity, prices for substitutes and complements, and social responsibility of marketing company. The policy formulation is important when introducing new products, entering new markets, input costs rise, prices of substitutes change, and competitors change marketing strategies. Agribusinesses choose prices from a variety of options in response to the prevailing environment and the objective to be accomplished.

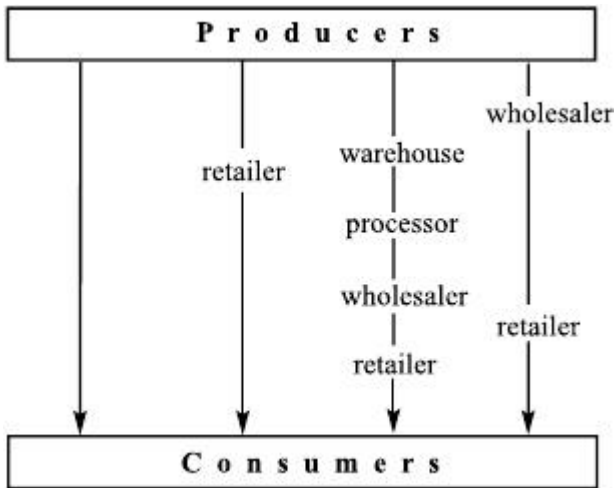
The first price option common in agribusiness marketing is pan-territorial pricing, and it involves the application of a uniform price for a commodity across the country or region. It is common especially when government participation is high. Governments normally use uniform prices in input, farm produce and final consumer markets. For example, the Food Reserve Agency in Zambia buys maize at uniform prices from farmers and sells at uniform prices to processors. Inputs under the Farmer Input Support Programme are also distributed at uniform prices. This price is highly appreciated by farmers in outlying areas but it does not encourage private sector participation. The second price policy common in agribusiness is: price cost pricing or mark-up pricing. The price is arrived after considering production costs on which profit is computed as a percentage. However, under this policy, it is difficult to isolate costs attributed to individual products sharing marketing costs. The third policy is competitive pricing, determined by the level of competition in the market. No single firm controls the price except for the laws of supply and demand. It is the most preferred policy when private buyers dominate agribusiness markets. Penetration pricing is the fourth option, and it offers low prices and slowly makes upward adjustments to the desired level. It is intended to create wide acceptance for a commodity over a short period. New products and those with a high price elasticity of demand are appropriately marketed with this policy. When used in combination with high promotion, it is referred to as rapid penetration. Slow penetration occurs when promotion is low. The fifth price option is market skimming, and it is the opposite of penetration pricing. It is implemented by introducing a product at a high price for more affluent customers, and gradually reducing it to attract the next band of customers. It is commonly practised when the product is new and the market is largely price inelastic. Rapid skimming pricing uses high promotion and slow skimming pricing takes place when promotion is low. Discount pricing policy is yet another price option, and it is followed when customers receive price reduction for a specified price for some specified reason. Volume discounts and cash discounts are quite common. The seventh price option is psychological pricing, and it involves pegging prices that are emotionally satisfying by looking better when they are somewhat deceiving. An example of psychological pricing is pegging a product going for USD3.00 at USD2.99 to make it look like it is cheap. Lastly, prestige pricing policy is adopted when the firm targets customers of high

social class. Commodities of same quality may have higher prices in shopping area patronised by high class customers and low price in common shopping centres.

### Distribution Channels

Distribution is important because for agribusiness products, production, processing and consumption do not take place in the same location or same time. This creates time and distance gaps between producers, processors and consumers. Costs of closing these gaps change with changing business environment. Commodity distribution activities of order processing, warehousing, transportation, packaging, stock management, and consumer service. Costs usually increase with volume of sales. Transport and inventory management account for most of the distribution costs. Distribution activities must aim to minimise returns inwards to maintain net business sales and profits in the year high. Returns inwards raise storage costs, throttle the processing function, lower the image of the firm, and lead to legal battles.

Distribution channels are sets of institutions which facilitate the movement of agribusiness products from the point of production to the point of consumption. The channels can be direct or indirect as indicated in Figure 7.6.



**Figure 7.6:** Types of distribution channel

The choice of channel is determined by consumption trends and buying behaviour of consumers. Direct channels exist when consumers can access products they require from producers. Many farm producers run farm gate shops to supply commodities directly to consumers. Processors, likewise, also run shops to supply commodities directly to consumers. Such direct channels are preferred because they eliminate some marketing costs through elimination of middlemen. Companies with mobile distribution trucks reach customers using this channel provided customers individually or in groups meet the minimum volume requirements for distribution. For example, bread and beer are commonly distributed through this channel in cities in Zambia.

Indirect channels are common when consumers access commodities through other intermediary institutions. Reaching customers through retail shops is common when either the company has own retail outlets or through other retail shops. The channel exists when it is not economical for consumers to directly access products from producers. Commercial farms in egg production normally establish retail outlets on main roads to reach consumers.

Use of wholesale and retail shops is also common in agribusiness marketing. In many cases, companies have own wholesale shops in many cities to ease access of commodities by retailers. Processing companies use such channels in Zambia. Wholesale shops may also be owned by independent businesses.

Channels with processing and other institutions are very common in agribusiness products with many forward and backward linkages. Vertically integrated businesses perform activities from production to retailing. The Zambia Beef Company is a typical example of a company with such a distribution channel. Long distribution channels are also common when farm producers do not individually supply adequate volumes to processors and aggregation is required.

### **Market Communication**

Market communication involves activities intended to raise product sales, raise company image and improve relationship with customers. Basic methods of communication are in four categories, namely, advertising, personal selling, sales promotion, publicity, and labelling. Advertising is passing information aimed at persuading and convincing customers in a target market to buy products. It accomplished by means of written and spoken word, and by visual material. Common advertising media include print and electronic media, static and mobile posts, product labels, agribusiness shows, and demonstration plots. Generally, advertising raises product familiarity to customers, passes information on product features and benefits, and persuades customers to buy and maintain product loyalty. The second communication category is personal selling. Personal selling involves contacting customers and creating interest and preference for company products. It is most suitable for opening and closing sales, providing after sale services, and collecting information on customer



opinion. The third category of market communication is sales promotion. It is communication by use of incentives, and it can be directed at either final or trade customers. It is effective for drawing attention to new or improved products, raising sluggish and off-peak sales, and improving customer acceptance. Promotion targeted at final consumers is achieved through use of free samples, temporary price reductions, post-sale demonstrations. Trade customers are reached through dealer cooperation using trade discounts, joint advertising, and provision of display materials. The last communication category is publicity which is basically news about the firm and its products reported in the press without charge. Examples of publicity are reported events, press statements, sports sponsorships, and donations to public institutions and charity. Labelling is communicating the contents and attributes of the product on the packaging material using appealing styles to consumers. Such communication normally provides information on type of product, composition, company name, and trade name. Labels play an important role in persuading and convincing customers to buy products.

### **Commodity Marketing Channels: The case of Zambia**

Commodity marketing channels differ for different commodities in African countries depending on level of government participation, degree of private sector participation, extent of value addition, marketing channel requirements and amount of vertical integration in some firms. Some examples of marketing channels will be described with reference to Zambia.

### **Grain Marketing Channels**

Grain marketing channels are very complex in southern African countries where the commodity is a staple food. There is a high degree of government and private sector participation (FEWSNET, 2010). In Zambia, the sector also has a large of formal and informal participants. Maize production is in the hands of commercial and smallholder farmers with smallholder farmers producing over 70% of total production. Other grains like wheat come mainly from commercial farmers.

Marketing is undertaken by both formal and informal participants. Smallholder farmers supply the commodity to well organized private buyers who aggregate and supply to processors and export markets. Some large scale private buyers belong to the Grain Traders Associations of Zambia (GTAZ) to create some market power and lobby government for favourable policy. They own a network of warehouses in main procurement and delivery centres around the country. Members of these associations have performance standards which they follow on moisture content, grain quality and bagging. Some players in the association include Amagrain, NWK Agribusiness Ltd, Afri Corporation, Olam Zambia and Seaboard. Months of maize grain procurement (April to August) are characterized by low prices suggesting the existence of high negotiating power by the buyers.

The major grain marketing organisation in Zambia is the Food Reserve Agency (FRA) which is a government owned and controlled company (see Nkonde, *et al.*, 2011). It was established in 1996, and its main function is to procure and manage strategic reserves of mainly maize and rice. The FRA procures and sells at government stipulated pan-territorial prices. It also performs export and import functions as decided by the government. Major export markets are Zimbabwe, Democratic Republic of Congo (DRC), Mozambique and Namibia. Depending on extent of its involvement in grain marketing, it can either promote or throttle private sector participation. Informal traders also export maize grain especially to DRC.

Grain processors include millers, brewers, feed manufacturers and other food processors. These companies distribute products through own outlets and a network of retailers. Part of the produce is exported to Democratic Republic of Congo and other neighbouring countries.

### **Dairy Milk Marketing**

In Zambia, fresh milk is marketed largely through a network of cooperatives which also act as aggregation centres in along the line of rail between Livingstone in the south and Copperbelt in the north (see Mumba and Pandey, 2012). These cooperatives supply milk mainly to Parmalat (Pandey, 2013) although a growing number of district cooperatives like Choma and Monze have vertically integrated themselves into processing.

Milk processing by cooperatives is spearheaded by the Dairy Processors Association of Zambia. It requires that dairy processors register with the association, and promotes growth of a competitive dairy sector which meets quality, nutrition and safety needs of consumers; promotes locally produced dairy products on the export market; and encourages customers to consume more milk. It also educates community on the health benefits of milk and milk products.

Milk processing is dominated by two companies, namely, Parmalat and ZAMBEEF. Whereas Parmalat depends on supplies from cooperatives around the country, ZAMBEEF has strong backward and forward integration linkages in the dairy industry. It procures milk from own dairy farms and from a network of forward contracted smallholder dairy farmers around Lusaka and Chisamba areas in central Zambia. It processes the milk into different products which are distributed through own outlets and supermarkets around the country.

### **Cotton Marketing**

Cotton marketing and ginning is dominated by a few companies, namely, NWK Agribusiness Services, Amaka Cotton Ginners and Cargill Cotton Ginners Ltd. These companies procure cotton from small holder farmers through contract

farming. The companies own ginneries in Zambia, and produce cotton lint, cotton seed, cotton oil and cotton cake. The companies export virtually all the lint produced. Cotton producers in central Zambia have formed a ginning company to add value to their seed cotton.

### **Beef Marketing**

Production of beef animals is mainly in the hands of the informal sector dominated by small holder farmers. Formal and informal traders supply live animals to abattoirs which either offer toll services or take title. Abattoirs supply meat to butcheries for retailing or to processors for more product differentiation. Processors supply meat to retailers or through own shops. The regulatory framework is provided by the Government through the Department of Veterinary Services.

Beef marketing is dominated by ZAMBEEF Plc which is one of the largest agribusinesses involved in the production, processing, distribution and retailing of beef in Zambia. It is highly integrated with activities in farm production as well as value addition through processing, wholesaling and retailing. It reaches consumers through supermarkets as well as its wide network of own retail shops in towns and cities. Distribution is assisted by its own trucking unit. The company is also highly diversified with a wide range of beef products. It exports beef products to some SADC (Southern African Development Community) countries. Other companies running butcheries exist in beef marketing in towns and cities.

## **Evaluating the Marketing Process**

### **Marketing Auditing**

Agribusiness marketing encounters a lot of physical losses due to high perishability in marketing processes. Physical losses are encountered at each marketing stage, and reduce the marketing operational efficiency. This calls for effective evaluation of marketing effort through marketing audits. Marketing audits are independent examinations of marketing objectives, activities and environment for purposes of improving future marketing processes. A typical marketing audit provides information on the prevailing business environment, the marketing strategy use, marketing plans and control programmes, marketing mix combination, profitability assessments, and marketing organization structure. The analysis of the business environment gives information on external and internal forces influencing business performance. The external factors include political, economic, social, technological and physical elements offering business opportunities and threats. Internal factors include customers, competitors, suppliers, middlemen, and the public which provide information on strengths and weaknesses of the organisation. The marketing strategy is a position the

agribusiness takes in response to the change in the business environment. Both short and long term planning and control are important for achievement of profitability and other marketing goals. Revision of marketing mix elements is a continuous process as agribusinesses respond to the environment. The marketing structure provides a delivery mechanism for achieving objectives and it must be flexible to adapt to the changing needs of the business. Some important marketing objectives that need careful evaluation include formulating marketing mix combinations, identifying marketing opportunities and preparing strategies to meet them, distributing and selling products, developing products, undertaking market research, communicating products to customers, and promoting company image.<sup>1</sup>

### **Approaches to Marketing Evaluation**

Evaluation instruments differ depending on aspect of marketing under consideration, and these evaluations are important in operational and pricing efficiency, sales analysis, distribution channel, profitability, and customer tracking. Common tools include financial statements, financial ratios, physical ratios, and statistical parameters are often used for such analysis. Financial statements are user friendly because they can also be used to evaluate many marketing objectives including channels, sales representatives, outlet profitability, and activity profitability. They also provide data for generation of financial ratios needed to assess relationships between expenses and sales.

### **Marketing Efficiency Evaluation**

Marketing activities need to be evaluated for efficiency since marketing activities need to transmit products from farms through various stages to final consumers. Consumers need to get the same equivalent of the products as at farm production. Outputs of the marketing activities at any stage need to be produced with minimum losses. Marketing functions need to be performed with appropriate technology or procedures that maximise efficiency. Operational and pricing efficiencies are the common types used in evaluations.

Operational efficiency is measured as a ratio of output to input in a marketing activity as given in the Eqn.7.1.

$$\text{Operational efficiency} = \frac{\text{Marketing output}}{\text{Marketing input}} \times 100\% \quad \text{Eqn 7.1}$$

It is used to measure productivity of physical functions like distribution, processing, aggregation, wholesaling and retailing. Pricing efficiency measures the extent to which marketing activities reflect costs of performing them under a constant operational efficiency. The concern is on how effectively prices reflect

costs of moving products during marketing. Efficient pricing bench marks of a perfectly competitive market as indicated in the Eqn. 7.2.

Inability of prices to reflect the true value of marketing costs results in market failure, and it can be attributed to power of some players like monopolists in the market. Pricing inefficiency may also result from lack of sufficient market information on alternatives such that prices fail to reflect costs adequately.

### Sales Evaluation

Sales evaluation is needed to assess the extent to which sales goals established in the marketing plan are achieved, and ultimately, determine means of correcting any problems to keep the marketing programme in place. The analysis is derived from deviations of actual components of the income statements from projected ones. A tolerable limit needs to be set to trigger an intervention from managers. An example is given in the Table 7.1.

**Table 7.1** Sales analysis

<b>Variable</b>	<b>Planned (target)</b>	<b>Actual value</b>	<b>Deviation</b>	<b>% deviation limit (%)</b>	<b>Tolerable Comments</b>
Sales volume	5,000	5,500	500	10	(5)
Price(ZMW)	350	340	(10)	(2.9)	(2.5)
Total revenue	1,750,000	1,870,000	(120,000)	(6.9)	(5)
Market share	75	70	(5)	(6.7)	(5)
Market size	10,000	12,000	2,000	20	(5)
Variable costs @ZMW250/unit	1,250,000	1,375,000	(125,000)	(10)	2.5
Profit contribution	500,000	495,000	(5,000)	(1)	(2.5)

ZMW – Zambian Kwacha

Table 7.1 shows that pricing policy was responsible for the low profitability. Although the market size is larger than projected, the small market share could be responsible for the low price adopted. This approach can also be used to

analyse costs, profits and losses.

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$$\text{Pricing efficiency} = 1 - \frac{\text{deviation in price from pure competition price}}{\text{Pure competition price}} \times 100\% \quad \text{Eqn 7.2}$$

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### Net Sales and Expenses Evaluation

The relationship between net sales and expenses is conducted to assess the level of expenditure required to generate sales. The amount of net sales generated depends on amount of expenditure spent on it. The evaluation is conducted by using the ratio of net sales to expenses generated over time as illustrated in Figure 7.7.

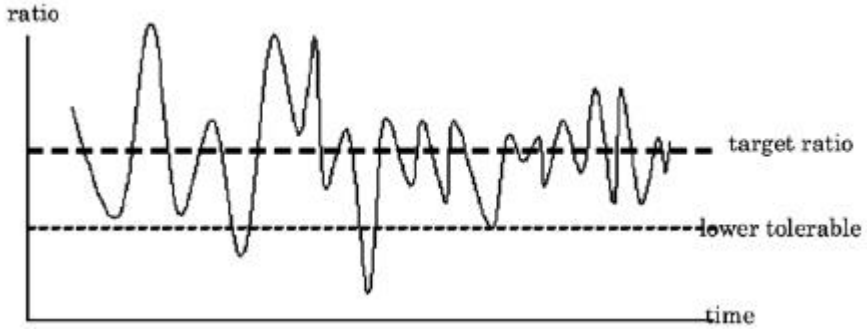


Figure 7.7: Market share analysis

The high value of the ratio implies that marketing expenses are lower relative to the values of net sales they generate. When the ratio is small, then the expenses are high compared to the value of net sales. A lower limit could be set to trigger control actions on expenses from time to time. High expenses may prevent attainment of marketing sales and profit goals. This approach is used to analyse specific expenses like advertising, transportation, sales commission, research and labour.

### Market Share Analysis

Market share analysis is required to assess the performance of a company’s marketing programmes relative to those of competing firms. A market share ratio can be generated as a proportion of the whole market served by the company or as a proportion of a company’s sales relative to those of the closest competitor in the market. A time series index can be generated over time to assess performance of marketing programmes over time, as illustrated in Figure 7.8.

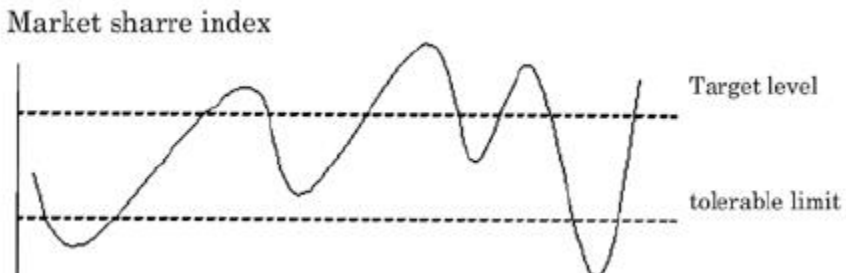


Figure 7.8: Market share analysis

It is preferred that the index is as close to 100% as possible for the absolute market share and larger than 1 for the relative market share. A lower limit may be set to indicate when the company needs to take action. When the ratio curve cuts the lower limit, the firm needs to correct the factors that cause such movements.

### Customer Tracking

Customer tracking is required to determine the level of customers loyal to company products. A ratio of loyal customers to those lost to other companies can be computed over time. Similarly, a company can generate a time series ratio of customers with complaints to those without complaints.

### Profitability of Marketing Mix Elements

This approach is used to assess how some marketing mix elements contribute to profits generated during any business year. An example on advertising, promotion and personal selling is given in Table 7.2.

**Table 7.2:** Profitability analysis of marketing mix elements

	Price	Advertising	Promotion	Personal selling	Sales	Profit
	(ZMW)	expenditure (ZMW)	expenditure (ZMW)	expenditure (ZMW)	units	(ZMW)
1	20	2,000	1,000	500	1,250	22,000
2	20	2,000	4,000	500	3,000	34,000
3	25	4,000	2,000	1,000	2,000	44,000
4	25	4,000	4,000	1,000	3,000	67,000

ZMW – Zambian Kwacha

This approach is relevant for identifying marketing mix combination which maximises profits or minimises losses.



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### Distribution Channel Analysis

Analysing distribution channels employ income statements developed for each marketing channel as shown in Table 7.3.

**Table 7.3:** Market outlet analysis

	<b>Own shops</b>	<b>Agent shops</b>	<b><u>Sales representatives</u></b>	<b>Supermarkets</b>
Sales (ZMW)	60,000	20,000	40,000	80,000
Less Cost of goods sold (ZMW)	39,000	13,000	26,000	25,000
<b>Gross profit (ZMW)</b>	<b>21,000</b>	<b>7,000</b>	<b>14,000</b>	<b>55,000</b>
<b>Less marketing expenses</b>				
Distribution (ZMW)	8,000	2,600	400	5,600
Packaging (ZMW)	6,000	2,520	1,080	1,250
Promotion (ZMW)	3,100	1,240	1,860	800
Commission (ZMW)	3,000	1,260	540	950
Total (ZMW)	20,100	7,620	3,880	8,600
<b>Net profit (ZMW)</b>	<b>900</b>	<b>(620)</b>	<b>10,120</b>	<b>46,400</b>

ZMW – Zambian Kwacha

In this case, selling through supermarkets generates the highest net profit whereas selling through agent shops causes a loss. The company could either close sales through agent shops or change its marketing mix to increase sales and cutting expenses down.

### Assessing the Contribution of Marketing Mix Elements to Marketing Objectives

The contribution of marketing mix elements to marketing objectives may be assessed using Lorenz curves. A curve of this nature gives a percentage contribution of a marketing mix element to sales, expenses, profits, purchases, and consumption. This analysis leads to extraction of information on proportion of marketing mix element responsible for a particular attainment level of an objective. A manager may need information like only 10% of buyers account for 80% of company sales, 20% of stock accounts for 90% of the inventory costs, 15% of the channels accounts for 95% of the perishability losses, 5% of the products generates 85% of company profits, and so on. The importance of this type of information is that it allows careful management of sensitive marketing elements. For example, if 20% of products sold account for 80% of the total sales, then considerable effort should be directed towards maximising sales of these

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products; if 10% of the inputs bought account for 90% of a production costs, then management needs to undertake the purchasing of these materials to avoid disruption of production processes.

Generation of Lorenz curves requires arranging the marketing mix element in the declining order of its contribution to the company objective. Both the marketing mix element and the contribution need to be presented in cumulative form and expressed in percentage of the cumulative total. For example, if a retailer sells beef and generates ZMW2,000 in sales, eggs ZMW5,000; fresh milk ZMW20,000, fresh fish ZMW10,000 and dressed broilers ZMW8,000 per week, a cumulative curve can be generated. Data given in Table 7.4 can be used to generate a cumulative curve relating percentage contribution of products to total sales.

**Table 7.4:** Assessing sales by type of product

Marketing mix element (product)	Type of product	Fresh milk	Fresh fish	Dressed broilers	Eggs	Beef
	Rank	1	2	3	4	5
	Percent rank	20	20	20	20	20
	Cumulative percent rank	20	40	60	80	100
Company objective (sales)	Net sales	20,000	10,000	8,000	5,000	2,000
	sales (ZMW)	20,000	30,000	38,000	43,000	45,000
	Cumulative sales (%)	44	67	84	96	100

ZMW – Zambian Kwacha

Table 7.4 shows that 60% of products comprising fresh milk, fresh fish and dressed broilers account for 84% of the total retail sales. These products hold the life line of the retail shop, and therefore, the manager needs to ensure non-disruption of procurement and marketing of these products. The data contained in Table 7.4 can be presented graphically.

### Marketing Research

Marketing research is a systematic and objective collection and analysis of data required for generating information needed in making marketing decisions. Research is particularly important when sales are declining, costs are rising, and profits are dwindling. Identifying courses of such problems is important. A researcher then needs to formulate questions on the status of the market, strategies of competitors, type of substitutes, company’s reputation with consumers, state of the marketing mix combination, and other relevant questions.

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Cumulative

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The general steps for undertaking marketing research involve problem definition, specification of data to be sought, specifying a research design for data collection and analysis, formulating instruments for data collection, determining sample size, where to source the data, conduction field work, analysing data and presenting a report. Data used in research can be primary or secondary data, qualitative or quantitative, and time series or cross-sectional data. Primary data is generated, collected and documented by the researcher from respondents. Secondary data is found in documented form by various institutions, book, journals and internet sources. Qualitative data is collected in unquantifiable forms. Data of variables like taste generally qualitative because respondents may only indicate whether good or bad but cannot attach a measure of goodness or badness. Quantitative data is collected in quantifiable units. Examples of such data include price, sales, and costs. Time series data is collected over different time periods whereas cross-sectional data is collected over a large area. Each type of data has its own advantages and disadvantages.

### **Conclusion**

Agribusiness markets play important roles in distributing products from points of initial production to final consumers. They change form, quantity and value of products through various actors who may be individuals or institutions in respective marketing chains. Marketing institutions involved play important roles of production, trading, aggregation, storage, processing, retailing, financing, risk bearing, market information, sorting, grading, standardising, and quality assurance. These activities are broadly classified as physical, exchange and facilitating functions. Actors in these institutions justify their existence through meaningful value addition for their respective customers. Whereas producers and processors add value by changing form of products, traders add value by taking products nearer to aggregators who add value by assembling products into volumes required by processors, and retailers add value by dismantling products into quantities required by final consumers. Whereas exchange functions are used to transfer ownership of products through buying and selling, physical functions are used to make products available in right volumes through aggregation and disaggregation, in right form through production and processing, over space through transportation, and over time through storage. Facilitating functions ensure that exchange and physical functions are performed smoothly. Since each group of actors is a target market for another group, exchange functions are influenced by four marketing elements namely, price, products, communication and distribution. The market power for individual actors also differs, and actors tend to form interest groups which may either be associations or cooperatives to swing market power in their favour. To assess extent to which marketing objectives are met, activities are evaluated for efficiency, profitability, and effectiveness using different tools including financial ratios, statistical models, and trends. Research plays an important role in making these evaluations objectively.

**Questions for Discussion**

1. Explain what is meant by: *Agribusiness Marketing System*.
2. How does the institutional view of analysing agribusiness marketing differ from the interest group analysis view?
3. Explain the role of cooperatives and associations in agribusiness marketing chains.
4. Consider the marketing chain of a particular commodity in your country and describe the stages it goes through in the marketing process.
5. Discuss approaches for evaluating:
  - (a) Sales against expenses.
  - (b) Profitability of marketed products.
  - (c) Efficiency of the aggregation activity.
6. Complete the efficiency columns in Tables 7.5-7.8 and analyse the data.

**Table 7.5:** Efficiency evaluation of marketing channels

Distribution channels	Distributed volume	Sold volume	Efficiency (%)	Target efficiency level (%)	Comments
Farm-market-consumer	800	760		97.5	
Farm-sales agent-consumer	700	690		97.5	
Farm-shop-consumer	900	680		97.5	

**Table 7.6:** Efficiency evaluation of marketing functions

Processing activity	Input (L)	Output (L)	Efficiency (%)	Target efficiency level (%)	Comments
Fermenting	800	760		97.5	
Packaging	800	690		97.5	
Transportation	800	680		97.5	
Pasteurising	800	880		97.5	

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**Table 7.7:** Efficiency evaluation of processing equipment

Equipment	Input	Output	Efficiency	Target efficiency	Comments
	(L)	(litres)	(%)	level (%)	
A	900	760		95	
B	1,000	890		95	
C	2,000	1,900		95	
D	2,500	2,400		95	

**Table 7.8:** Efficiency evaluation of prices

Channel	Price	Price under pure	Efficiency	Tolerable	Comments
	(ZMW)	competition	(%)	efficiency	
		(ZMW)		level (%)	
A	1,500	1,200		97.5	
B	900	1,200		97.5	
C	1,200	1,200		97.5	
D	1,100	1,200		97.5	

ZMW – Zambian Kwacha

7. Box 7.1 contains the key elements of a Case Study on distribution of benefits by stage of marketing chain as well as by participation by gender in the Tilapia fish marketing chain in Sinazongwe, Zambia. Analyse the situation that is referred to in the Case Study and answer the questions which follow.

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**Box 7.1:** Evaluating contribution of benefits by stage of marketing chain and distribution of benefits by gender in Tilapia fish marketing chain in Sinazongwe, Zambia

Agribusiness marketing offers unequal benefits to participants at different marketing stages and distribution of benefits to participation by gender also differs.

The Tilapia fish hunting and capture along Lake Kariba in Sinazongwe comprised deep water and shallow water fishing, and gave an average price and gross margin of US160 cents/kg and US40 cents/kg respectively. Marketing consisted of intermediary traders, aggregators, processors, retailers and distributors to other parts of Zambia. Traders enjoyed an average price and gross margin of US190 cents/kg and US21 cents/kg respectively. Aggregators supplied fish at US260 cents/kg and added a gross margin of US49 cents/kg. However, some aggregators who procured directly from captors added a gross margin of US78 cents/kg. Smoked fish cost US300 cents/kg to give processors a gross margin of US31 cents/kg on fresh fish procured from traders and US61 cents/kg on fish directly procured from captors. Distributors of fresh fish to Lusaka sold it at US360 cents/kg and added a gross margin of US59 cents/kg.

Gender participation at each marketing node was highly gender biased. Males dominated deep water fishing (94%) whereas their female counterparts accounted for only 6%. Females constituted 68% of participants in shallow water fishing and males 32%. Males comprised 90% of intermediary trading whereas female constituted only 10%. Females comprised 59% of aggregators compared 41% of their male counterparts. Some 18% of female aggregators owned refrigeration facilities whereas 82% depended on renting. Almost 68% of males owned shops or homes with refrigerators. Fish processing was dominated by females who constituted 57% of the respondents although males had a considerable share of 43%. Males dominated fresh fish retailing with 61% while females constituted 39%. Conversely, smoked fish retailing was dominated by females who comprised 87% of the participants and males the remaining 13%. Approximately 78% of male consumers preferred consuming fresh fish as compared to 22% who preferred smoked fish. The trend among the female consumers was similar with 72% of consumers preferring consumption of fresh as compared 28% who preferred smoked fish consumption. This activity was largely performed by females who comprised 69% of the sample compared to 31% for their male counterparts.

There were varying prices, gross margins, numbers of participants and level of participation by gender at each stage of the marketing chain.

With reference to the situation described in the Case Study, answer the following questions:

What do you think is responsible for variations in prices, gross margins, and level of participation by gender at different stages of agribusiness marketing?

How do you think benefits may be equitably distributed to all participants?

(Adapted from: Syampaku and Mafimisebi, 2013)

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## Chapter 8

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### AGRIBUSINESS MARKETING STRATEGIES

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#### Summary

To be successful, every business needs a marketing strategy. The aim of this chapter is to build the understanding of learners on marketing strategies necessary for the success of an agribusiness. The chapter consists of an introduction that provides students with the rationale for developing agricultural markets in Africa as well as highlights common concepts and their definitions in the domain. The introduction leads the reader to the learning objectives and outcomes of the chapter followed by case studies on marketing strategies employed by selected agribusiness enterprises in Africa. The chapter concludes with study questions for students, suggested readings and references of materials used in the text.

#### *Stratégies de marketing en Agrobusiness*

#### *Résumé*

*Chaque entreprise a besoin d'une stratégie marketing pour réussir. L'objectif de ce chapitre est d'aider les apprenants à la construction de connaissances sur les stratégies marketing nécessaires au succès d'une agro entreprise. Ce chapitre consiste d'une introduction qui explique la nécessité de développer des marchés agricoles en Afrique, et met l'accent sur les concepts et définitions communément utilisés dans la discipline du marketing. Suite à l'introduction, le chapitre présente les objectifs et les résultats d'apprentissage suivi d'études de cas sur les stratégies marketing de quelques agro entreprises en Afrique. Le chapitre conclut avec des questions pour les apprenants, une suggestion de lectures approfondies, et les références par rapport au contenu du chapitre.*

#### Introduction

Agriculture is the largest industry in many less developed countries (LDCs) with industries and commerce depending on it as major source of raw material. It is a common argument that the development of the agricultural sector and

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its corresponding marketing systems is primordial in boosting the economic growth of developing countries (Crawford, 1997). As highlighted by the World Bank (2009), average households in Africa spend about 45% of their income on foodstuffs compared to European and American households which spend 14% and 6% of income, respectively. There are relatively few poor people in most developed countries, and therefore special food targeting programs can be more easily designed for them. However, the scale of poverty in developing countries is such that the distribution of food to poor and less poor people depends heavily on the available commercial system, and how it is therefore very important that it functions efficiently (Crawford, 1997).

Layton (1987) argued that marketing systems play a pivotal role in the economic growth and development of a country. When countries experience economic growth, their rate of urbanisation tends to increase substantially. Whereas the population growth rate of developing countries stands at 2.4% per year, the growth rate of their cities stands at about 4%. This implies that the number of people in urban areas craving to be fed by the rural people is on steady rise. This has a clear implication for agricultural development and marketing systems charged with channeling production and distribution to different points of consumption. Agriculture, in developing countries, is gradually shifting from subsistence farming towards commercial agriculture in response to increased opportunities created by development and urbanisation. As a consequence, farms are likely to decrease in number whilst increasing in size (Crawford, 1997).

Other authors (e.g. Dixie, 1989; Diao *et al*, 2007) have also placed emphasis on how potentially agricultural and food marketing can contribute to uplift the incomes of rural people in developing countries. However, given the big disparity between urban and rural earners, this creates a shift of rural population to towns and cities thereby increasing the pressure on infrastructure and services in urban areas. There are opportunities for rural-based enterprises to improve their earning potential by adopting a market orientation. This can be done by adding value to commodities thereby enhancing their utility; value added products carry a higher value than raw commodities. Increased interest in marketing practices has also been spurred in many developing countries by the induction of market liberalisation as part of economic structural adjustment programmes. Based on this principle, the view that government participation in production and distribution had caused structural distortion in economies has become widely accepted. Corrective measures intended to address these distortions include the return to the market process for all products and resources, encouraging a competitive private sector and privatisation of some functions of marketing parastatals. These require a better understanding of marketing practices and processes within countries implementing economic structural adjustment programmes in general and within agricultural marketing parastatals in particular.

The Global Monitoring Report (2013) indicates that the youth comprise of between 60-70% of Africa's population of which only 30-40% is employed.

Agribusiness firms provide employment to more than 30% of Africa's youth. The education system, which hardly responds to economic realities outside the school boundaries, holds a big responsibility for unemployment in Africa. With local, global and regional food and agricultural markets growing at unprecedented rates, this chapter aims to enhance students' understanding of how to unlock and transform agriculture into a successful business by using appropriate marketing strategies. Increasingly, new collaborative marketing models are evolving in local and regional markets prompting distinct changes in agricultural supply chains. Whether centered on realigned distribution systems, innovative cooperative structures, or alternative food hub designs, agricultural producers and agribusinesses require a growing set of entrepreneurial and business management skills in working collaboratively to better market their products and improve business returns. Accessing markets can be particularly problematic for small-scale agribusinesses that lack sufficient volumes of products to feasibly attract and retain large-scale buyers. Producers and other actors involved in agribusinesses besides other requirements (existing infrastructure, logistical arrangements, etc.) require appropriate marketing strategies to sufficiently address production and marketing barriers in the sector.

### **Learning Objectives**

The main objective of this chapter is for students to understand the underlying economic theory of agribusiness marketing strategies as well as their application to various agribusiness situations in the African context. Specifically, the chapter aims to:

Facilitate the readers understanding of agribusiness marketing terminologies.

Explain the roles of institutions and specialised individuals in the agribusiness supply chain.

Describe the market structure for selected agricultural commodities and food products using case studies from Africa.

Formulate a marketing strategy for an agribusiness product given a hypothetical market situation.

### **Learning Outcomes**

By the end of the chapter, students will be able to:

Explain and define common concepts in the domain of agricultural products marketing;

Analyse a given business environment and formulate suitable marketing



strategies to be employed by an agricultural enterprise;

Provide practical situations for the application of different agribusiness marketing strategies without the risk of making costly business mistakes;

Develop a strong agribusiness diagnostic and problem solving ability that enables students to evaluate and formulate workable marketing plans.

### **The Marketing Concept and Marketing Systems**

Early authors referred to marketing as an extension of the production process. This definition does not make mention of consumption which is the sole end purpose of all production as the interest of the producer is achieved only when that of the consumer is satisfied. In this respect, authors like Dixie (1989) defined marketing as “the series of services involved in moving a product (or commodity) from the point of production to the point of consumption”. However, as Dixie points out, the definition omits two key elements namely a customer orientation and inbuilt sustainability. In this regard, Gaedeke and Tootelian (1983), offer an alternative definition addressing these two omissions. They define marketing as “a management orientation focusing all the activities of the organisation on satisfying customer needs and wants, thereby helping the organisation achieve its long-range objectives”. This definition lays emphasis on the customer as well as the long term sustainability of the organization, and is inclusive of all types of organizations, whether commercial or non-profit making ones.

According to Crawford (1997), it is important to adopt the marketing concept at all the different levels of a marketing system including all the actors involved in the different processes and activities. This enables the whole value chain to exploit market opportunities and benefit economically.

### **Marketing Sub-Systems**

The agricultural and food marketing system consists of four main sub-systems which are the (i) production, (ii) distribution, (iii) consumption and, (iv) regulatory sub-systems. In the chain of activities that connect food and agriculture the key players are farmers (or other producers e.g. fishermen), intermediaries, the food processors and the consumers who all see the agricultural/food marketing system from the perspective of self-interest. These interests are sometimes in conflict as shown in Table 8.1.

**Table 8.1:** Conflict of interests in food/agricultural products marketing systems

<b>Key players</b>	<b>Interests</b>
Farmers	Maximum price, unlimited quantities
Manufacturers	Low purchase price, high quality
Traders and retailers	Low purchase price, high quality
Consumers	Low purchase price, high quality

Source: Rosson, 1974

### Marketing Functions

As indicated earlier, the marketing system refers to two different and distinct levels: the economic actors participating in the value chain and the functions that they perform. There are three sets of functions involved in the food marketing processes as described in Table 8.2.

**Table 8.2:** Marketing functions

<b>Type of functions</b>	<b>Operations per function</b>
Exchange	Buying, selling
Physical	Storage, transportation, processing
Facilitation	Financing, risk bearing, market intelligence, standardisation and grading, securing market information, promotion and advertisement

Source: adapted from Kohls and Uhl (1990)

### Exchange Functions of Marketing

#### Buying

Based on the marketing concept, the needs of consumers are paramount. Buying goods or services is the first and important function of the marketing process. This function can be performed by producers, intermediaries, wholesalers and retailers. They buy, assemble and sell. However, it is interesting to note that buyers are not primarily interested in the quality of the products or services as high quality is linked to high costs. The profile of the buyers in a market also impact on the level of quality demanded.

#### Selling

Selling of goods or services is as complex as the function of marketing itself. Indeed to many, the terms selling and marketing are synonymous. Under the selling function, goods and services are handed over to buyers. This function is

important for producers, intermediaries, consumers and the general public. As the main objective of every business firm is to earn profit from selling goods or services, there is no meaning of business and other marketing functions without selling. Consumers have access to goods and services through selling which satisfies their needs.

### **Physical Functions of Marketing**

Physical distribution functions involve the actual movement of goods from one producer to another, from producer to marketer, and from marketer to consumer. Two important physical distribution functions are: (i) transportation and (ii) storage.

#### **Transportation**

The transport function has one main objective which is to facilitate the availability of the products or services at the required outlet with minimal addition to marketing costs.

#### **Storage**

Storage involves holding and preserving goods from the time they are produced until they are needed for consumption. Storage ensures a continuous flow of goods in the market from the time of production to the time of consumption. It protects the quality of perishable and semi-perishable products from deterioration and ensures continuous supply and demand, particularly for products which are seasonal. Storage provides employment and income, through price advantage and in the stabilisation of prices by adjusting demand and supply.

#### **Facilitating Functions**

Activities which enable the exchange process to take place are referred to as facilitating functions. These activities include product standardisation, financing, risk bearing, market intelligence, promotion and advertisement.

#### **Standardisation**

Standardisation aims at achieving uniformity and consistency in the output of a product and involves producing goods at predetermined specifications. It ensures that products respond to established specifications like quality, quantity, size, weight etc. This function simplifies the exchange process between buyers and sellers through a precise description of the product or service being traded, and therefore contributes to lower marketing costs

### **Financing**

Financing bridges the gap between investing in raw materials (e.g. machinery, fertilisers, seeds, packaging, stocks, flavouring, etc.) and receiving payments from the sales of a produce in most production systems. Between production and consumption, the question of where the funding of investment will come from must be addressed. Consider the problem of a *kola spp* producer based in a remote area with very bad roads and who wishes to supply the market. The problem might be solved by the producer hiring a vehicle adapted to the local road network. In the case where owned/internal finance is inadequate, alternative sources of financing in the case of developing countries may include: microfinance institutions, credit unions or cooperatives, development banks or commercial banks.

### **Risk bearing**

Losses can be experienced at different levels: from production to the marketing and eventual consumption of a product. Risks associated with agricultural products may be physical or related to the market. Physical risks include the destruction of a product through fire, excessive heat or cold, pests and diseases, floods, earthquakes and many others. Marketing risks involve changes in consumer taste, equity, interest rates, currency, commodity, among others. When developing a marketing plan, risks must be considered as a cost. For example, a producer in Cameroon supplying a local market with *Dacryodes edulis* (locally called *safou*) must take special precautions against perishability of the product, in addition to other risks. In doing so, the producer has to invest in the fabrication or purchase of ventilated bags in which to transport products from the farms to the market.

### **Market intelligence**

Successful marketing is based on sound information. Market intelligence is made possible through the collection, interpretation and dissemination of information necessary in understanding the market, determining existing and future needs and preferences, market behaviours and environmental changes that may affect the market. Market intelligence enables the seller to easily find out the needs and wants of customers. It allows the identification of the right products for the market, the most suitable means of promotion and distribution and acceptable prices on the market. Market intelligence contributes to the reduction of risks in marketing decision-making. The collection of information as part of market intelligence can be carried out by the seller or organization any other actor involved at the governmental level or a private company. For example, in Cameroon, the supply of *Ricinodendron spp* (an agroforestry species) is assured to producer groups located in remote villages with poor transport and ICT infrastructure. For a successful marketing of the product, market intelligence needs (location

of traders, market prices, quality needs, etc.) are partly supplied to farmers by development NGOs and community-based organisations in these areas.

## **Agribusiness Marketing and Marketing Strategies**

### **What is a Marketing Strategy?**

This chapter, apart from presenting common concepts in marketing, also expresses the need for agribusinesses to adopt effective marketing concepts and a marketing orientation. To be viable beyond the functional level, agribusinesses need to be directed by a strategy with focus on the market place. The marketing strategy depends on the overall goal of the business in question. It includes the definition of the business, the product or services, target users or clients and the business role in relation to competition. Before deciding on a market strategy, market opportunities must be carefully aligned to available resources in what constitutes a marketing plan. A good marketing strategy can be beneficial to an agribusiness in many ways: conflict reduction, efficient resource allocation, customer focus and many more (Van Wagner Marketing Solutions, 2012).

### **Steps Involved in Designing Agribusiness Marketing Strategy**

Whether profit-oriented or non-profit, every business needs to develop a marketing strategy to effectively reach out to consumers. According to Kotler and Armstrong (2012), a marketing strategy involves two key questions: (i) which customers will be targeted, and (ii) how shall the firm create value for them? The answer to the first question is segmentation and targeting; differentiation and positioning is the answer to the second question. With the two questions answered, an entrepreneur will need to design a marketing program that delivers on the intended value to target customers in what is known as “the four Ps” or Marketing Mix.

### **Market Segmentation**

Companies generally face challenges in connecting to customers in a large, broad and diverse market. Therefore, they are always looking for different and effective ways of reaching their customers. Hence, they divide the market into homogenous groups of consumers with particular needs and wants in a process known as market segmentation. The main aim of market segmentation is to concentrate marketing energy on a specific group with a view to gaining competitive advantage within a segment. For segmentation to be rewarding, the marketer must struggle to understand the needs, wants and demands of potential clients. The consumer market can be segmented based on geographic, demographic, psychographic and behavioural customer characteristics. Table 8.3 shows the major segmentation variables for customer markets.

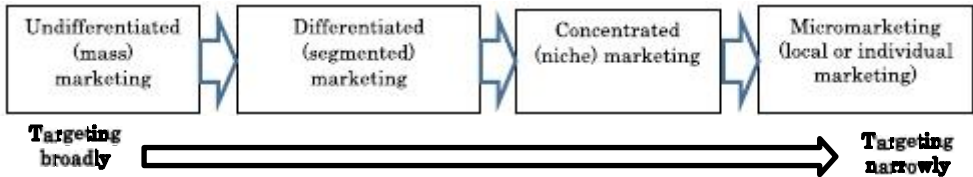
**Table 8.3:** Major segmentation variables for customer markets

<b>Geographic</b>	
World, region or country	West Africa, Central Africa, Kenya, Cameroon,
City or metro. Size (population)	Under 5,000; 5,000-20,000; 20,000-100,000; 100,000 – 500,000; 500.000-1,000,000
Density	Urban area, Suburban area, Rural
Climate	Tropical Zone , Savannah, Humid Forest, Temperate
<b>Demographic</b>	
Age (years)	Under 5, 6-15, 15-25, 25-45, 45-65, 65+
Gender	Male, Female
Family size	1-2, 3-4, 5-10, 10+
Family status	Single, married, no children, single parent, older married, no children under 20, newly wedded
Income (monthly)	Under USD12, USD 12-50, USD 50-100, USD100-150, USD 150-250, USD 250-500, USD 500 above
Occupation	Farmers, students, unemployed, professional and technical, managers, officials. Proprietors, unemployed,
Education	Primary school or less, secondary school, high school, university or higher education, graduates,
Religion	Jewish, Muslims, Christian
<b>Race</b>	
	Asian, blacks, whites
<b>Psychographic</b>	
Social class	Lower class, upper class, working class, middle class, lower uppers,
Lifestyle	Achievers, strikers, survivors, refugees
Personality	Ambitious, authoritarian
<b>Behavioural</b>	
Benefits	Quality, economy, convenience, speed, service, non-perishable
Occasions	Seasonal, holidays, regular, occasional
User status	First time user, regular user, potential user, non-user
Attitude towards product	Positive, negative, hostile, enthusiastic, indifferent
Readiness stage	Unaware, informed, aware, interested, desirous, intending to buy

Source: Kotler and Armstrong, 2012

### Market Targeting

After segmenting the market into different groups and classes, there is a need to choose a target class. Given that no one strategy will suit all consumer or customer groups, developing specific strategies for your target market is important. Kotler and Armstrong (2012) provide four strategies for selecting your target market, as depicted in Figure 8.1. Strategies include: mass marketing, segmented marketing, niche marketing and micromarketing.



Source: adapted from Kotler and Armstrong, 2012

**Figure 8.1:** Broad range of targeting strategies from mass marketing to individual marketing

Some products can fall into any one of the above approaches depending on the objectives of the marketer. For example, in Mauritius, fresh vegetables are usually mass-marketed without any differentiation in local retail market fairs. The same fresh vegetables can be found graded and sorted in supermarkets with differentiation being mainly at the level of standardisation of the produce and in its packaging. The fresh vegetables can be minimally-processed, such as diced or grated carrots and fresh vegetables for stir-frying dishes targeting mainly working people who wish to minimise time spent in the kitchen. This is a form of niche marketing. Finally, high-income group Mauritian consumers and many expatriates and tourists look for organic vegetables which are imported and micro-marketed in targeted locations in the country.

### Market Positioning

Defined by Moschis *et al.* (1997), positioning refers to the ‘image’ or ‘impression’ about a firm or its products and what the firm expects its present and potential customers to have. It involves developing a brand image in the minds of consumers or improving consumers’ perception on the potential experiences associated with the purchase of the firm’s products or services. This could be achieved through strategic promotional activities and by carefully defining its business marketing mix. To be successful, positioning requires a good mastery of competing products sought by target markets. Besides, it is important to identify a differential advantage associated to the required benefits against the competition.

Elaborating a good positioning strategy tends to be easier when a firm supplies products only to one market segment, which consists of a homogenous group of customers possessing certain values relative to 'convenience' and or 'value' (niche marketing). In segmented marketing, it is important for a firm to assess the impact of positioning on all segments and identify factors appealing to all or most segments and position products and services based on these factors. Alternatively, the firm may decide to concentrate on profitable segments (niche marketing) or those ignored by competitors. Brand and product extension strategies such as marketing products under different names and forming alliances with other firms could be considered in a pursuit to lessen the risk of detracting from the company's image in the minds of different groups of customers.

### **Marketing Mix: 4 'Ps' of the Market**

Evoked by Goi (2009) marketing mix is a conceptual framework that was first introduced by McCarthy in 1964. The framework comprises of a combination of a firm's product, price, place (distribution) and promotion strategies commonly called the "4P's". The mix consists of the right combination of marketing activities to ensure customer satisfaction. This entails adopting a product strategy that focuses on developing goods and services, package design, trademarks, product life cycles and new product development; a pricing strategy that deals with methods of setting profitable and justifiable prices; a distribution (place) strategy that includes elements of distribution strategy include the physical distribution of goods like storage handling, transportation, and warehousing, on and off-farm; functional distribution such a wholesaling and retailing; and a promotional strategy which involves blending of personal selling, advertisement and sales promotion tools to engineer an effective communication between the firm and its actual and potential customers.

### **Institutional Arrangements in the Marketing of Agricultural and Food Products**

The importance of developing the agricultural sector and smallholder agriculture has been increasingly recognised in recent years (World Bank, 2008). There is also a consensus among many development practitioners and academics that improving market access for smallholders will lead to increased incomes and food security. (Poulton *et al.*, 2006). In view of this, there is need for development practitioners to shift their focus from supply-based to demand driven programs where farmers can produce for markets instead of trying to market what they produce. According to Minot and Hill (2007), farmers in developing countries face numerous marketing constraints including those that raise marketing costs and those that increase the risk associated with commercialisation. Additionally, smallholder farmers also face significant challenges that hinder exploitation of new market opportunities. Some of these challenges include lack of information on prices and technologies, high transaction costs and credit



constraints (Markelova *et al.*, 2009). Moreover, the new procurement systems often expect large supply volumes, favoring larger farmers. With the increasing number of free trade agreements affecting both national and international commodity markets, smallholder farmers are forced to compete not only with their local peers, but also with farmers from other countries as well as domestic and international agribusinesses. To address some of these challenges, different forms of institutional arrangements can be used. Some of these include collective action, contract farming and spot market arrangement. This section reviews some of the key marketing arrangements which have been used by smallholder farmers and their buyers.

### **Collective Action**

Collective action, as defined by Markelova *et al.* (2009) is voluntary action taken by a group of individuals to pursue shared objectives. Mwangi *et al.* (2011) reveal that collective action through formal and informal groups has been used by the poor in Africa to improve their wellbeing. This has been proven true when collective action involves more vulnerable groups such as women, ethnic minorities and the very poor. Based on Oxfam's experience in sub-Saharan Africa, collective action has the advantage of improving the position of small scale farmers in markets. This includes the delivery of inputs and training, economies of scale and increased bargaining power (Sally, 2013). Gyau *et al.* (2011) found that collective action through group marketing has the potential to improve supply chain performance through increased prices, quality (harvested and sold) and increased number of producers involved. Collective action through group marketing has been used as a strategy to strengthen linkages and build trust among farmers, traders and the private sector in some tree products value chains (Facheux *et al.*, 2012). A review of collective action in rural Ghana by Salifu *et al.* (2010), suggests that collective action is vital as a means to promote governance decentralisation and business development in rural areas. Acting collectively to improve market access can help correct some of the market imperfections such as high transaction costs, missing credit markets and coordination gaps (Hellin *et al.*, 2007; Markelova *et al.*, 2009). Farmers are more able to obtain necessary information, reach quality standards and operate on a larger scale when they pool financial and labour resources enabling them to sell on new domestic or international markets which may be out of reach to individual smallholders.

### **Contracts in Agriculture**

Agriculture contracts or contract farming refers to a prior agreement in which the farmer commits to produce a given product in a given manner and the buyer commits to buy it (Minot, 2007). The buyer often provides technical assistance, seeds, fertiliser, and other inputs on credit to the farmer and also offers a guaranteed price for the output. Put simply, contract farming is a forward agreement specifying the obligations of farmers and buyers as partners in

business (Will, 2007). Contract farming represents a potentially important way in which the private sector can play a more active role in promoting production and ceases relying on *ad hoc* purchases and can also reduce risk for both farmers and companies, thus encouraging production and facilitating access to finance (Shepard, 2011). Contract farming started over 100 years ago in Europe, America and Asia and is widespread in developed countries today. It is also on the increase in sub Saharan Africa, where 12% of the rural population in Mozambique is involved in contract farming and about 50% of tea produced in Kenya is through contracts (Prowse, 2012). However, there has been some controversy associated to contract farming. Supporters of the scheme argue that, contract farming is a solution to the problems of information, credit, and market risk that small farmers face in commercial production. They regard contract farming as facilitating the integration of small farmers into commercial agriculture, leading to income growth and poverty reduction. On the other hand, opponents see contract farming as a way for large firms to take advantage of the land and poverty of small farmers, effectively paying them less than the minimum wage and 'taking control' of their farms. There are many types of contracts depending on the obligations and intensity of the relationships. These include spot markets, marketing contracts, production contracts and vertical integration.

## Case Studies

### **Box 8.1:** Production and marketing of improved tree propagules: Case of the Nyaneck Agroforestry Nursery in the North West region of Cameroon

To be successful, each enterprise needs a marketing strategy for its products. The



**Plate 8.1:** Partial view of Nyaneck Nursery

case study presents a micro-enterprise (Nyaneck Nursery: Plate 8.1) involved in the production of improved tree propagules and the challenges faced in putting in place an appropriate marketing strategy for its products. The Nyaneck nursery is located in Kugwe Village in Momo division of the North West region of Cameroon. Due to rapid population growth in this region and the effects of climate change, most of the species which grow naturally from seedlings are threatened by over exploitation and extinction. Given that this area

falls within the savannah area, there is a high demand for improved planting materials by farmers, elites and government programs compared to the Southern region located in the humid forest zone. The Nyaneck Nursery is specialised in the production and sales of improved tree propagules of different species. Established with technical assistance from ICRAF in 2009, the nursery produced over 32,000 tree propagules of different species and propagule types in 2011 and over 20,000 in 2012. The nursery is located at about

20 km from the urban centre and faces competition from other nurseries located closer to the urban centre. Contrary to its competitors, the location of the nursery enables for the natural growth and propagation of tree species of high demand in the region such as *Irvingia* spp marcots, *Garcinia cola* grafts and *Ricinodendron heudelotii* grafts.

Though the enterprise has a very good production potential supported by a suitable natural environment for the production of improved tree propagules, it still lacks an appropriate marketing strategy necessary to position itself in its environment with respect to other competitors.

Given the environment and scale of the Nyaneck Nursery:

1. Highlight three major challenges involved with defining an appropriate marketing strategy for such an enterprise;
2. Elaborate on an appropriate market segmentation, pricing and promotional strategy that could be adopted by the nursery management with respect to competitors.

**Box 8.2:** Collective marketing of fresh vegetables and fine herbs to the hotel industry in the Eastern region of Mauritius

Collective action is portrayed as a trigger to better production and distribution practices especially amongst smallholder farmers (Plate 8.2). The following case study illustrates the attempts of a vegetables producer association to use collective marketing to target luxury hotels in the vicinity of their production sites. The project failed, but it is interesting to understand the reasons for failure.

The Eastern Association of vegetable producers in the East of Mauritius is a farmers’



association of smallholder producers of fresh vegetables mainly salad crops and fine herbs. The farmers traditionally used to sell their produce partly at farm gate and to middlemen who in turn sold the produce to nearby luxury hotels. At one point in time, the farmers decided to bypass the middlemen and opt for a collective marketing of their salads and fine

**Plate 8.2:** Small holder vegetable plots

Source: Courtesy S Hardowar, 2013

herbs directly to the luxury hotels. Although the idea of collective marketing

of salad crops and fine herbs directly to hotels was a good strategy, the project was a failure. The farmers were not used to working together and sharing revenues. This resulted in a lack of trust over time with members opting out of the collective marketing strategy. Besides, none of the farmer took the lead to add value to the salad crops and

fine herbs through some form of standardisation and grading. Luxury hotels having high standards requirements gave an opportunity to the small holders but the service provided was not reliable and sustainable. Hotels preferred to resort to their usual middlemen who can abide to the hotel requirements.

Given the advantages associated with collective action especially for small holder farmers:

1. Identify reasons which may have caused the failure of the collective marketing of fresh vegetables and herbs by the Eastern Association of vegetable producers in Mauritius;
2. Describe and discuss the key factors that favour collective action and which can be used to help the Eastern Association of vegetable producers in Mauritius to reach their objectives of adding value to their produce and targeting hotels as a niche market.

**Box 8.3:** Niche marketing of minimally-processed vegetables to the supermarkets in Mauritius

Niche marketing is a form of marketing strategy whereby efforts are focused on a particular market segment whereby the needs and wants of specific consumer groups are met and satisfied. The case study presented below illustrates the story of four individual vegetable producers who decided to add value to their fresh produce and target a specific niche market.



**Plate 8.3:** Different types of minimally-processed vegetables (Plate 8.3) in supermarkets and brought

Source: Courtesy S. Hardwar, 2013

BF Ltd is an enterprise owned by four vegetable producers in the central region of Mauritius. Before setting up this enterprise, the four producers used to market their vegetables through the vegetable auction market in Vacoas Town. Following a professional trip in South Africa in the late 1990's, one of the producers came across minimally-processed

the idea back to Mauritius.

He set up the BF Ltd with the help of three other vegetable producers and started to produce minimally-processed vegetables for supermarkets. The market segment targeted was working women who wished to have ready to cook vegetables and spend less time in the kitchen. The innovation brought by BF Ltd in terms of minimally-processed vegetables is a good illustration of a niche marketing strategy.

However, as for any innovation, it was quickly copied by competitors in the industry. Based on the above case study:

1. Identify the factors that contributed to the success of the niche marketing strategy of BF Ltd.

Discuss the advantages and disadvantages of niche marketing strategies in the agri-food industry.

**Box 8.4:** Production and sales of Palm oil-pricing strategy employed by Diamond Oil CIG LTD in Cameroon

A well-set price will achieve profits for the company; fit within the customer’s price range and support its position in the market in terms of quality, advertising and manufacturing costs compared to competitors. This case study presents a microenterprise (Diamond oil CIG LTD) involved in palm oil production and sales and the dilemma involved in setting an appropriate price for its products.

Diamond Oil CIG LTD is involved in the production, packaging and sales of three grades of palm oil. Grade-1 is the first grade of palm oil having undergone further processing, followed by grade-2 and grade-3 being the last grade. The enterprise in its sales strategy targets individual buyers and wholesalers (owners of super-markets and big retail shops) for the different products. Though the enterprise is capable of ensuring a stable production, an appropriate pricing strategy is still needed to ensure a steady supply of its products to the market.

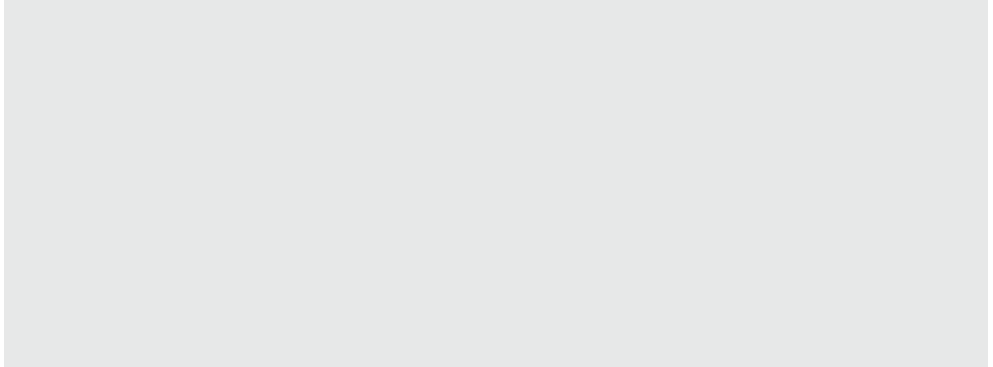
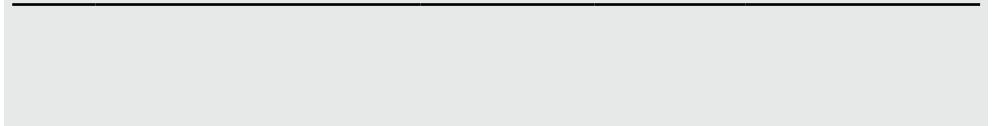
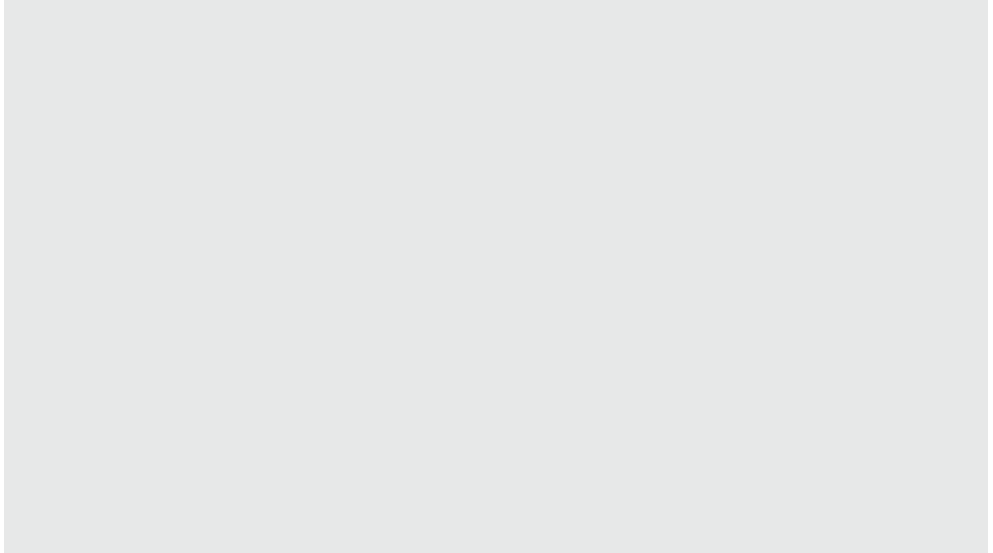
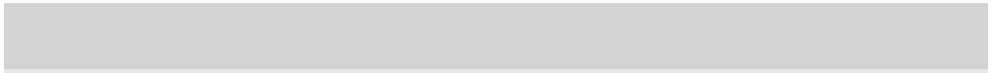
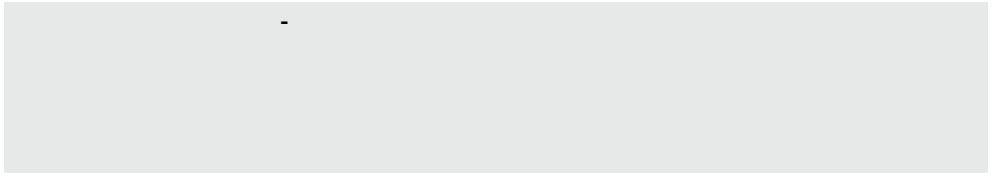
Table 8.4 shows the pricing strategy employed by management of Diamond Oil CIG LTD for its different products and clients.

**Table 8.4:** Pricing strategy of Diamond Oil CIG LTD

Oil grade	Unit cost of production (USD/L)	Competitors price (USD/L)	Min. and Max. price of Clients (USD/L)	Diamond CIG prices	
				Individuals (USD/L)	Wholesalers (USD/L)
1	1.4	None	1.0 -2.4	2.0 – 2.4	1.8 – 2.0
2	1.0	1.2 – 1.6	0.8 – 1.6		
3	0.7	0.8 – 0.4	0.6 – 0.4	0.8 – 0.6	None

1. What are the different factors considered by Diamond Oil CIG LTD in the setting of its prices?
2. If you were the manager of Diamond Oil CIG LTD, propose a selling price for grade-2 for the different customers and give reasons for your price setting.
3. If Diamond company was to specialise in the production of just one of the products (grades), which grade will you advise diamond to specialise in? Give reasons for your choice.
4. Suggest three possible reasons why Diamond Oil CIG LTD does not sell grade-3to wholesalers.

-  
1  
8  
4  
-



## Conclusion

This chapter has given an overview of the concept of marketing strategies and how they are important for an agribusiness to achieve its profitability objectives. Even though these concepts have been well explained in many marketing textbooks, this chapter aimed at contextualizing the concepts of marketing strategies in the African context by given real-life case studies illustrating both successes and failures of strategies mainly at the level of smallholders.

## Questions for Discussion

1. Discuss the concept of a market.
2. Discuss how a marketing strategy is developed?
3. How is value added to a product or service?
4. What is the principal goal of the standardisation of weights and measures for agricultural products?
5. Name the 4 sub-systems that comprise agricultural and food marketing systems as proposed by Rosson (1974).
6. In the case study on production and marketing of improved tree propagules, identify and elaborate on the type (s) of market segmentation, targeting and positioning strategies employed.
7. What are the competitive advantage(s) exploited by the Kugwe Nursery in its environment?
8. Develop a marketing strategy for a fruit juice producer and marketer in your community. Defend your marketing strategy decisions.

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## Section 2 Conclusion

The two chapters in this section highlighted the concepts involved in agribusiness marketing and strategies common in Africa. They illustrated different approaches used to study agribusiness marketing and strategies of managing the different businesses that arise at different stages of marketing chains.

Chapter 7 introduced the marketing chain concept in broad terms by defining the marketing concept, outlining factors driving innovative agribusiness marketing, analyzing approaches for explaining agribusiness marketing activities, pointing out the four marketing mix elements in any marketing activity, and providing basic tools employed in evaluating marketing activities. Agribusiness marketing was defined as performance of innovative and profitable business activities that drive the flow of agricultural products from points of initial production to points of final consumption. At each stage, business was pointed out as being shaped by four marketing elements, namely, product, price, communication and distribution. Marketing activities were classified into physical, exchange and facilitating functions performed by various players and institutions with complimentary and conflicting interests which they may champion through formation of associations and cooperatives. Lastly, the chapter highlighted approaches of evaluating marketing mix elements for efficiency, profitability, customer tracking, sales, expenses, market share and contribution to objectives. Financial statements and ratios, trends, output to input ratios and Lorenz curves were presented as common approaches of evaluating these elements. Thus, the chapter outlined basic marketing concepts to prepare readers for understanding of marketing strategies in Chapter 8.

Chapter 7 complemented Chapter 8 by bringing out strategies commonly employed for successful agribusiness marketing. It outlined strategies for raising sales and profits through product differentiation, product positioning, pricing, communication and distribution in response to the prevailing business environment. Product differentiation provided capacity to raise sales and profits through uniqueness of individual products which forms the basis for upward price adjustment among competing products on the market. Product positioning raised sales through improvements in quality, cost and place in the market. Communication improved sales through branding, packaging, and promotion that appeal to customers. Generally, the chapter outlined marketing strategies intended to sell more of products in dynamic and hostile environments.



# Section 3

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Cross cutting and  
emerging issues in  
Agribusiness



## Section 3 Introduction

The key success factor in agribusiness has moved from being in the 'brand name' to creating value across the entire agri-food chain. Current research in agribusiness shows that this sector has far reaching impacts on health, nutrition, safety, science and government, and hence on society at large. The modern key trends shaping the agribusiness sector worldwide include *inter alia*: The need for more food as the demand for world food production is expected to double by the year 2050; the production of biofuels due to its economic viability will become a greater part of the energy supply; globalisation of food to increase competitiveness, efficiency and consideration of the world as a collective resource for feeding people; the rising importance of environmental sustainability which has a direct impact on all areas of agribusiness; and the continued food price volatility with ever changing cycles of supply and demand which has important consequences for the agribusiness sector.

This section addresses cross-cutting and emerging issues in the agribusiness discipline which are of interest for all stakeholders from students, researchers, agri-food value chain actors down to practitioners. This section therefore focuses on (i) **Chapter 9 on Micro and small-scale agribusiness in Africa** which describes the nature and characteristics of micro and small-scale enterprises which make them unique in terms of management style and approaches from a developmental perspective; (ii) **Chapter 10 on Agribusiness entrepreneurship and incubation** which addresses the role of agricultural incubators in imparting entrepreneurship skills to young graduates in the agri-food sector; (iii) **Chapter 11 on Financial management** which emphasises the importance of proper financial management to enhance the ability of agribusiness managers to make better decisions; (iv) **Chapter 12 on Policy framework and private-public partnership** which puts forward the relevance of reviewing agribusiness policy, legal and institutional frameworks in Africa to position the agribusiness sector to be competitive with the rest of the regions and to transform agriculture towards increased productivity, agribusiness development, and infrastructure development. (v) **Chapter 13 on Risk management strategies for agribusiness** which puts forward the importance for agribusiness managers to be aware about risks in the agri-food sector and to acquire the necessary skills to manage those risks to meet the objectives of their enterprises; (vi) **Chapter 14 on Agribusiness research and extension** which highlights the key role played by research and extension services to promote development of agri-food value chains in Africa; (vii) **Chapter 15 on Gender and capacity development for agribusiness which allows** readers to appreciate the impact of gender issues in the African context and the way these affect agribusiness production.





## Chapter 9

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### MICRO AND SMALL-SCALE AGRIBUSINESSES IN AFRICA

Ramasawmy B.<sup>1</sup> and J. Ongong'a<sup>2</sup>

#### Summary

This chapter addresses one category of enterprises, micro and small enterprises, by highlighting their formation and operations; their development process; their contribution to economic development; their development strategies; and the challenges facing them. Micro and small-scale enterprises are characterised by easy entry; reliance on indigenous resources; family ownership of enterprises; small-scale operations; adaptive and labour intensive technology; skills learned outside formal schools and unregulated and competitive markets. This is why agribusiness activities requiring little capital outlay can easily be promoted. The growth of micro and small-scale agribusinesses is dependent on the external environment in which they operate, and in most Less Developed Countries (LDCs), the micro and small business environment is generally hostile. Due to the role of this sector in employment creation and poverty alleviation, it is very important to support it through appropriate strategies so as to encourage the creation of new enterprises. This requires a concerted effort from the government and other concerned authorities. Thus, the external policy framework for the sector's growth is discussed at the end of the chapter. Selected case studies in the African context are included to reinforce the concepts in the chapter.

#### *Micro et petites entreprises d'Agrobusiness en Afrique*

#### *Résumé*

*Ce chapitre se réfère à une catégorie de micro et petites entreprises en mettant l'accent sur comment elles se forment et opèrent ; leurs contributions au développement du secteur économique ; leurs stratégies de développement ; et les défis auxquels elles doivent faire face. Les micros et petites entreprises se caractérisent comme suit: très peu ou pas de barrière d'entrée; une dépendance sur des ressources endogènes au secteur où elles opèrent ; gestion familiales des entreprises ; opérations à petites échelles ; utilisant une technologie ayant besoin d'une main d'œuvre intensive ; les compétences utilisées sont dans la plupart des cas acquises en dehors des circuits formels de formation ; et des marchés compétitifs et non régulés. Ces caractéristiques font que les activités en agrobusiness qui ne requièrent pas un*

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*investissement conséquent peuvent facilement être mises sur pied. La croissance des micros et petites agro entreprises dépendent sur l'environnement externe où elles opèrent, et dans les pays en voie de développement, cette environnement leur est très souvent hostile. En s'appuyant sur le rôle important joué par cette catégorie d'entreprises dans le secteur de la création d'emploi et l'allègement de la pauvreté, il est plus que nécessaire de mettre en œuvre des stratégies appropriées pour encourager la création de nouvelles micros et petites agro entreprises. Cela et demande un effort concerté au niveau du gouvernement et des autorités concernées. C'est ainsi qu'un cadre visant un cadre sur la politique externe pour promouvoir la croissance de ce secteur est discuté à la fin de ce chapitre. L'apport des études de cas dans le contexte Africain permettent de renforcer les concepts mis de l'avant dans ce chapitre.*

### **Introduction**

Micro and small-scale agribusinesses can emerge anywhere along the agrifood value chain: at the levels of production, distribution, provision of agricultural services and inputs, or at agro processing, amongst others. Many micro and small-scale agribusinesses start-ups, in low-income regions, can begin at home with no defined market channels and sales targeted mainly in the neighborhoods via a road stall or a local market fair. These types of enterprises, according to Fellows and Rottger (2005), are generally characterised by labour-intensive manual production or distribution activities. Besides, there is a shortage of finance for investment in equipment and assets. Furthermore, there is no consistency in the quality of products and/or services. Different countries have different definitions for micro and small-scale enterprises. Some definitions are based on number of staff employed, annual turnover while others based on level of investment in these enterprises. Micro and small-scale enterprises are present mainly in developing countries and do not usually require elaborate business management techniques that are used by medium and large-scale enterprises, but simple procedures to manage their production activity. This chapter, as part of the Agribusiness textbook, therefore aims at focusing attention on one category of actors, the micro and small-scale-agribusinesses in developing countries, and identifying their real business management needs to avoid a one-size-fits-all business management approach. The rationale behind this chapter is that emerging economies encourage entrepreneurial activity as a measure to empower lower-income groups of the society in the short term, and in the long term. Hence successful enterprises can be provided with assistance for scaling up into larger and more efficient enterprises. However, scaling-up also entails imparting the right business and management skills to the enterprise owner/manager so that the latter is adequately equipped to tap opportunities available in the value chain in which he/she operates. A micro or small-scale enterprise wishing to scale up also needs to produce according to regulations and in a sustainable way; to investigate into product development and innovation;

and to create a positive and lasting impact that will at the same time meet the profit-maximising objective of the manager and as well meet the needs of the consumers. This chapter contributes to the field of agribusiness management by providing contextualised information, based on real-life case studies of micro and small-scale agribusinesses in developing countries in Africa. This chapter will be useful to students in agribusiness, to policy makers, and local and international Non-Governmental Organisations (NGOs) working with micro and small-scale agribusinesses.

### **Learning Objectives**

The main objective of this chapter is for learners to understand that micro and small-scale agribusinesses as a business sector have a different contribution to the economy of a country and that management approaches as well as developmental approaches need to be tailor-made so as to address the needs of this category of enterprises. More specifically this chapter aims at enabling learners to:

- Analyse the business environment that impacts on small and micro enterprise activities;
- Describe the characteristics and key features of micro and small-scale enterprise;
- Explain the role of micro and small-scale enterprises in economic development;
- Find solutions to the challenges facing micro and small-scale enterprises in LDCs;
- Use contextualised African case studies to reinforce the learned concepts.

### **Learning Outcomes**

At the end of this chapter, learners are expected to have achieved the following learning outcomes:

- To distinguish micro and small-scale enterprises in terms of their characteristics;
- To discuss the importance of the informal agribusiness sector for the economy of a country;
- To assess the approaches used for enterprise development;
- To propose strategies for the emergence of micro and small-scale enterprises;

To identify the challenges facing micro and small-scale agribusinesses in Africa;

To solve real-life problems associated with micro and small-scale agribusinesses through a critical analysis of case studies provided in this chapter.

### **The Nature of Micro and Small-scale Enterprises**

Micro and small-scale enterprises can be categorised in different ways depending on countries concerned. However, the main criteria used are based on one of following indicators: number of employees or annual turnover. In Kenya, for example, the sizes of the micro and small-scale enterprises are usually determined by the size of the work force rather than the capital invested. This is because, in Kenya, enterprises employing fewer than ten employees are not usually officially listed and their capital investment figures are hard to ascertain. Apart from this, the definitions and data are hard to find since small enterprise studies are mainly confined to the productive industries (Ongong'a, 2000). In other countries like Mauritius, a small-scale enterprise is defined as an enterprise with an annual turnover not more than MUR 10 million (around USD300, 000 per year).

Micro and small-scale enterprises in urban centers tend to cluster depending on the nature of the business activities done. These types of enterprises serve as the easier option for income generation by both the salaried and unemployed persons. Hence it is observed in developing countries that even people employed in a full-time job can have a side or part-time micro or small-scale enterprise to add to their household incomes by using their skills and knowledge. Usually micro and small-scale businesses operate within the margins of regulations and laws. They are characterised by frequent business closures or relocations, hence they are usually categorised as part of the informal business sector.

### **Formal and Informal Sectors**

The informal sector, sometimes known as the “underground economy” by industrialised countries, has been a subject of increasing interest for scholars and policy makers interested in addressing the challenges facing developing countries. This interest can be traced as far back as the beginning of the 1970s as there were increasing numbers of individual workers and firms doing business outside the official, “formal” economy. The International Labour Organization (ILO) was a pioneer in addressing the informal sector more than four decades ago (Bangasser, 2000). Indeed, the initial study, by the International Labour Organization (ILO, 1972), saw the sector as essentially dysfunctional, a problem that needed fixing. This view was given when the planners and financial donors to the third world countries thought they could initiate industrial and economic development through their development programmes. However, a new

attitude which favored this sector was developed when it was apparent that the governments of the third world were heading nowhere. This new attitude saw the informal workers as a potential workforce in development.

The informal sector has been described by the International Labour Organization (ILO) as “a large group of enterprises characterised by unobstructed, easy entry into markets; use of local resources; family ownership; small-scale operations; use of appropriate technology with high labour intensity; reliance on training provided outside the formal education system; and operation in unregulated, competitive markets”. This definition brings to light the nature of informal as contrasted with formal sector (ILO, 1972).

The informal sector is typified by:

- Easy entry and exit;
- Reliance on indigenous resources;
- Family ownership of enterprises;
- Small scale operations;
- Adaptive, labour intensive technology;
- Skills learned outside formal schools;
- Unregulated and competitive markets.

In contrast to above, the formal sector has:

- Difficult entry and exit;
- Frequent reliance on overseas resources;
- Large scale operations;
- Formally acquired, often expatriate skills;
- Markets protected by tariffs, quotas, and trade licenses.

Due to the fact that developing economies have excess labour, lack of capital and skilled manpower, the informal sector with its characteristics would help in generating incomes and jobs through employment creation. Because of the potential of this sector to create employment, the ILO mission proposed to remove obstacles like (i) discriminatory credit policies, (ii) harassment by the state, and (iii) limited access to electricity, permanent buildings, and other infrastructures. Box 9.1 gives an overview of the informal agribusiness sector in Kenya.



**Box 9.1:** The informal agribusiness sector in Kenya

In Kenya, the informal sector famously known as the *Jua Kali* (Harsh sun in Swahili) small enterprise has been given recognition only twenty years after its identification by the ILO in 1972. The government of Kenya, in the Sessional Paper No. 2 of 1992, on small enterprise and *Jua Kali* Development in Kenya (Republic of Kenya, 1992) sets out a comprehensive policy frame work meant to enhance the following:

provision of support to individual entrepreneurs and small-scale enterprises;

Helping micro and small-scale enterprises to upgrade into medium sized enterprises;

Facilitate access to finance;

Provide a platform for exchange of information;

Provide a conducive policy environment through appropriate regulatory measures.

Before the release of this powerful Sessional Paper, the government of Kenya had earlier in its sessional paper No. 1 of 1986, on economic management for renewed growth and the sixth National Development Plan (1989-93), highlighted the sector as a primary means of strengthening Kenya's economy.

The sessional paper No. 2 of 1992 (Republic of Kenya, 1992) laid emphasis on an enabling policy environment with the Government as a facilitator and the private sector as a source of innovation. The paper also put forward the importance of access to credit facilities, training sessions in management, support programs on marketing and extension services. It was hoped that the cumulative effect of these strategies will create an entrepreneurship culture in Kenya. The sixth National Development Plan (1989-93) targeted new employment creation over the five-year period, 1989-1999 to be 1.9 million out of which 31 percent or 587,000 jobs were expected to be created in the small scale and *Jua Kali* enterprise sector (Republic of Kenya, 1989).

The Kenyan Government's sessional paper No. 2 of 1996 on Industrial Transformation to the Year 2020 (Republic of Kenya, 1996) highlighted the role of informal sector in the country's industrialisation process. After acknowledging the role of the sector, the paper expressed concern over the constraints that still restrain the development of the sector. These were as follows: access to finance; access to land; access to training and technical support; and, access to technology and information. It was hoped that when these constraints are eliminated, then the sector will realise its two expectations viz. (i) expansion in their numbers, and (ii) enabling the transformation to larger scale concerns.

The chapter on industrial transformation strategies concludes by stating that the small-scale and *Jua Kali* enterprises have the potential to form one of the main pillars of industrialisation and be major source of employment opportunities. Given an appropriate environment, the Kenyan small-scale and *Jua Kali* enterprise sector can make a significant contribution to export as has been experienced by certain East Asian Countries, like Taiwan. The Government of Kenya, through this Sessional Paper is committed to "providing all necessary assistance while keeping in mind that an overly interventionist policy can threaten the very strength that creates prosperity" (Republic

of Kenya, 1996). The Sessional Paper then gives the last statement that it is essential, therefore, that the mechanisms proposed to create full dialogue between government and the private sector, fully include the small scale and *Jua Kali* enterprise sector so that a positive balance between positive support and negative intrusion can be established.

### **Study Questions**

Why did the Government of Kenya decide to give importance to small-scale and *Jua kali* enterprises in the country?

What measures were taken by the Government of Kenya play to promote small-scale and *Jua kali* enterprises in the country?

What are the potential contributions of small-scale and *Jua kali* enterprises on industrialization in Kenya?

The term economic development is frequently used by economists, social workers and government policy makers while addressing problems of poverty. Its meaning is frequently linked with the high standard of living and well-being of the population. The people of less developed world like Asia, Latin America and Africa are embarking or have been embarking on the quest for economic development. All these people desire the benefits which development has brought to the more advanced countries like Europe and the United States of America. These benefits include: better education; health and housing; the substitution of mechanical power for human toil; industrial facilities, processes and products; improved transportation and communication; diversification and increased economic stability; prestige, power and status in the international community. When economic development is looked at in this way, it leaves the economic planners with a lot of worry as to how “soon” the less developed countries can guarantee the citizens of these benefits.

Before going into deeper analysis of the economic development and its benefits, we need to ask ourselves “what” is simply meant by the terms “economic development”, “underdevelopment”, and “industrialisation”; and how these three terms apply to developing economies vis-à-vis the entrepreneurship development.

The term development basically means “a process of change”. But at the same time it is not easy to define the phrase “economic development”. It is even easier to talk of what is not economic development rather than what economic development is. The phrase economic development however, should not be equated with the fruits of development stated above. Economic development focuses itself on one aspect and one dimension of general development as discussed in the following section.



## **Informal Sector and its Contribution to Economic Development**

Baerwald (1969), defines economic development as “a move towards even more efficient and differentiated methods of supplying people with the requirements for survival and improvement”. This definition makes it clear that peoples’ requirements for survival and life improvements are the focus for any economic development activity. “Good living” which is mostly talked about in developed countries is just one fruit of this process. On the contrary, underdevelopment can be viewed as the antithesis of development. However the definitions of underdevelopment usually single out some particular aspects of development to compare development and underdevelopment. Here Buchanan and Ellis (1955), took the level of consumption as the basic characteristic of differentiation of development from underdevelopment. Others like Staley (1954) stress on chronic mass poverty which is, as a result of temporary misfortune, a sign of underdevelopment. Other writers (e.g. Chiamogu *et al.* (2012) use the per capita income level to distinguish between the developed and underdeveloped countries.

### **Micro Enterprise Sector Development Approaches**

There are two common approaches used in developing the informal sector after realising its role in a country’s industrialisation process:

These approaches by proposed by the ILO (1972) are:

The benign relationship approach; and

The subordination approach.

#### ***The Benign Relationship Approach***

This approach is proposed by the ILO to developing economies as a better method of monitoring the informal sector. The ILO’s conviction that the informal sector is capable of creating employment sees this benign relationship approach as quite effective. According to Tokman (1979), the informal sector is integrated and complementary to the rest of the economy and can generate surpluses given a conducive policy environment. The relationships between the informal sector and the rest of the economy are therefore benign. The informal sector in this relationship accommodates those people who cannot be able to secure jobs in the formal sector. The sector generally survives because within it, some people move to the formal sector after acquiring adequate skills. This type of sector survives because it is labour-intensive.

Under the ‘complementary’ approach, the informal sector is seen as highly integrated with the rest of the economy. The informal sector exports much output to it and imports a lot of consumer and producer goods from it. These two sectors do not conflict with each other since it is assumed that they produce distinct products serving different customer groups. Due to this relationship

between these sectors, the ILO's approach has tended to call for policies to intensify this complementarity (e.g. changes in these sectors' input-output coefficient can favour the informal sector through increased sub-contracting and better market outlets for its products). The fact that the informal sector operates closely with the formal sector makes it possible for the informal sector to harness the opportunities arising from this closeness or complementarity.

One notable benefit of the complementarity is that the informal sector becomes, according to House (1981) "a reservoir of dynamic entrepreneurs". In the views of House (1981), the sector can create employment and income, especially given that it uses labour-intensive technologies.

### ***The Subordination Approach***

The subordination approach supporters fall under the critics of the 'benign relationship' approach. The subordination approach supposes that the formal sector subordinates the informal sector and predicts two outcomes: the informal sector will either be marginalised or exploitatively integrated into the capitalist system. The marginalisation thesis, which is generally associated with Quijano (1974), argues that the pattern of accumulation in peripheral capitalist countries has rendered informal activities increasingly dysfunctional or, at least slightly functional. Because the formal sector is capable of producing high quality products at lower costs, they can flood the market with these products. This in turn leaves the informal sector with no market at all.

In the case of Kenya, the informal sector needs a lot of direct interventions by both the local and international communities due to the role it plays in the country's economic development.

### **Strategies for Small and Micro Enterprise Development**

Financial and physical facilities are not the only crucial inputs in enterprise development. There are other inputs important for the development of an effective enterprise development model.

The following are some enterprise development strategies:

Personality based strategy;

Environmental settings' based strategy.

**Box 9.2:** illustrates the environmental-based strategies used in Kenya for the entrepreneurship development programmes.

This example discusses the external policy agenda relating to the micro and small enterprise development since its official recognition by the Kenyan Government. It covers the external and internal policy framework so far formulated and tried out.

There has been a renewed interest by both the external agencies and national government in the informal economies of Africa in the late 1980s and early 1990s. This is opposed to the negative view and neglect the sector had experienced in the early years. Both, actual and proposed, external interventions are characterised by much greater certainties about the new order to be secured from a wide development agenda for the sector. There is an effort to integrate the informal sector with the other sectoral policies through the comprehensive national policies, by various governments.

Since there has been a long standing academic interest in the informal economy in Kenya for over 20 years, it becomes necessary to look at these policy agenda. This will help in suggesting the possible ways of promoting entrepreneurship development here. Over the last ten years, the government has explicitly shown its commitment to the Sessional paper No. 2 of 1992 on small enterprise and *Jua Kali* Development in Kenya (Republic of Kenya, 1992). Also, a significant number of bilateral, multilateral and international non-governmental organisations have informal *Jua Kali* projects and programs high in their promotional programmes.

### 1. External Policy Framework

This policy framework in Kenya consists of reordering the environment and infrastructure, and re-orienting education, training and technology.

#### a) Re-ordering Environment and Infrastructure

There has been a great deal of policy attention given to the infrastructure for small and informal enterprises. In the earlier years, i.e. before 1985, the informal enterprise sector was seen as a nuisance by the town council authorities. The sector was seen as irregular, inconvenient and illegal in some parts of the towns. But due to a sudden interest in the sector, there has been a number of *Jua Kali* shades constructed by the government in different towns and cities following a direct order by the President of the Republic of Kenya. The government has also laid out, in its plan for the sector, site and service schemes for a small number of the main towns. Though there is an emphasis on shade (versus 'hot sun' – the literal meaning of *Jua Kali*), security of tenure and premises, only few enterprises will be benefiting, considering the vast number of enterprises engaged in the sector.

But this effort should be appreciated considering the previous implied policy of negative and discouraging attitude. A look at the major towns and cities reveals a large number of *Jua Kali* enterprises which are unshaded and whose work spread beyond the symbolic formalisation into the formal economy through government sheds.

The donor's interest in supporting the infrastructure is quite notable. The donor interest here is to make available infrastructural facilities in appropriate places in ways that do not simply confer a market advantage on those who benefit as compared to other artisans in the same town or city. There is an effort to offer infrastructural facilities equally to both, urban and rural centers, with regard to market access to avoid rural-

urban migration. This rural–urban migration would only occur when the enterprise in Nairobi and other bigger towns get better access to markets as opposed to their rural counter-parts.

### b) **Re-orienting Education, Training and Technology**

There is a large range of agency initiatives spanning entrepreneurship development, appropriate technology, management training, income generation and such like. At the most general level of preparations for micro-enterprise, there is a marked contrast between the conviction of the World Bank that the best foundation for more productive wage and self-employment is better basic academic education at primary and junior secondary, and that of many countries, including Kenya, which have sought to re-orient their entire basic schooling to make them more vocational and more explicitly related to self-employment and business development. The World Bank’s conviction is that “a few hundred hours or craft training do little to help youth establish their own enterprises” (World Bank, 1991).

On other levels, the World Bank has criticised the structure of the formal vocational training. They argue that this structure as offered by governments and non-governmental bodies has been a little sensitive to the market, and scarcely at all to the huge training needs of the enterprise sector. Kenya has at least acknowledged the need for the re-orientation of the training towards small businesses and entrepreneurship. In Kenya, the policy of getting technical and vocational training at the secondary school level to “play a crucial role in developing artisans, managers, and entrepreneurs for the informal sector in both rural and urban areas”, has been in place since 1986 when the informal sector emerged as one of the key strategies in Economic Management for Renewed Growth (Government of Kenya, 1986).

## **2. Technological Developments**

Various donors have developed different strategies for the development of the informal sector. The donors have the conviction that strong technological development in the sector would improve the product quality thereby improving on their marketing.

UNDP/UNIDO started their project for demonstration and training in technology for the *Jua Kali* after the sector’s recognition by Sessional Paper No. 2 of 1986 (Government of Kenya, 1986). The project targeted the *Jua Kali* settlements without unduly upsetting their existing entrepreneurship, ingenuity, initiative and social habits. They avoided the use of sophisticated or even standard technology by using the usual workshop machinery etc. a hope that an artisan would graduate from manually-operated *Jua Kali* to manually-operated machine tools and equipment was at the back of the minds of the project planners. The project stressed that, machines and production techniques should be so designed that new activities will act as a stepping stone to the existing *Jua Kali* enterprises.

A conception of the informal economy as having a certain kind of order, but one that is very different from the formal sector, with which the project hopes to link the *Jua Kali* with, is apparent in this project. But this conception may be wrong since there is a lot of dynamism within the *Jua Kali* sector and that this is already intimately connected to the formal industrial sector. This should have been acknowledged by the project formulators at their formulation stage. The project assumed that there was almost a whole layer of technologies missing in the informal economy. The program was wrong in assuming that *Jua Kali* artisans had considerable expertise but in very narrow fields.

The programme formulators were not aware of the *Jua Kali* limitations and dreams. The British American Tobacco Supplement on *Jua Kali* skills exhibited at the Western Provincial *Jua Kali* exhibition should have been read by these programme formulators.

Another technological development programme was run by the Apt Design and Development (UK) for *Jua Kali* metal workers. This programme targeted experienced *Jua Kali* with the aim of having them design and build their own Apts local counterpart organisation, “properly designed, well-engineered, fully field tested and locally available at an affordable cost” (ApT Design and Development, 1991). Another project under technological development was that of the carpentry hand tool making projects of the Intermediate Technology Group, Voluntary Service Overseas (ITDG/VSD) (ApT Design and Development, 1991). These projects were designed around the assumption that locally made wooden hand tools could find a niche in the *Jua Kali* sector because of their lower cost and ease of repair.

The problem with this project is that it sticks to promoting the hand tool making for carpentry for the surrounding youth polytechnics even in the wake of electrically powered *Jua Kali* wooden lathes in many of the larger towns. It is doubtful whether the promotion of traditional hand used machines can promote the country’s entrepreneurial development.

### Study Questions

1. Discuss on the evolution of the *Jua Kali* project in Kenya
2. What are the factors that can favour rural-urban migration?

Analyse the role played by formal vocational training in promoting the informal entrepreneurial sector in Kenya.

## Challenges Facing Micro and Small-scale Agribusinesses in Africa

There are several challenges facing micro and small-scale agribusinesses in the African context. First of all, Governmental policies in many cases are not supporting the growth of the informal sector in general. In Kenya, for example, the inherited colonial city laws defined these micro enterprises as dangerous activities posing danger and insecurity to the towns. Due to this, the municipal “*askaris*” have used the law as a source of corruption and harassment to those running these activities. In terms of access to finance, the informal sector has been discriminated by the formal financial institutions due to lack of permanency or certificate of incorporation to access loans. The sector has been relying on informal financial sources as owners’ savings or friends’ donations. This has persisted in most countries without realisation that the sector is the breeding ground for small and medium enterprises. In the Republic of Kenya, it is more and more recognized that micro and small-scale enterprises need to be promoted in view of their role in achieving national goals such as creation of new jobs, addressing poverty issues and maintaining an equilibrium between sectors and sub-sectors (Mutai, 2011).

The entrepreneurship culture in a country can also hinder the emergence of micro and small enterprises. Hence in some African countries, the setting up of one's own enterprise is not seen as the best alternative by the youth and educated/trained persons, but as a last resort for economic engagement. The people's attitude seems to favour a long standing practice for wage employment. In Kenya, the government, through education curriculum is trying to address this challenge by introducing the business and entrepreneurship course in the new curriculum which was introduced in 1983/84 (Gudo *et al.*, 2011). In the Republic of Mauritius, the government is also intervening at both secondary and tertiary education levels by promoting the entrepreneurial culture amongst the youth and promote enterprise creation and innovation as an alternative to wage employment (Republic of Mauritius, 2015). The challenge is still real despite this move.

Large enterprises are generally hostile to the small and micro enterprises. They see these enterprises as their competitors rather their partners. This hostility has created a lot of unnecessary competition leading to the death of the small and micro enterprise due to their weak bargaining power. Box 9.3 narrates the case study of a woman small entrepreneur, engaged in home-based pickles, in the Republic of Mauritius. She has a home-based pickles business. The challenges faced by the micro-enterprise are explored.

**Box 9.3:** Case Study of the challenges faced by an informal micro agribusiness involved in food preservation in the Republic of Mauritius

This case study illustrates the role of women entrepreneurs in the informal agribusiness sector and the challenges they face with respect to the management of their enterprise, access to finance, competition with larger enterprises and sustainability of their enterprise in the long term.

Mrs. Santa R is a Mauritian woman entrepreneur who started a home-based pickle making micro enterprise in the late 1990's. Santa was an unemployed housewife, married to a government employee and has three children. With the high cost of living in Mauritius, Santa started to follow courses offered in women community centres in her local neighbourhood and there she became aware of the different home-based activities that could help her earn some money to contribute to the household budget. Being a keen learner, she was eventually selected as part of a group of women who were sponsored by the Mauritian government to follow a one-month training programme in food production in Greece. On her return to Mauritius, she created her own home-based enterprise and specialised in the production of pickles from various raw materials such as olives, mangoes, apples, star fruits (Figure 13.1). She also produced chili pastes and crystallised fruits.



**Figure 9.1:** Pickled vegetables at micro scale level of production  
(Source: Mrs. R. Santa; April 2013)

The main objective of Mrs. Santa behind the setting up of her enterprise was to contribute to the household expenses. However, at first she was discouraged as the returns from the sales of pickles did not cover the expenses incurred in purchasing the raw materials (vegetables and fruits) and other inputs. Mrs. Santa then started to look for different strategies to reduce her production costs such as growing her own fruit trees and some vegetables in her backyard, as well as relying on her brother in law for fruit collection in different parts of the country at very cheap prices. The pickles were prepared in Mrs. Santa's kitchen and packed in glass jars that are labeled with a sticker showing the name of the enterprise, the ingredients used and the shelf life of the product. This label was developed after a number of years of operation when Mrs. Santa realised the legal implication of food hygiene standards after having followed courses on Hazard Analysis Critical and Control Points (HACCP), hygiene and food science.

The vegetables and fruits pickles are sold in the neighbourhood based on a mouth to word publicity that gives rise to occasional orders from individuals for their own consumption or for sending to relatives abroad, or even larger orders for events such as weddings and religious functions. Sometimes Mrs. Santa gets the opportunity to promote her products in trade fairs for local entrepreneurs. She does not want to sell her products through retail outlets as sales can be very low given the number of competitors in the same line of the business. She has defined a pricing strategy of selling at a lower price than commercial and industrial pickles manufacturers. Mrs. Santa won the first price in a competition of pickle making at national level organised by the 'Women Entrepreneur Council'. Based on the experience of Mrs. Santa, some women community centres employ her on a part-time basis as an instructor to share her knowledge about vegetable and fruit preservation with other potential women entrepreneurs. Mrs. Santa is also involved in a number of social activities and she takes the opportunity of making her products known through donations.

Being a micro enterprise, Mrs. Santa faces a number of challenges and constraints such as access to finance. Since she has started her home enterprise, Mrs. Santa has never resorted to a loan. She feels that this would be the case if she plans to increase the size of her enterprise. However, none of her children are interested in taking over. So, for the time being this enterprise is just a side business that is keeping Mrs. Santa busy but

may not be meeting the initial objective of profit-making.

### **Study Questions**

1. What according to you could be done by Mrs. Santa to better manage her enterprise and increase her profits?
2. Mrs. Santa needs to invest in product development to meet the needs of consumers. What according to you could be the new types of products that Mrs. Santa could produce in order to meet her profit-maximising objectives and meet the needs of her clientele as well for a sustainable enterprise?

Mrs. Santa wishes to scale-up her enterprise in the long run. What would be the essential business and management skills she will require in order to tap opportunities in the value chain in which she operates?

### **Conclusion**

This chapter has given an overview of the important role played by micro scale and small enterprises in the agribusiness sector. There is a sharp contrast between the formal and informal sectors of the economy in terms of their access to support services, financial services and the marketing of their products and / or services. In the context of developing countries as is the case for most African countries, informal agribusiness enterprises need to be given due consideration by local authorities as they represent a source of income for households and contribute to poverty alleviation and empowerment of women in many cases as well. These issues have been described and illustrated in this chapter through case studies in the African context.

### **Questions for Discussion**

1. Discuss the concept of an informal business sector.
2. Differentiate between micro, small-scale, medium-scale and large-scale enterprises.
3. Explain how the informal agribusiness sector contributes to the economic sector of a country.
4. What are the challenges faced by micro and small agribusinesses in developing countries?
5. Discuss the most appropriate approach in developing a new micro agribusiness set up in a less developed economy.



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## Chapter 10

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### AGRIBUSINESS ENTREPRENEURSHIP AND INCUBATION

Aucha J.<sup>1</sup> and B. Ramasawmy<sup>2</sup>

#### Summary

Agribusiness has stood out as one of the leading contributors to the economic development of Africa. Training in agribusiness is increasingly tailored to produce graduates that can be employers as well as serving effectively in the private sector. For agribusiness graduates to effectively create jobs, practical training in entrepreneurship is needed. Agribusiness incubation is the process of nurturing business startups by providing an enabling business environment and practical guidance to start a successful enterprise. This chapter provides practical cases on the experiences in entrepreneurship and incubation, coupled with case studies that enable readers to relate the contents of this chapter with enterprises they are involved in. This chapter is useful to students learning agribusiness, lecturers, agribusiness entrepreneurs and development agencies involved in agribusiness projects.

#### *Entrepreneuriat en Agrobusiness et incubation*

##### *Résumé*

*L'agro business est reconnu pour être un des grands contributeurs au développement économique de l'Afrique. La formation en agro business est de plus en plus taillée sur mesure pour produire des diplômés qui peuvent être à la fois des employeurs potentiels et aussi bien être des professionnels dans le secteur privé. La formation pratique est primordiale pour produire des diplômés en agrobusiness ayant les capacités à créer de l'emploi. Les incubateurs d'entreprises offrent un soutien aux nouvelles entreprises en leur offrant un environnement facilitateur de même que des applications pratiques pour favoriser le succès des entreprises. Ce chapitre offre des exemples de cas pratiques sur les expériences dans l'entrepreneuriat et l'incubation ainsi que des études de cas qui permettront aux lecteurs de faire le lien avec les entreprises avec lesquelles ils sont déjà familiers. Ce chapitre sera utile aux étudiants en agro business ; aux enseignants-chercheurs ; aux agro entrepreneurs ; et aux agences de développement engagées dans les projets en agro business.*

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## Introduction

Agribusiness is emerging as a fast growing sector with capacity to trigger economic development of Africa (AFDB, 2012). This is largely pegged on the continent's dependence on agriculture as the engine for growth. In Kenya for instance, the Kenya National Bureau of Statistics (KNBS) Economic Survey of May 2013 indicated that Kenya's Economy grew by 4.6% in 2012, a marginal improvement from the 4.4 level recorded in 2011. This growth was largely driven by agriculture that had a growth of 3.8% contributing to 17.6% of the overall Gross Domestic Product (GDP). This was the highest compared to other sectors such as the retail sector (15.2%) and the Transport and Communication sector (10.8%).

Despite the growth in the economy, job creation dropped from 5.8% in 2011 to 5.5% in 2012 due to the fact that imports were more than exports. The trade deficit between imports and exports increased to Kenyan Shillings (KES) 856.7 billion compared to KES 788.1 billion in 2011. 89.7% of the jobs (592,000) created were in the informal sector and a paltry 11.3% (68,000) jobs being in the salaried sector. There is need to design wealth creation models in favor of salaried for the population to be able to have increased access to social services such as medical cover and membership to pension schemes (Entrepreneur, 2013).

In Mauritius, the situation is more or less the same. According to the Blueprint for a 'Sustainable Diversified Agri food Strategy' for Mauritius 2008-2015, it was estimated that the agro-industrial sector employed around 10000 people and contributed to only around 2% of GDP (MAF, 2008). According to the Practical Guide for SMEs (SMIDO, 2002), the total value added at factor cost generated by the sector amounted to 2.5 billion Mauritian Rupees (MUR) in 2000. However, as a percentage of total GDP, the contribution of the agro-industrial sector experienced a gradual decline from 3.1% in 1996 to 2.3% in 2000. Exports of agricultural products rose from 812 million MUR in 1996 to reach 1172 million MUR in 2000, whilst food imports reached 3.8 billion MUR. Based on these figures, Mauritius was considered as a net importer of food products. The food import bill reached 25 billion MUR in 2012. Agricultural diversification presents a lot of opportunities for the local agricultural producers and emerging entrepreneurs. The gradual decline in the market price of sugar due to the erosion of preferences together with the advent of the Economic Partnership Agreement (EPA) in January 2008 has led to a new class of entrepreneurs in the agribusiness sector (Ramasawmy and Hardowar, 2012).

This scenario points to the need for Africa to focus on agribusiness that looks at the entire value chain and not just focusing on agriculture that is largely looking at production. It has indeed been shown that there is 6 times growth potential by 2030 from optimal baseline levels of 2012 in the processing and packaging sector compared to 3 times growth for the production sector.

## **Learning Objectives**

This chapter aims specifically to:

Explain the contribution of agribusiness activities to economic development;

Facilitate the readers' understanding of terminologies related to entrepreneurship and incubation;

Explain how the incubation process supports entrepreneurial activities.

## **Learning Outcomes**

By the end of this Chapter, the reader will be able to:

Define entrepreneurship and incubation;

Outline steps to successful entrepreneurship and incubation;

Describe the process of incubation and how it supports entrepreneurship;

Recognise the need for institutions teaching agribusiness to establish their own incubators or be linked to existing incubators;

Facilitate establishment of incubators and provide mentoring services to entrepreneurs given resources and an enabling environment.

## **Why Entrepreneurship and Incubation?**

Human capacity development to address the challenge of wealth and employment creation in Africa is pivotal to enhancing and sustaining this growth in agribusiness. The Africa Commission (2008), having deliberated on this issue at length, concluded that African universities do not address the issue of entrepreneurship education in an adequate manner as many graduates remain unemployed for a long period of time and many small businesses do not have the required trained human resources that could address issues such as innovation. There is indeed a demand for entrepreneurship education as put forward by Fayolle and Lassas-Clerc (2006). According to these authors, there are three sources of demand for entrepreneurship education. The first one is related to governmental policies to encourage the creation of job for economic growth; the second source of demand comes from learners themselves who wish to set up their own company; and the third source relate to employers in the private sector who are looking for entrepreneurial skills in their future employees. African universities have tried to remediate to the low level of entrepreneurship education by strengthening the link between research, university education, with



respect to agriculture and natural resources and agribusiness. As an initial step, entrepreneurship has been mainstreamed in most courses offered at tertiary level. The approach taken, however, focuses more on fundamental aspects of entrepreneurship rather than the practical aspects. Incubation has emerged as one of the strategic initiatives to enhance practical entrepreneurial training in agribusiness.

Business incubators in this book are based on the definition by the National Business Incubation Association (NBIA) and refer to frameworks that “nurture the development of entrepreneurial companies, helping them survive and grow during the start-up period, when they are most vulnerable.” (NBIA, 2015).

The African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) has been undertaking an incubation programme under UniBRAIN (Universities, Business and Research in Agricultural Innovation) and this chapter covers practical aspects of incubation and entrepreneurship in agribusiness. The content captured here is useful for students learning agribusiness, lecturers teaching agribusiness and development facilitators keen on implementing enterprises in agribusiness.

### **Challenges of Business Start Ups in Africa**

The business startup challenges relating to Micro, Small and Medium Enterprises (MSMEs) in Africa and other developing nations differ greatly from those of developing nations including Europe and USA. Due to lack of an enabling environment that would result in a thriving ecosystem for small businesses to start, develop and mature, Africa accounts for only 30% survival rate for business startups in the first year, compared to 71.3% survival rate in 3 years in the UK (OECD, 2002) and 69% in the US (SDA, 2004). The benefits of entrepreneurship for development and economic growth have been widely highlighted.

A wide array of challenges faces startups and needs to be resolved for the startups to graduate to successful businesses, hence the need for incubation. These challenges include lack of information, awareness and resources to access business opportunities, limited exposure, interaction, information sharing and networking, lack of business support and advisory services, lack of awareness and use of emerging technologies, impact of the challenges resulting from liberalization and globalisation, and other cultural and regional factors that may affect business start-up specifically in the region. Business incubation is among the ways adopted to manage these challenges and reduce the high failure rates of startups.



## **African Agribusiness Challenges**

Agribusiness development is vital for the overall economic development of many nations. The work of Gunnar Myrdal, Nobel Laureate in Economics, indicates that it is in the agribusiness sector that the battle for long-term economic development will be won or lost. Yet, African agribusinesses face an array of challenges which include the following:

Markets are dominated by foreign brands and there is very little local value addition;

Over 90% of small and medium-sized enterprises (SMEs) in Africa fail after start up;

Technology adoption among African entrepreneurs is generally low and opportunities for export in both crops and livestock sectors are limited (ASARECA, 2011);

Poor quality of farm products;

High post-harvest losses (30% of cereals and 50% of fruits and vegetables are wasted (UNIDO, 2010);

Insufficient entrepreneurial skills, practical skills and soft skills, among others.

Consequently, private sector investment and agribusiness development on the continent have been constrained. To deal with the above-mentioned challenges, many high level consultations including the 2011 EMRC Johannesburg Declaration on Food Security and Nutrition Agenda, the 2012 AU-Lula Institute Meeting in Addis Ababa, the 10<sup>th</sup> CAADP Partnership Platform in Durban and the May 2014 African Union Conference of Ministers of Agriculture and Fisheries in Ethiopia, Addis Ababa, have all advocated for public-private partnership in implementing the second decade (2014-2024) of CAADP by involving the private sector in creating competitive enterprises in different country commodity priority value chains.

Incubation programmes can bring about the following benefits:

Strengthened partnerships among universities, research institutions and business;

Enabling quality, efficient and effective delivery of service to entrepreneurs;

Commercialising technologies and creating jobs;

Increasing productivity in the agricultural value chain;

Moving SMEs up the ladder;  
Increasing business confidence;  
Growth in economies.

A practical application of the above benefits can be undertaken by learners of this book by attempting the assignment given below.

Benefits of the incubation programme:

- *Take a hypothetical case of a business and characterize, in a maximum of one page, how each of the above factors would affect its growth;*
- *Exchange your write-up with a colleague and discuss the findings from the exercise.*

### **Framework for Agribusiness Incubation in Africa**

Agribusiness incubation is a stepwise process of nurturing entrepreneurs by providing handholding and, mentorship and catalytic support over a period that mostly goes to two years. Under the UniBRAIN programme, ANAFE has adopted the model of incubation that is in use by consortia and universities. Figure 10.1 illustrates the model of incubation.

**Figure 10.1:** Framework for agribusiness incubation in Africa  
(Source: ANAFE, 2012)



## Case Studies of Incubation on Agribusiness Incubation and Entrepreneurship

This section presents some case studies (Boxes 10.2 – 10.4) on agribusiness incubation and entrepreneurship in the African context. Case studies indicating best practices and lessons learnt are documented in this chapter for aspiring incubates. The case studies and the elements that they contain are meant to inspire learners and give them the knowledge they need to effectively benefit from an incubation programme or to initiate one in their institution.

For incubation to work well, three elements are needed:

Integration of the incubation initiative to a larger programme;

An effective and innovative team; and

Professionalism (NBIA Principles and Best Practices of Business Incubation).

### **Box 10.1:** The Sorghum Value-Chain Development Consortium (SVCDC)

The Sorghum Value-Chain Development Consortium (SVCDC) is an agribusiness incubator hosted at Jomo Kenyatta University of Agriculture and Technology (JKUAT). It is however independent of the university administration and collaborates with both the public and private sector to encourage training, research and innovation for development. The partnership comprises of JKUAT, Kenya Agricultural Research Institute (KARI), International Crops Research Institute for the Semi-arid Tropics (ICRISAT), Pipal, Agritrace and Farming Support International (FASI). The incubator targets poor rural communities in sub-Saharan Africa particularly Kenya.

Among the rural poor, priority will be given to farmer groups, disadvantaged groups such as women and youth, agribusiness graduates who have potential entrepreneurship skills, SMEs who have the potential of becoming mega-industries, among others.

The main purpose of the SVCDC is to stimulate agribusiness partnerships to enhance commercialization of sorghum and its value added products for sustainable livelihoods in Sub Saharan Africa through innovative scientific and technological approaches. The incubator stimulates development and create jobs in the following ways:

Creating competitive agribusiness enterprises through partnerships between universities, research institutions, public and private sectors;

Improving the curriculum for undergraduate, postgraduate and other training programmes in agriculture and business studies through positive feedback of lessons learnt from the Sorghum value chains addressed by the Agribusiness Innovation Incubator Consortium;

Establishing a network for upscaling, documenting and disseminating the innovative outputs, experiences and practices through improved linkages and partnerships within and without the Consortium.



**Plate 10.1:** Products of the SVCDC

The incubator approach is to identify commercial products in the sorghum value chain and develop them from the market end backwards. Health drinks, and breakfast cereals have been developed and a noodle processing plant is on course to be built. Plate 10.1 displays products of SVCDC.

### **PESTEL Analysis of SVCDC**

External environmental factors which may impact on the operations of the incubator and related strategic objectives are summarised below. Key factors include: the political, economic, socio-cultural and technological factors, and carry the acronym - PESTEL.

**Political Factors:** it is recognised that political stability, democratisation and empowerment of stakeholders will play a crucial role in the success of the incubator. In addition, international and regional relationships, global and national security, public demand for transparency and accountability will impact tremendously in the functioning of the incubator. These factors will have a great bearing on the regulations and stipulations that will be required for the functioning of the incubator. Political factors will also impact and influence the spending power of both the incubates and clients.

Key political domain elements that will have notable impacts on the functioning of the incubator include taxation, trade regulations, contract empowerment laws, consumer protection, employment laws, government attitude, competition regulations, and political stability. Since the 1980s Kenya's tax regime has been undergoing modernisation and is comparable to an average developing nation. A deliberate pursuit of structural and macroeconomic reforms as well as greater transparency and predictability of existing trade legislation has helped Kenya's transition to an outward-oriented economy and improved its ability

to attract the needed foreign investment. The contract law in Kenya protects all legal contracts and the freedom for consumer associations helps protect the consumer. Employment is governed by the general law of contract, as much as by the principles of common law.

The government of Kenya has a positive attitude towards private sector operations and in place are laws that govern competition. The country has unrivalled political stability in the region. All these aspects of the political domain are complemented by the fact that there is a new constitution in place offer a very favourable political climate for the operation of the incubator.

**Economic Factors:** Kenya's GDP real growth rate was 0.8% in 2003. It rose to 7% in 2008 and sharply dropped to 1.7% in 2009. It has since recovered and stands at 4% as of April 2011. This reversal is good news for the proposed incubator. In February 2011 the Central Bank of Kenya cut its prime lending rate by 25 basis points (0.25% to 5.75%) for the 7<sup>th</sup> interest rate cut since 2009. Given that an interest rate is the price of money borrowed these cuts are very good news for investments such as the proposed business incubator. Having realized that wage employment opportunities are becoming scarce the government has in place favourable policies for the growth of the micro, small and medium scale enterprises which are candidates for the proposed incubator. An enabling economic environment which will benefit the incubator has been created by Vision 2030.

**Socio-Cultural Factors:** social factors will inform the needs of different customers of the incubator and also have an impact on potential market size. Kenya's population of about 40 million offers a large market for the products of the incubator. The high rate of the youth in the population structure imply an active labour force from which the incubator will tap human resources. The larger rural population in the country's population structure with largely traditional lifestyles offer the very much required demand for sorghum related products. The said demand is complimented by the fact that the urban population is increasingly becoming aware of health living associated with traditional food.

**Technological Factors:** technological factors have the potential to raise or lower barriers to market entry. They can also influence production efficiencies as well as necessitating outsourcing. Kenya has made strides in the development of ICT. E-commerce has been made a reality. Micro entrepreneurs who could not access mainstream banking services can now use the mobile phone to access these services.

**Competitive Environment:** factors in the business environment can impact positively or negatively on the operation of incubators as shown in Table 10.1.

**Legal Environment:** legal aspects range from the legal status of the incubator to the various legal aspects governing the elements of the value chain and collaborators. SVCDC has been registered as a company limited by guarantee. The legal aspects for the crop in question (sorghum) are contained in a number of legislations falling mostly under the Ministry of Agriculture and Ministry of Trade and Industry.

**Table 10.1:** Competitive factors in the business environment

<b>Nature</b>	<b>Level</b>
Entry of new incubators resulting in increased competition in market which can fundamentally change the competitiveness of local industry	Low
International market and public policy decisions e.g. creation or removal of tariff barriers in countries where goods are ultimately sold may change the competitiveness of local industry	High
Shifts in capital markets causing other business ventures to compete unfavourably with sorghum value chain product	High
Existing Incubators in Kenya, e.g. KIE (Kenya Industrial Estates), Muhoroni Sugar Factory, University of Nairobi, <b>Kenya Agricultural Research Institute (KARI)</b>	Low
Other market players with similar products, e.g. Kenya Breweries, Oil Companies, flour mills	Low

### Study Questions

1. Highlight the main factors that have contributed to the implementation of the SVRDC incubator project.
2. What is the role played by the Government in providing a conducive environment for the operation of business incubators?

### Box 10.2: Kazi Incubation programme for graduate start-up agribusiness enterprises

#### Objectives

To enhance success rate of graduate agribusiness start-up enterprises.

To have businesses operate at a scale.

#### Level of teaching

BSc,

MSc,

PhD.

### Introduction

Have you wondered why your business did not live to see its second birthday? Have you ever wondered why many of the successful businesses you knew about do no longer exist? Would you want to have a business that is would keep going strong in this

changing world? If you identify with any of these questions, then this case study sets you to process of getting solutions to your challenges.

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Many agribusiness graduates are equipped with knowledge to operate effective enterprises but often time's investors in agribusiness are few. Some graduates have an innovative idea to start their own enterprises after training but the success rate of the businesses is very low. Africa accounts for only 30% survival rate for business start-ups in the first year compared to 71.3% survival rate in 3 years in the UK (OECD, 2002) and 69% in 3 years in the US (US Small Business Administration, 2002). The business incubation programme was established to address these limitations. Incubation is defined as a comprehensive interdisciplinary programme for nurturing start-ups by providing mentoring and hand-holding services.

### Overview

Agribusiness graduates have many difficulties to find jobs as entrepreneurs in the agribusiness sector. A wide array of challenges faces start-ups and needs to be resolved for progress to be realized hence the need for incubation.

### The Problem Being Addressed

The poor level of starting agribusinesses, and  
High failure rate

### Questions

1. Describe a desirable entry criterion for incubates.
2. Develop a mechanism for scaling up the incubation process.

Conduct a critical path analysis for the incubation programme

### Box 10.3: The Public Sector Initiatives for Graduate Start-up Agribusiness Enterprises

The Mauritius Research Council (MRC) is a central body to advise the Government of Mauritius on Science and Technology issues and to influence the direction of technological innovation by funding research projects in areas of national priority and encouraging strategic partnerships. In 2011, the MRC set up a Business Research Incubator Centre (BRIC) to foster the growth of Mauritian innovative start-ups into competitive businesses and provided assistance to some 15 start-up companies. A new scheme was introduced in 2013 to promote innovative businesses from university graduates with the aims to:

- Provide a nurturing environment for the commercialisation of research;
- Provide the right environment to foster entrepreneurship;
- Encourage the development of multidisciplinary and cross-fertilizing technologies.

The MRC-BRIC proposes an incubation scheme which can be described as follows:

- **The incubate**

The target group includes final year undergraduates or fresh graduates with innovative projects, and the latter receive a monthly stipend

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- **Sponsors**

Stakeholders from the private sector are invited to participate in this scheme to match the grant of MRC stipend. Sponsors can also take part in the incubatee's project

- **Mentors**

Mentors who are experienced professionals provide counseling and support to the incubates to help them with their start-ups.

The MRC-BRIC also offers the following services to incubates:

- Free office accommodation including Conference, meeting and brainstorming rooms;
- Free internet access;
- Access to mentoring and business planning from experienced professional;
- Creation of synergies with other businesses;
- Networking through Business Angels fora.

### **Questions**

What according to you could be factors influencing the success or failure of start-ups in incubators?

To what extent should the Government intervene to promote entrepreneurial activities in the country?

### **Conclusion**

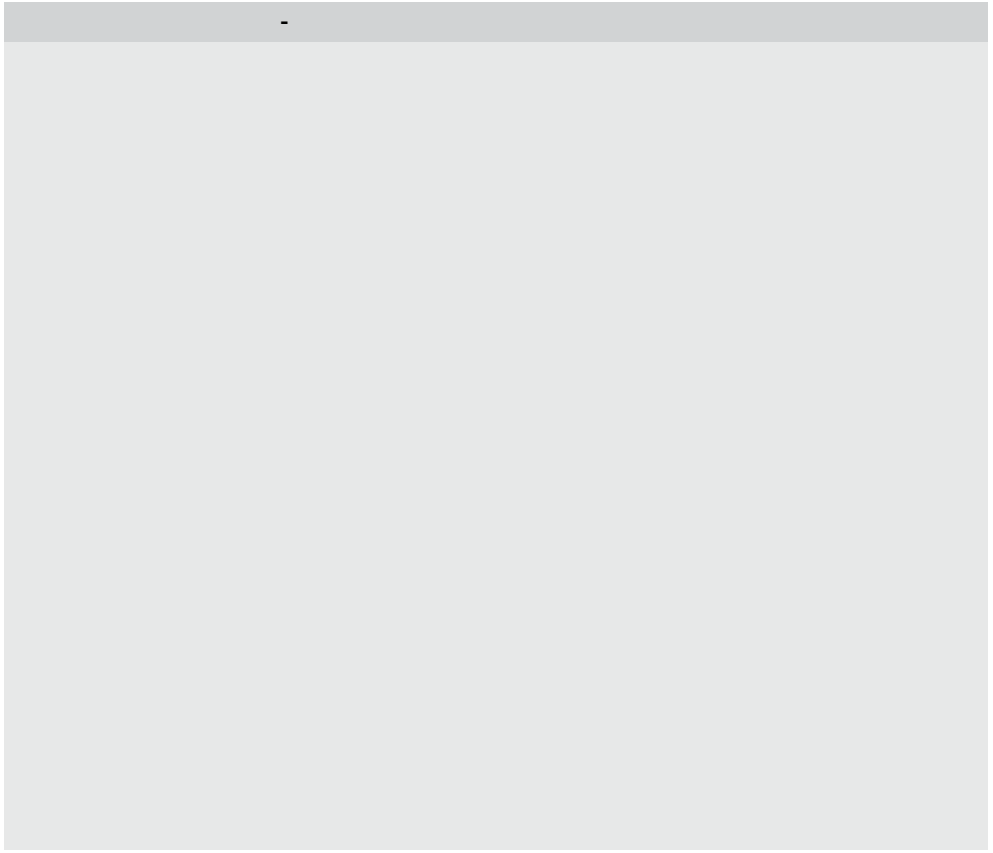
This chapter aimed at giving learners an applied perspective of agribusiness incubation and entrepreneurship in the African context. It interestingly showed that a number of initiatives are taken both at public and private sector levels to boost entrepreneurship as a means of empowering young people into creating their own enterprises. The case studies presented in this chapter help to illustrate the conducive environment to business incubation especially for startups which is a step in the right direction for the creation of economic wealth in developing countries.

### **Questions for Discussion**

Do all business start-ups need to go through an incubation phase to be successful?

What according to you are the personal traits required for a successful entrepreneur?

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Why is entrepreneurship education important in African Universities?

### Suggested Readings

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## Chapter 11

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### FINANCIAL MANAGEMENT IN AGRIBUSINESS

Thompson O. A.<sup>1</sup>, J.O. Ongong'a<sup>2</sup> and O. O. Akinrinola<sup>3</sup>

#### Summary

For most agribusiness managers, record keeping is a challenge and in view of the fact that most of them do not know how to keep business transaction records, since most of them are trained in production and not in business management. So they lack the skills to properly keep records of their business transaction in an acceptable way to the third party such as financial institutions that may want to assist with loans and grants. Therefore, to enable an agribusiness man or woman to keep good transaction records and analyze their business transactions over time with the ultimate aim of maximizing market opportunities, this chapter provides a step by step method of keeping business transaction records. The chapter makes use of integrated practical-based tools that will help an agribusiness manager on how to analyze business transactions over. This is to enhance the ability of practicing agribusiness managers to make better agribusiness decisions. Also, since farm finance strengthens agribusiness and helps to increase productivity of scarce resources, an attempt is made to present the most important topics of agricultural finance. These are Agribusiness Income Account, Profit and Loss Account, Net worth Statement or Balance Sheet, Asset Valuation and Depreciation Schedule, Agribusiness Inventory and Agribusiness Analysis

#### *Gestion financière en Agrobusiness*

#### *Résumé*

*Pour la plupart des managers d'agrobusiness, la gestion des bases de données reste un défi, vu que la plupart d'entre eux ne savent pas comment gérer les données sur les transactions d'affaires, dans la mesure où la plupart d'entre eux sont formés à la production et non à la gestion. Ils manquent donc de compétences dans la gestion convenable des dossiers de transactions de leurs affaires, surtout pour la troisième partie comme les institutions financières, qui voudront aider à travers des prêts et des subventions. Par conséquent, pour mettre en route l'agrobusiness, aussi bien l'homme et la femme doivent conserver puis analyser les données sur les*

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*transactions, dans le temps avec pour but ultime de maximiser les opportunités de marché. Ce chapitre fournit, étape par étape, une méthode de gestion de données en affaires. Il présente des outils pratiques qui aideront le gestionnaire d'agrobusiness sur la façon de traiter efficacement les transactions commerciales. Ceci pour renforcer les capacités de ceux-ci à prendre les meilleures décisions au profit de leur agrobusiness. En outre, dans la mesure où le financement des exploitations agricoles renforce l'agrobusiness et contribue à accroître la productivité des maigres ressources, un effort est fait pour présenter les principaux sujets de la finance agricole. Ce sont le Compte de Revenues de l'Agrobusiness, le Compte des Pertes et Profits, la Déclaration de la Valeur Nette ou le Bilan, l'Évaluation des Actifs et le Calendrier de l'Amortissement, ainsi que l'Inventaire et l'Analyse de l'Agrobusiness.*

## **Introduction**

There is a compelling need for anybody in agribusiness enterprises like any other business venture to understand the need to keep business records (Boomgard, 1993). Such a person would benefit tremendously from putting his data into standardized systems of accounting which in this chapter have been developed for easy understanding. Therefore, proper financial management which entails business record keeping, record analysis and interpretation require practical guide that will enhance understanding of the subject matter (Munankami, 2000). In view of the above, this chapter includes the study of concepts and tools that can be used by practicing agribusiness managers to make better agribusiness decisions. This chapter will emphasize the use of economics to understand the agricultural business environment and to provide quantitative support for decision making.

In addition, practical techniques (i.e. case studies) are discussed in depth to provide the knowledge and skills necessary to record agribusiness transactions, analysis and interpret financial data in an agribusiness enterprise with the ultimate aim of making a worthwhile financial decision as an agribusiness manager. Furthermore, the chapter will discuss the concern of the stakeholders who are interested in an agribusiness financial record, what they are interested in and why such stakeholders are interested in these financial records and/or statements.

## **Learning Objectives**

The general objective of this chapter is to assist the users of this book to put all their agribusiness financial transactions in simple accounting records that are understandable by those who may be interested in such records. The specific objectives are, to:

learn how to prepare a simple agribusiness Income Statement (i.e. Cash Analysis Accounts Books);



learn how to prepare a simple agribusiness Trading Account for the year (Profit and Loss Account);

learn how to prepare a simple agribusiness Net-worth Sheet Statement or Balance sheet;

learn how to prepare a simple Agribusiness Inventory; and

understand the concept of agribusiness analysis.

### **Learning Outcomes**

At end of this chapter, users of this book will be able to:

prepare and keep simple and necessary agribusiness records;

analyse the information in agribusiness records and make reasonable financial decisions through the information in these records;

know those who are interested in agribusiness records and the reason for their interest in such records.

#### **The Income Account**

This is a statement of all transactions that took place with regard to the agribusiness for the year that has just ended (Ani, 2007). For agribusinesses which are run by non-profit making organizations like welfare groups, it is necessary for them to prepare this statement to show how they use their funds. The way in which accounts are kept under this system is illustrated in Table 11.1. When the agribusiness Income Account book is opened, sales and receipt are entered on the left-hand side, while purchases and expenses are entered on the right-hand side. Under each of the two sides of the Account, there are three columns – date, details, and total. Received on the left-hand-side; the first item on sales and receipt side is opening balance which can represent either the net income carried over from the operations of the previous year or month or if the agribusiness manager is starting farming for the first time, the amount of money with which he or she started the agribusiness (Alistair, 2008).

During the year, if he or she received any income, such items of sale are entered transaction by transaction with their corresponding values. The total value of sales and receipts during the financial year will be recorded. This will complete the entries under sales and receipts (Adesimi, 1981). Furthermore, the first expenses item on the right-hand side is the value of implements purchased, followed by other items such as salary/wages, inputs/feeds and so on. The total value of purchases and expenses when subtracted from the value of total sales and receipts give a closing balance. This latter amount is, by right-hand side by adding it to the difference between the income and expenses. Both sides then

have the same totals which were entered at the same level with each other and ruled with a double line (Arpan, 2009).

This shows that the account for that year is completed. Finally, the balance will be carried down and entered on the opposite left-hand side in the Total Received Column, ready to start the next year (Jordan, 2012).

**Table 11.1:** An Example of an Agribusiness Income Statement

Items	Amount ( Ksh.)
Sales	200,000
Less: Cost of sales	(60,000)
Gross Profit	140,000
Less: Marketing and Distribution	(20,000)
Administrative expenses	(5,000)
Other operating costs	(4,000)
Earning before interest and tax	111,000
Less: Interest payable	(2,000)
Earnings after interest and before tax	109,000
Less: Taxation	(5,000)
 Earning after tax      (Net Income)	 104,000
 Add: Dividends	 10,000
Retained earnings for the year	114,000
Retained earning at the beginning of the year	114,000

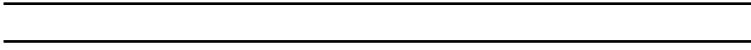
### Agribusiness Trading Account or Profit and Loss Account

One of the crucial questions which any market oriented agribusiness must ask at the end of the year is whether he/she had made profit or loss during the year that has just ended (Ani, 2007). To answer this kind of question, the agribusiness manager has to present his data in form of trading account (Profit and Loss Account (Table 11.2)) and this must be sufficiently detailed to be useful in further aspects of agribusiness analysis. It is customary to put “Purchases and Expenses” on the left-hand side and “Sales and Receipts” on the right. The closing valuation is also on the right and opening valuation on the left (Munankami, 2000). To have a complete understanding of Agribusiness Trading Account, it is useful to proceed as though the agribusiness manager was going to give up business at the end of the year.

The key terms used in the Trading Profit and Loss account are:

**Gross profit:** This is the excess of the sales revenue over cost of goods sold.

Where the cost of goods of sales is greater than the revenue, the result is gross loss. i.e. Sales – cost of goods sold =gross profit



**Net profit:** It consists of gross profit plus any revenue other than sales like rent received or commission earned less total cost used up during the trading period other than those included in the cost of goods sold. Where the costs used exceed the gross profit plus other revenues, the result is a net loss (Adesimi, 1981).

**Table 11.2:** A Format of an Agribusiness Trading Profit and Loss Account

Mali Mingi Company Trading Profit and Loss Account for the Year Ended 31-12-2013

Particulars	Ksh Dr	Ksh Cr
Sales		xxx
Less: Cost of sales	xxx	
Opening stock	xxx	
Add Purchases	xxx	
Less: Closing stock	xxx	
Gross Profit		xxx
Add: Rent received		xxx
Commission received		xxx
Carriage	xxx	
Wages	xxx	
Salaries	xxx	
Commission	xxx	
Net Profit		xxx

### Net worth Statement or Balance Sheet

While the Agribusiness Trading Account indicates the profitability or otherwise of an agribusiness enterprise over a given period of the business process and is thus a flow concept, the Net-worth Statement or Balance Sheet shows the capital position of the agribusiness enterprise at a given point in time (usually at the end of the year) and is therefore a stock concept (Morgan, 2005). The Balance Sheet or Net-worth Statement is usually conceived of as the value of assets that would remain if the agribusiness were liquidated and all outside claims against the business were paid and all outstanding accounts in favour of the agribusiness were received (Kotler, 1988). The Balance Sheet therefore shows the amount of capital invested in the business as at the time the statement is being prepared. Successive balance sheets show the changes in assets, liabilities and net-worth of a business from period to period. The amount of investment by the agribusiness manager represents his equity or net-worth which is defined as assets minus liabilities (Anil, 2011).

An asset is any economic good in the possession of the agribusiness including claims on something of value in possession of others (Paul and Peter, 2011). The agribusiness inventory, accounts receivable, cash in hand or at the bank,

all constitute the assets of the agribusiness (Pena, 2004). A liability, on the other hand is a claim against an agribusiness enterprise such as mortgage on agribusiness, unpaid bills, notes payable, etc (Delton and Robert, 2005). Assets can be categorized as currently, working or fixed. Current assets are those that will be used up within a single business year such as cash in hand or at the bank, products held for sales, and agribusiness supplies (Bond, 2008). Working assets consist of such capital items as machinery, implements and breeding stock which are normally used up during the life of the agribusiness (Horace, 2000).

Fixed assets are durable and immovable assets such as land, land improvements, permanent building, and irrigation dams (Gerald *et al.*, 2007). While liabilities can also be categorized in accordance with the time they are to be repaid. Thus, we have current, intermediate, and long-term liabilities (Robert, 2010). Current liabilities are loans deemed to be paid immediately, while long-term liabilities consist of loans such as mortgages which demand repayment in some distant future time (Rich, 2009). In between these two categories of liabilities lie intermediate liabilities which require repayment in the very near future, longer than the period required in the case of current liabilities but less than the period for long-term liabilities. By classifying liabilities in this way and comparing them with the corresponding categories of assets, information can be obtained on the solvency of an agribusiness enterprise and on its ability to meet short-run, intermediate and long-term financial obligations. This information is particularly useful as a basis for credit financing (Joel *et al.*, 2007).

The classification of liabilities according to the length of time within the time frame they fall due also has significant implications for agribusiness finance policy (Neil, 2007)). It suggests that the duration of obligations on the liabilities, in large measure, should not outlive the earnings generated by the asset by which it was secured (Tuan, 2003). If, for example, feeds are bought for growing fingerlings which is to be sold in few months' time, it is poor management policy to purchase the feeds on note that falls due for repayment in a year's time. Moreover, earnings generated by an asset should be large enough not only to repay the liabilities itself but also to defray the interest charges associated with it (Chapman, 2001). Therefore, long-term liabilities should by no means be secured with working or current assets, working or current assets should by no means, be financed by long-term liabilities (Desai and James, 2002).

The significance of balance sheet account derives from the fact that many important calculations in agribusiness management are derived from it such as information with regard to the strength and weakness in the capital and financial positions of the agribusiness (Heady, 2002). Such calculations are (Table 11.3); percentage of equity to total assets and net capital ratio, both of which reveal the degree of safety or stability of the agribusiness enterprise; ratio of debt to net-worth which represents the amount of debt per unit of the proprietor's contribution, and the working capital ratio which indicates the agribusiness's financial safety over an intermediate period of time.

The objective of preparing the balance sheet is to know or determine the net-worth of a business (Jenkins and Shukla, 2009).

Prepare a balance sheet for Mali Mingi Traders as at 31-21-2013 showing Current Liabilities, Fixed Assets, Current Assets and Net Worth from the data given below:

Items	Dr Ksh	Cr Ksh
Capital		250,000
Loan from banks	50,000	
Creditors		10,000
Office Machinery		200,000
Stock of goods	35,000	
Debtors		45,000
Cash at bank		34,000

**Table 11.3:** Calculations of Current Liabilities, Fixed Assets, Current Assets and Net Worth

Items	Dr Ksh	Items	Cr Ksh
Capital	250,000	Fixed Assets:	
		Office Machine	200,000
		Current Assets:	
Loan	50,000	Stock	35,000
		Debtors	45,000
		Cash	30,000
Current Liabilities:			
Creditor	10,000		
<b>Total</b>	<b>310,000</b>		<b>310,000</b>

Total Assets = 310,000

Outside Liabilities = loan from banks + creditors 50,000 + 10,000=60,000

Net-worth = Total Assets – outside liabilities: 310,000-60,000 =250,000

### Asset Valuation and Depreciation Schedule

The most crucial aspect of agribusiness accounting is the correct valuation of agribusiness assets and the determination of annual depreciation allowances (Pricewaterhouse Coopers, 2002). Therefore, the need for valuing and depreciation of agribusiness assets arises in general, from the need to appraise the agribusiness financial position and to ascertain its financial success during the relevant production cycle (Seol, 2007). From the agribusiness management point of view, carefulness, consistency and rationality should be the watchwords

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in choosing the method to employ in order to ensure that accounts prepared in one period of time are accurate.

The problems of asset valuation arise mainly with respect to fixed and working assets. Land which forms an important component of most agribusiness is fixed assets should be value using a criterion based on its current worth to the agribusiness manager (United States Department of Agricultural Economics Research Services (USDA), 2010). Where a well-developed rural land market already exists, land valuation should be approached by using the price which the agribusiness manager himself or herself is willing to pay for that kind of land (PricewaterhouseCoopers, 2009). Furthermore, the peculiar condition of farm animals is that much uncertainty surrounds their period of growth and usefulness (Morgan, 2005).

Consequently, the recognition that these animals do appreciate and depreciate in value means that their valuations should be based on the market prices so that adjustments may be made for influences such as accidents, sickness, disease and market fluctuations in respect to individual class of agribusiness animals (i.e. Chicken, goat, etc) (Jordan, 2012). Again, for agribusiness tree crops and other economic trees, the following factors are used to compute the valuation per tree:

Quality grade of the trees in the plantation;

Lifespan of the tree crop;

Estimated time when the tree crop reaches its peak production;

The age of the crop at the time of valuation;

Estimated average net revenue per Grade A tree over its productive lifespan (Anil, 2011).

The formula for valuation of agribusiness tree crop is (eqn 11.1):

$$PV = R(L - A) \quad (11.1)$$

Where PV = Present Value of agribusiness tree crop

R = estimated annual net revenue per agribusiness tree crop

L = lifespan of the crop

A = age of the tree crop at the time of valuation

Most capital items falling under working assets, valuation in agribusiness should be based upon annual allowances for depreciation. The problem of depreciation arises not only because agribusiness assets render services over several years but also because they lose their values from years to year on account of wear and



tear, obsolescence and exposure to weather (Paul and Peter, 2011). Depreciation is a cost just like the cost of permanent labour because it is a payment for services rendered by an input during the course of a particular production process or cycle. One other rationale for depreciation allowances is that, if its annual value is set aside each year into what is known as a “sinking fund” the fund would ultimately grow to equal the original cost of purchase of the assets (Pricewaterhouse Coopers, 2009). A profitable agribusiness enterprise should at least be able to generate a sinking fund large enough to replace all durable assets being used in the production process (USDA, 2010).

The first step in systematically calculating the annual depreciation allowance of a durable asset of an agribusiness is to find out the total depreciation value. This is done by determining the purchase price, whether bought or used, and then subtracting the scrap value or trade-in value (Food and Agricultural Organization (FAO), 2009). The next step is to estimate the useful or serviceable life of the agribusiness asset or the length of time in which the total depreciation value should be charged. For certain classes of assets such as agribusiness machinery, this is not an easy task to accomplish because the life of any machinery varies widely in accordance with the material and design of the machine itself, the amount of care and repair given to it and intensity and condition of use made of it (Seol, 2007).

After determining the total depreciation value of the asset and estimating its serviceable life, the next step is to give consideration to the method most suited for calculating the annual depreciation charges (Jenkins and Shukla, 2009). The amount of depreciation might be considered from the point of view of annual maintenance cost and value of service. In the case of machinery maintenance cost tends to be low and service yielded high when the machine is new. As the machine becomes older, repairs and maintenance costs are high and the service received are low. This argues the case for distributing depreciation more heavily in the later years of an asset than in the early years (Heady, 2002)).

Moreover, depreciation charges can be spread over the life of an asset particularly if the asset requires uniform maintenance throughout its life and is not subject to marked technological changes in design or improvement (Desai and James, 2002)). Examples of this category of assets are fences and farm buildings. Also, one of the most commonly and simple method of computing annual depreciation recommended for an agribusiness is what is known as the “Straight Line Method”. This is computed by dividing the depreciable value by the expected years of life. This method spreads depreciation evenly over the expected serviceable years of an asset (Chapman, 2001).

### Agribusiness Inventory

Agribusiness inventory may be defined as a complete listing (in terms of number, weight and value, etc.) of all tangible agribusiness property at a given point in time (USDA, 2010). The idea of agribusiness inventory is quite central to complete agribusiness accounting. Without it, hardly can any system of agribusiness accounting be prepared (Tuan, 2003). The usefulness of agribusiness inventory in an efficient agribusiness management also extends beyond its aid in preparing agribusiness accounts (Neil, 2007). For example, if an agribusiness manager wants to buy or sell a farm, an inventory of all the farm assets provides valuable information for making proper judgment about the price of the farm.

Even, in agribusiness planning which requires an appraisal of the supply and quality of all available agribusiness resources, the use of agribusiness inventory is also involved (Delton and Robert, 2005). All these facts demonstrate that a properly kept inventory of agribusiness assets and liabilities is indispensable to profitable organization and operation of agribusiness enterprises. Inventory is ordinarily taken at both the beginning and end of the income or production year, and changes in inventory values between this time interval may result from one or a combination of factors such as decrease or increase in the physical quantity of stocks, normal process of appreciation or depreciation, and changes in market conditions (Bond, 2008).

**Table 11. 4:** Example of Agribusiness Inventory of Machinery, using Straight Line Method

<i>Description</i>	<i>Size</i>	<i>Year new</i>	<i>Cost new (N) 000</i>	<i>Estimated Years of life</i>	<i>Deduction Per Year (N) 000</i>	<i>Present value (N)</i>
Tractor	2-plough	2008	84,000	12	7,000	49,000
Tresher	28"	2009	40,000	20	2,000	32,000
Cultivator	2-row	2010	30,000	10	3,000	21,000
Feed grinder	8'	2010	10,000	20	500	8,500
Corn planter	2-row	2011	15,000	10	1,500	12,000
<b>Total inventory value</b>			<b>179,000</b>		<b>14,000</b>	<b>122,500</b>

### Agribusiness Analysis

#### *Measures of Efficiency*

How efficiently an agribusiness manager has performed in regard to the management of his or her agribusiness enterprise can be indicated by a simple comparative analysis. However, before a meaningful comparison can be made between two agribusiness enterprises or in respect of a given agribusiness enterprise over a period of time, there should be a reasonable basis for comparison.

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***Labour Efficiency***

Labour efficiency can be measured in a variety of ways. However, the most economically reasonable measure for an agribusiness enterprise is the ratio (eqn. 11.2).

$$\frac{\text{Value of Total Output}}{\text{Total Wage Bill}} \quad (11.2)$$

The advantage of this method is that it takes into account the quality of both agribusiness output and labour input, since prices paid and received would most probably reflect the quality of items transacted. This method can ordinarily be used when comparison is being made among similar agribusiness enterprises that face the same product and factor markets (Gerald *et al.*, 2007).

***Measures of Financial and Capital Position***

One of the most important steps in agribusiness analysis is the computation of the financial success of the agribusiness enterprise operation. The Agribusiness Income Statement provides information on the financial position of the agribusiness at the end of a given year (Neil, 2007). Therefore, having been furnished with the figure of his or her agribusiness income, the agribusiness manager may choose one of the following courses of action:

- a) He/She may continue the agribusiness enterprise in essentially the same way as before if he/she is well satisfied with the income he/she has received, or
- b) He/She may decide to make adjustment or change if he/she is not satisfied with the income earned. The changes contemplated would be designed to bring higher incomes in future operations, or
- c) He/She may pack it up entirely with agribusiness enterprise and start off another, if he/she feels that there is no way he can improve his present agribusiness enterprise system and thereby realize a satisfactory level of income.

However, if the second alternative is what the agribusiness manager decided upon, he/she would need to analyze his/her records more thoroughly to identify those parts of the agribusiness where changes may be effected.

***Measures of Capital Position***

There are several reasons why an agribusiness manager may wish to measure his/her capital position. He/She may wish to know something about flexibility or liquidity of his/her capital structure, he/she may also wish to know something about the stability of his/her agribusiness enterprise. Stability indicates the

extent to which an agribusiness enterprise is able to weather through sudden and unanticipated decline in the value of assets or to survive an unexpected rise in the amount of liabilities (Robert, 2010). It also indicates the ability of the agribusiness enterprise to withstand prolonged economic depressions (Joel *et al.*, 2007).

Flexibility is the avoidance of rigid production plans which are difficult to change in the short run. Flexible production plans have the merit of permitting changes to be incorporated in existing agribusiness enterprise plans as the need to produce different products, change the relative combination of enterprises, or use different practices occurs (Pricewaterhouse Coopers, 2002). Again, flexibility in production plans is essential in agribusiness because of the variety of uncertainties which surround agribusiness production. Therefore, the amount of flexibility that is incorporated in an agribusiness enterprise plan has important bearing on its profitability especially where several close opportunities exist in production and where there are tendencies for changes in demand and price to occur which quickly change comparative profitability of agribusiness enterprises (Gerald *et al.*, 2007).

In addition, liquidity can be regarded as a variant of flexibility in that it is also a device of safeguarding against the uncertainties inherent in agribusiness production (Robert, 2010). Liquidity refers to the structure of an agribusiness asset in terms of cash balance which can easily be relied upon to meet exigencies such as a sudden need to acquire new resources in order to take advantage of new favourable opportunities (Boomgard, 1993). Liquidity, however, is a relative term, for example, while cash in hand or at the bank can be regarded as more liquid than bills receivable, feed, supplies and market livestock, this latter set of assets can, in turn, be regarded as being more liquid than agribusiness equipment, breeding stock, tractors etc (Rich, 2009).

### **The Various Measures of Capital Position**

***Percentage of Equity to Total Assets:*** The stability of an agribusiness business may be measured by the percentage value of the manager's equity in the business. This is expressed as (eqn. 11.3):

$$\frac{\text{Proprietor's Networth} \times 100}{\text{Total Asset}} \quad (11.3)$$

A variant of the stability index is, however, usually measured in terms of Net Capital Ratio (eqn. 11.4):

$$\text{Net Capital Ratio} = \frac{\text{Total Assets}}{\text{Total Liability}} \quad (11.4)$$

The higher this ratio, the greater is the stability of the agribusiness because a high ratio implies that the agribusiness is able to weather through sudden and unanticipated shocks. Once these ratios are computed, the agribusiness manager will be able to see at a glance by how much the value of agribusiness assets has to fall for liabilities to exceed assets. If future changes are contemplated in the agribusiness that entails raising loans the influence of such loans on the ratio can easily be determined. What constitutes a safe ratio for any agribusiness however, depends on circumstances. For example, an agribusiness that is located in a region where there are frequent crop failures and wide price fluctuations, for example, will need a larger capital ratio than its counterpart that is situated in a more stable environment.

**Ratio of Debt to Net-worth:** this measures the financial trend of the agribusiness. It is calculated by dividing the total liabilities of the agribusiness by the proprietor's net-worth as expressed in equation 11.5

$$\text{Ratio of Debt to Networth} = \frac{\text{Total Liabilities}}{\text{Proprietor's Networth}} \quad (11.5)$$

This ratio represents the amount of debt per unit of proprietor's investment. A figure of less than unity indicates that the owner's equity exceeds the amount of borrowed capital. Sometimes, the concern is about the intermediate solvency of the agribusiness. In such circumstances the agribusiness manager may choose one of the following ratios:

**Current Assets Ratio:** as a measure of intermediate solvency of the agribusiness, this ratio is calculated by dividing current assets by current liabilities (eqn. 11.6).

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (11.6)$$

To be on a good financial standing, an agribusiness should always aim at maintaining a ratio much greater than unity. Narrow current assets ratio may throw the agribusiness manager into serious financial difficulties if he/she suddenly finds that amounts of bills fall due at a time, though the ultimate solvency of an agribusiness may be on a very sound basis.

**Working Capital Ratio:** this is another measure of an agribusiness financial stability over an intermediate period of time. The ratio is calculated by dividing the sum of working and current assets by the sum of over current and intermediate liabilities (eqn. 11.7).

$$\frac{\text{Current Assets} + \text{Working Assets}}{\text{Current Liabilities} + \text{Intermediate Liabilities}} \quad (11.7)$$

A working capital ratio of less than unity implies that the agribusiness is in a precarious intermediate solvency position (Alistair, 2008). Inevitably, this means that the agribusiness is currently financing part of its intermediate liabilities by some of its fixed assets. Should this situation persist for a long time, the agribusiness enterprise in question may soon find out that it has to wind up (Arpan, 2009).

**Ratio of Debt Servicing to Gross Receipts:** since debt must be serviced from total revenue of the agribusiness, it may well be appropriate to express its ratio to gross receipts as a measure of current solvency of the agribusiness enterprise. This ratio is calculated by the following expression (eqn. 11.8).

$$\frac{\text{Debt Servicing}}{\text{Gross Receipts}} \quad (11.8)$$

The farther away the ratio is below unity the stronger is the economic strength of the agribusiness to service its debts. It must, however, be emphasized that in order to have a viable agribusiness it is important that deductions of debt servicing from the value of gross receipts should leave behind sufficient income to give the agribusiness manager a comfortable standard of living (Borras, 2006).

### Measures of Agribusiness Size

The first question that an agribusiness manager may ask in the course of analyzing his/her business is about the size of his/her agribusiness; is the agribusiness operation large enough to take advantage of modern technology and to produce enough for a reasonable agribusiness income? If the agribusiness size is small, changes in operation should be considered first along this line. There are several ways in which the size of agribusiness can be measured. Some of the important ones are discussed below:

**Hectares of Land:** in many instances, cropped land is used as a measure of agribusiness size. This measure is appropriate as far as the land area being compared is fairly similar. Land area becomes an unsatisfactory measure of size when comparing agribusiness of different types or when soils of differing quality are being compared. Even with soils of comparable quality (FAO, 2009).

**Total Capital Investment:** another factor of importance is on agribusiness where a sizeable amount of capital, such as land improvements, buildings, machinery, livestock etc. has been invested the size of an agribusiness may appropriately be measured by total amount of capital investment.

***Total Labour Input:*** the amount of labour input measured in productive man-work units may be used as a measure of an agribusiness size. This measure may be satisfactory when comparing agribusiness having similar enterprises since different agribusiness enterprises differ in their labour requirements. Even in cases of agribusiness having similar enterprises this method may prove unsuitable if one has mechanized more than the other (Munankami, 2000).

***Number of Livestock:*** for comparing livestock agribusiness. Livestock numbers on the farm may be used to measure relative size of an agribusiness enterprise. Basically, the problem here is similar to using lands area as a measure of agribusiness size. Such measures give no regard to efficiency or intensity of production.

***Gross Income:*** all the measures discussed above have centered on the input approach to agribusiness size measurement. In contrast to these approaches, gross income may be used. To the extent that gross income is a measure of output it seems to be a more acceptable measure of size than any one of the measures based on agribusiness inputs.

### **Sources of Fund for Agribusiness**

Various Types of Funds:

- i. The two most common types of financing in agribusiness are debt and equity. Debt financing includes traditional bank loans and other lender options that require agribusinesses to repay the principal of fixed payment system;
- ii. Equity financing includes direct investments from venture capitalists, investment firms or other individuals who provide an agribusiness with capital for organizational growth opportunities. The repayment terms for investments often depend on the individual contractual agreements signed by the business owner.

### **Case study of Poultry Agribusiness**

Data from poultry agribusiness will be used to test the knowledge of the users of this manual on how to prepare required book of accounts for poultry agribusiness. Also, measure the efficiency of the poultry business and determine if the agribusiness is profitable.



AGRIBUSINESS IN AFRICA

SALES AND RECEIPTS (N)  
Date      Deta      T ta      Re e e

PURCHASE AND EXPENSES (N)  
Date      Deta e      T ta Pa

a a      e      a a      e

a a      Ca e  
a a      ee  
a a      a e  
a a      E e t      t  
a a      Re t  
a a      t e  
          a a      e

e a      a a      e  
e a      Sa e      a a e

e a      ee  
e a      a e  
e a      E e t      t  
e a      Re t  
e a      t e  
          a a      e

a      a a      e

a      ee  
a      a e  
a      E e t      t  
a      Re t  
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e      Sa e      e  
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e      ate

e      ee  
e      a e  
e      E e t      t  
e      Re t  
e      t e



July. 1	Balance b/f	256,326	July. 3	Feeds	89,250
July. 6	Sales of egg in crates	61,900	July. 28	Wages	35,412
July. 13		63,250	July. 30	Electricity	5,667
July. 20	Sales of egg in crates	64,060	July. 31	Rent	5,000
July. 27	Sales of egg in crates	60,180	July. 31	Others	4,850
	Sales of egg in crates			Balance c/d	365,537
	Sales of egg in crates				
		<b>505,716</b>			<b>505,716</b>
August. 1	Balance b/f	365,537	August. 4	Feeds	93,650
August. 3	Sales of egg in crates	70,100	August. 29	Wages	35,412
August. 10		69,250	August. 30	Electricity	5,667
August. 17	Sales of egg in crates	69,500	August. 31	Rent	5,000
August. 24		70,180	August. 31	Others	5,100
August. 31	Sales of egg in crates	69,850		Balance c/d	569,588
	Sales of egg in crates				
	Sales of egg in crates				
		<b>714,417</b>			<b>714,417</b>
September. 1	Balance b/f	569,588	September. 2	Feeds	96,980
September. 8	Sales of egg in crates	70,100	September. 29	Wages	35,412
September. 15		69,250	September. 30	Electricity	5,667
September. 22	Sales of egg in crates	69,500	September. 30	Rent	5,000
September. 29	Sales of egg in crates	70,180	September. 30	Others	4,800
	Sales of egg in crates		September. 30	Balance c/d	700,759
	Sales of egg in crates		September. 30		
		<b>848,618</b>			<b>848,618</b>
October. 1	Balance b/f	700,759	October. 3	Feeds	101,560
October. 6	Sales of egg in crates	69,800	October. 27	Wages	35,412
October. 13		70,010	October. 30	Electricity	5,667
October. 20	Sales of egg in crates	69,970	October. 30	Rent	5,000
October. 27	Sales of egg in crates	70,790	October. 30	Others	7,900
	Sales of egg in crates			Balance c/d	825,790
	Sales of egg in crates				
		<b>981,329</b>			<b>981,329</b>
November. 1	Balance b/f	825,790	November. 2	Feeds	102,670
November. 3	Sales of egg in crates	65,900	November. 28	Wages	47,250
November. 10		64,870	November. 30	Electricity	5,667
November. 17	Sales of egg in crates	66,010	November. 30	Rent	5,000
November. 24	Sales of egg in crates	65,120	November. 30	Others	3,300
	Sales of egg in crates		November. 30	Balance c/d	924,103
	Sales of egg in crates		November. 31		
		<b>1,087,690</b>			<b>1,087,690</b>

## AGRIBUSINESS IN AFRICA

December. 1	Balance b/f	924,103	December, 3	ee s	100,010
December. 1	Sales of egg in	2, 50	December. 24	age s	4 ,250
December. 8	crates	3,120	December. 30	lectricity	5,
December. 15	Sales of egg in	2,540	December. 30	ent	5,000
December. 22	crates	1,920	December. 30	t ers	3,100
December 29	Sales of egg in	59,250		Balance c/	1,2 5,50
December 30	crates	192,850			
	Sales of egg in				
	crates				
	Sales of egg in				
	crates				
	Sales of layer				
		1,42 ,533			1,42 ,533
	ear 2014	1,2 5,50			
	ening balance				
	being in ban				

### Conclusion

Good and proper bookkeeping is imperative to the success of any business enterprise. The chapter enlightened the users of this book on the need to keep proper book of accounts, how to prepare a good and standardized book of accounts that will enhance the success of an agribusiness manager. Various accounting ratios that will assist the users to making sound management and financial decisions were discussed in the chapter. It presented examples that will guide the users of this manual on how to prepare important books of accounts that will enhance sound financial and management decisions in their agribusinesses.

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		1,42□533			1,42□533

**Agribusiness Income Statement for the Year Ending December. 31, 2013**

Note: Recording of Agribusiness Income Statement is expected to be on weekly basis. This is to ensure that the whole book is not rowdy. Therefore, it is expected that the agribusiness manager will have daily book of record and later transfer it on weekly basis to Agribusiness Income Statement.

Source: Thompson, 2012

**Case Problem**

- Prepare the agribusiness trading account as at 31 December, 2013
  - Prepare the Balance Sheet or Net-worth Statement as at 31 December., 2013
  - Measure the financial and capital position of the agribusiness using all the ratios you know.
-

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## Chapter 12

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### **POLICY FRAMEWORK AND PUBLIC-PRIVATE PARTNERSHIPS FOR AGRIBUSINESS DEVELOPMENT IN AFRICA**

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#### **Summary**

The performance of the agricultural and agribusiness sectors depends on several factors that are closely linked and in most cases external to the wider sector. These include macroeconomic stability, taxation system, governance, trade, education and training, infrastructure, and human capital and social development. Achieving growth targets in agribusiness require implementation of prudent fiscal, monetary and exchange rate policies among others. In Sub-Saharan Africa (SSA) there exist inadequate policies and poor governance systems which dominate the macro-economic environment for agricultural business investments. According to World Bank, 2013 key among these challenges are: problematic and erratic policies in agricultural output/input markets, weak investment climate for agribusinesses investing in downstream processing and related activities; inadequate infrastructure and high transportation costs; difficulties for investors to access secured and tradable land rights and for governments to protect the rights of smallholders at the same time; difficulties for smallholders and small firms to access technology, skills, and finance. The chapter discusses these constraints and existing opportunities on how they affect the performance of agribusiness and explore possible ways to remove them in Africa's agribusiness environment. The study noted some of these policy challenges have been there since independence in the 1960s through to the 1980s and were designed for high taxation of the sector to raise government revenues through export taxes or to keep food prices low for urban consumers. However, it is noted the situation is improving through policy reform at the macro level but at a slower pace than expected in much of Africa. Moreover, investment incentives have improved significantly. Further, the study shows that domestic trade in terms of market interventions in several countries in the form of border restrictions and government purchases and sales of food staples continue to undermine private investment in food markets. Similarly, World Bank, 2013 states that public expenditures on agriculture, which declined to only 4 percent of budget expenditures in the early 2000s, are only beginning to rise. Part of the increase has been in the form of input subsidies, however, rather

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than investments in public goods such as roads, research and development. Against this background, reviewing agribusiness policy, legal and institutional frameworks in Africa is imperative to position the sector to be markets competitive with the rest of the regions. Of significance is to re-align policy and legal framework for the sector to effectively address current goals and challenges at the local, regional and globally. Finally, partnership between the public sector and the private sector needs to be strengthened to empower the private sector as the vehicle for requisite investments to transform agriculture towards increased agribusiness productivity and infrastructure development. In this respect, policy and legislative frameworks must create enabling environment for the success and sustainability of the sector.

### ***Cadre institutionnel et partenariat public-privé pour le développement de l'Agrobusiness en Afrique***

#### ***Résumé***

*La performance des secteurs agricoles et de l'entreprenariat agricole dépend de plusieurs facteurs qui sont étroitement liés et le plus souvent externe à l'ensemble du secteur. Il s'agit de la stabilité macroéconomique, la fiscalité, la gouvernance, le commerce, l'éducation et la formation, les infrastructures et le capital humain, et le développement social. Atteindre les objectifs de croissance des entreprises agricoles nécessite la mise en œuvre, entre autres, de mesures prudentes en matière de fiscalité, de politiques monétaire et de taux de change. En Afrique subsaharienne, on observe des politiques inappropriées et une faiblesse des systèmes de gouvernance qui dominent l'environnement macro-économique des investissements destinées aux entreprises agricoles. Selon la Banque mondiale, la clé 2013 des défis à relever sont: les politiques problématiques et erratiques dans les marchés agricoles pour ce qui concerne les entrées/sorties, un environnement des affaires faible pour l'investissement agricole dans la transformation en aval et les activités y afférentes, les infrastructures inappropriées et les coûts élevés de transport, les difficultés pour les investisseurs d'accéder aux droits fonciers sécurisés et négociables, et pour les gouvernements de protéger les droits des petits exploitants dans le même temps, les difficultés pour les petits agriculteurs et les petites entreprises d'accéder aux technologies, aux compétences et aux finances. Ce chapitre traite de ces contraintes et des opportunités existantes, dans quelles mesures celles-ci impactent la performance des entreprises agricoles, et étudie les moyens possibles de les faire disparaître de l'environnement de l'entreprenariat agricole en Afrique.*

## Introduction

The agribusiness sector comprises of business activities performed from production/farm to the consumer. Agribusiness is characterised by diversity and high level of interdependence with various other sectors and disciplines of the agro-food industry. The sector is a dynamic, complex business with various challenges in the entire value chain (production/ farm - consumer). It deals with management related business issues which includes: development, strategic management aspects, marketing management and product differentiation. Agribusiness operates competitively in a globalised world with risk and policy considerations are among key challenges.

Agribusiness is the principal source of value addition for primary agricultural products and a catalyst for the development of efficient value chains. The sector is a contributor to improved product quality and safety and a provider of services that allow food to flow from production to consumption. It is also the biggest generator of employment and income opportunities for majority of Sub-Saharan Africa economies.

The success of agribusiness is embedded on successful food chain coordination, value creation, and institutional innovations for creating conducive business climate. To a large extent, the sector's policy regulation depends on several factors that are closely linked, but are external to the wider sector. For instance, agribusiness is subject to severe public sector regulations, political and economic stability, among others. Other factors which influence the sector's performance directly or indirectly include policy on macroeconomic stability, taxation system, governance, trade, education and training, infrastructure, and human and social development. The complex and interdependence nature of agribusiness sector from private perspective is summarized in the points below:

What agribusiness and private sector require from Government?

- Stable political and enabling economic/ business environment;
- Fair tax regime (harmonized taxation system);
- Local access to finance and credit;
- Provide opportunities for employment creation;
- Free movement of capital and people;
- Sound relationships and open door policy;
- A Government that listens and acts wisely;
- Facilitate cross border (international & regional) trade;
- Sound strategies, innovation and competitiveness;
- Create economic growth opportunities;

- Ease of doing business – curb corruption.

Therefore, for almost all countries in SSA whose economies still heavily depends on agriculture and agribusiness sectors their achievements of desired growth targets will require implementation of prudent fiscal, monetary and exchange rate policies. In addition, enhanced efforts to raise the level of investment in agribusiness and savings and accelerated structural reforms to increase the efficiency of both physical and human capital are needed to raise total factor productivity.

### **Business environment and capacity challenges for agribusiness**

Agribusinesses and agriculture operate in a complex global, changing business environment. It needs to respond to changes at different levels (e.g. agri-infrastructure, policy level, supply chains, investments in food processing, cold chains, markets, consumer preferences, among other considerations). Similarly, there are unique set of risks and uncertainties which increases level of complexity (weather, diseases and pests, markets and competitiveness/price volatility, shortages, climate change, oversupply due to changing trade flows, energy and oil prices, exchange rates, etc.). Agribusiness Managers and stakeholders need to learn to manage these issues effectively by developing talents and skills, innovations and technologies to cope with these challenges. Also, required is a dynamic curriculum for university/ tertiary institutions training offering to meet these challenges and needs of agribusinesses by generating and transferring agribusiness skills, technologies capable of influencing the agribusiness innovation system.

In Sub-Saharan Africa (SSA) there exist inadequate policies and poor governance systems which dominate the macro-economic environment for agriculture and agribusiness, thus not effective to full unlock the existing potential (Akinbamijo,2013). Some of these policies have been there since independence and targeted high taxation of the sector to raise government revenues through export taxes or to keep food prices low for urban consumers. The situation has however improved dramatically even though policy reform at the macro level is on-going at a slower pace than expected in much of Africa. Also, overall investment incentives have improved significantly. World Bank, 2013 cites that most parastatals operations in agricultural markets have been scaled down. Even so, market interventions in several countries in the form of border restrictions and government purchases and sales of food staples continue to undermine private investment in food markets. Likewise, public expenditures on agriculture, which declined to only 4 percent of budget expenditures in the early 2000s, are beginning to rise (World Bank, 2013). Further, World Bank 2013 states that part of the increase has been in the form of input subsidies, however, rather than investments in public goods such as roads, research and development.

Reviewing agribusiness policy, legal and institutional frameworks in Africa is imperative to position the sector to be competitive with the rest of the regions. Of significance is the need to re-align policy and legal environment in the subsector with current goals and challenges in the local, regional and international spheres. Much of the legislation in SSA member states have not been updated in a long time, rendering it ineffective and difficult to implement. In addition, institutions in the subsector are weak or underperforming.

### **The Academia and Agribusiness**

It is widely recognized that the agribusiness sector also faces challenges of low capacity in human, physical and financial resources. A policy on retooling of the existing manpower and development of innovative curriculum which addresses the basics and the needs of the industry as well as undertaking relevant research to inform policy makers is critical. Similarly, the academia needs to proactively lead in providing assistance to the government to formulate policies that are objective, credible and workable. This can be realized by the academic (universities) identifying gaps in the policy environment and provide intellectual capacity as the engine for innovation and entrepreneurship. Specifically, areas which need policy intervention for policy and legal reforms include development of national policies for agribusiness value chains and institutional capacity strengthening to facilitate efficient service delivery and attainment of sector objectives. All relevant laws and policies need to be reviewed to reflect current practices. Where none exist, they should be formulated in collaboration with stakeholders. The roles of the academia role in agribusiness are summerised below:

Understand what their clients/markets (private sector, government, farmers, etc.) agenda, require and partner with them;

- Be critical, objective & solutions driven;
- Be able to provide constructive guidance, mentorships/ internships;
- generate technologies, test & validate concepts, products & determine feasibility;
- Catalyze the process of bringing the role players together;
- Promote communication & coordination in all the linkages.

## Major Players in the Agribusiness Sector

The major players in the agribusiness sector comprise of the following among others:

1. **Farmers:** Producers of food and raw materials;
2. **Government:** Provide enabling environment; as it is a major regulator, deregulator, provides support, employer, & customer;
3. **Private Sector:** Brings investments, creates jobs, markets, & operates the value chain;
4. **Universities:** Influences & educates people through teaching & research;
5. **NGOs/Civil Society:** Civic education, development promotion, stakeholder mobilization, advocacy, lobbying, awareness creation and public education, etc.

## Learning Objectives and Outcomes

This chapter provides a valuable and timely contribution to our understanding of the role of policy in agribusiness development across Africa. It synthesizes important policy related aspects by building on a diagnosis of specific policy issues and shows how a dynamic policy framework and strategic partnerships can contribute to agribusiness sector growth. The chapter contributes significantly to our practical knowledge on policy-oriented advice that draws extensively on successful experiences of countries from within and outside Africa. It is designed to inform a wide range of stakeholders (students, lecturers, researchers, policy makers, investors, producers, development practitioners, NGOs/ civil society organizations, among others) on key policy ingredients that galvanizes public and private initiatives that will empower Africa to realize its huge but untapped agriculture and agribusiness potential.

Thus, the objectives of this chapter are to:

- i. To introduce the reader to the importance of policy, enhance understanding of the role of policy and institutional innovations in the practice of agribusiness related enterprises;
- ii. Serves as a resource for trainers preparing and conducting training in agriculture agribusiness industry to identify and implement policies and strategic partnerships that enhance benefits of agribusiness services to promote economic growth environmental conservation;
- iii. To contribute to policy formulation processes, implementation, monitoring and evaluation on matters such as trade and marketing in agribusiness and related natural resource management;

- iv. Promote stakeholders, including private sector driven platforms bringing together different players in agriculture and agribusiness value chain in sharing knowledge, information, experiences and best practices;
- v. Mobilize human and financial resources for sustainable partnerships including collective lobbying for enabling policy environment for agribusiness development;
- vi. Catalyze, coordinate and harness the efforts and expertise of private and public sector players to enhance investment and policy strategy in agribusiness development programmes;

At the end of this chapter it is envisaged that the reader shall be able to:

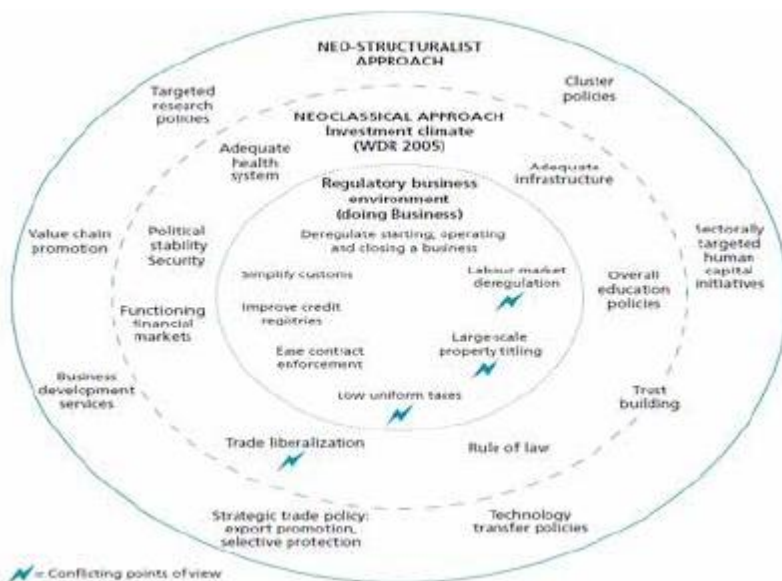
- i. Understand the concepts and theoretical groundings of policy and legislation relevant to agribusiness development programmes;
- ii. Identify the fundamental factors influencing policy formulation process and implementation in agriculture and agribusiness sector;
- iii. Comprehend, interpret, explain and apply agricultural and environmental policies and practices governing agricultural and agribusiness sector;
- iv. Advise agricultural and agribusiness stakeholders on agribusiness policy framework including sustainable natural resources management and the environment;
- v. Provide intellectual and strategic inputs in analysis and identification of researchable and developmental issues, including case studies which underpin agribusiness and agriculture;
- vi. Articulate strategy, disseminate and up-scaling best practice policies and institutional innovations in agribusiness; and,
- vii. Advise in policy, institutional innovations and capacity development strategy for agribusiness best practices.

### **Macro-Economic Policy Framework for Agribusiness**

The Sub-Saharan African (SSA) Government's role is to ensure that macroeconomic stability is achieved and maintained to support agribusiness sector. Many SSA member states are laying the foundation through various reforms which are being implemented using various approaches as indicated in the framework in Figure 1. For instance, the macroeconomic framework of low and stable inflation and interest rates, a sustainable public sector debt position, and a competitive real exchange rate to support export-led economic growth are but some of the policy strategies being put in place. These frameworks will



help to deliver high and sustainable levels of growth, employment and poverty reduction of which agribusiness is a major contributor.



**Figure 12.1:** Enabling business environment framework approaches being taken by SSA countries to support agribusiness sector

***Policy on Taxation Systems of agribusiness commodities***

While farmers in many countries are subsidized sometimes by as much as 100 per cent, SSA farmers face numerous direct and indirect taxes, which make agriculture uncompetitive internationally. The central government and the local authorities charge a wide range of taxes, levies and fees on farm produce and forestry products, and on farm inputs and services. These taxes, levies, cesses and fees distort market prices and make farm produce uncompetitive on the domestic and international markets. It is also difficult to efficiently administer multiple agricultural taxes.

Some taxes, such as the local government’s cess, create artificial barriers to the movement of goods and create fertile ground for corruption. To remove these fiscal disincentives and encourage private sector investment in agriculture, forestry and wildlife, the Governments need to review all taxation laws and regulations to rationalize taxes, cesses, fees and levies charged on agricultural and agribusiness products by local authorities and the central Government. This will ensure that such charges are paid only where a service is being provided.

### ***Policies to enhance private investment in emerging agribusiness value chain markets***

According to World Bank report 2013, Agriculture and associated industries are now favored sectors for foreign direct investments, private equity investments, and sovereign wealth funds. Total foreign direct investment flowing into agriculture and agribusiness in developing countries was estimated at around US\$ 13 billion for 2006–07. While much of this investment is targeted to Brazil and other Latin American countries, investors are also flocking to Africa, which received about US\$ 1 billion in that period. Investment has been even more active since the 2008 food crisis, especially direct investment in farmland, although often to the detriment of local communities.

While Non-governmental organizations (NGOs) fostering private sector partnerships in Africa are enthusiastic about the interest of private investors, experience (Deininger and Byerlee (2011); Miller et al (2010); ReSAKSS (2011), shows that speculative land investments do not automatically benefit local populations and end up compromising the rights of local communities. Many local and international Civil Societies Organizations/ NGO are optimistic that “Africa is where agribusiness innovation is going to happen” and equated current conditions to those in Thailand and Vietnam in the years when their agribusiness industries started to take off. To this end, Africa must seize this opportunity to put in place enabling policies to enhance private investment into emerging agribusiness value chain markets in order to make them competitive with the global market.

### ***Agribusiness investments policies to enhance efficiency of smallholder production and job creation***

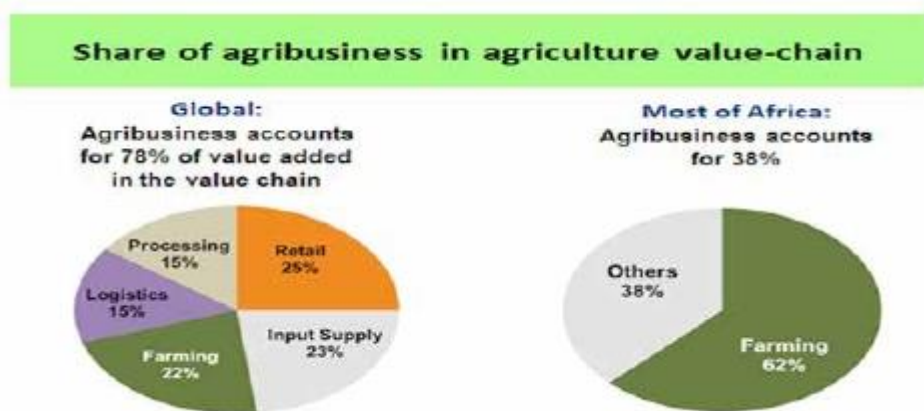
Africa’s agricultural production is dominated by smallholders find it difficult to participate in some industries in which demanding standards prevail, such as fresh horticultural and floricultural exports, or in which processing benefits from large-scale production, such as sugarcane. These industries are typically labour intensive, however, and create jobs. For example, horticulture requires 3–5 times more labor per hectare than traditional smallholder agriculture. Even large-scale plantations such as sugarcane and oil palm plantations can be quite labor intensive. Realizing the benefits of these industries requires policy framework which govern investors to respect the land and water rights of local communities, uphold labour standards, implement appropriate environmental safeguards, and build “social capital” (FAO, 2007).

### ***Policies for structural transformation in agribusiness in Africa***

Africa’s policy reforms must target the generation of jobs, particularly the youth, increase incomes, and food so badly needed by Africa’s growing population. In order to realize the goal of this structural transformation over the next 20 years,

agro-industries need to undergo a structural transformation as profound as that required of farming. Obviously, the transformation of agro-industries and farming are inextricably linked, and the growth of vibrant agro-industries is essential to offer employment for the large number of smallholder farmers who are unlikely to get out of the poverty bracket.

Agribusiness-based industries are strategically positioned to kick-start the development of broader manufacturing industries. On the one hand, agribusiness (agro-industry) encourages locally based supply chains to develop; on the other, the agricultural sector provides material inputs for most early stage manufacturing, such as food processing, textiles, and leather. The lack of cheap and reliable supplies of such inputs is often the single largest constraint on the development of a competitive light manufacturing sector. Agro-based industries can also provide the skills, services, and infrastructure for wider industrial development, especially if they are clustered. As shown in Figure 12.2, Africa’s agribusiness currently accounts for only 38% of the agriculture value chain compared to the global share which is 78% (FARA, 2013). This implies that Africa must shift its policy focus to catalyze value addition in favour of agribusiness growth by minimizing export of raw unprocessed goods into the global market which makes Africa’s agribusiness less competitive.



**Figure 12.2:** Share of agribusiness in agriculture value-chain (Source: FARA, 2013)

FAO (2007; 2011); UNIDO (2010, 2011); World Bank (2013) cites examples that include among other agribusiness commodities such as the palm oil clusters in Southeast Asia, which have led to downstream food industries; the maize-soy-poultry complex behind growing poultry exports from Thailand and Brazil; the sugarcane cluster in Brazil, which supplies the ethanol industry; and Pakistan’s textile exports based on domestic cotton. World Bank, 2013 states that in Brazil, it is estimated that districts where rapid sugarcane expansion occurred have built infrastructure and experienced an economic growth rate that is 0.5 percentage points higher than in comparable districts with little or no expansion. Sugarcane

is four times more labor intensive than the cattle industry it replaces. Such clusters are in their infancy in much of Africa. For example, a global agricultural processor commented that one challenge that it and its partners had to overcome in establishing a new cocoa-processing plant in Kumasi, Ghana was the small size of the city's industrial base (World Bank, 2013).

### ***Policies to enhance farmer access to inputs and credit***

To increase agricultural productivity and improve farming as a business (agribusiness), farmers need access to inputs and credit. Policy framework need to be put in place to facilitate access to appropriate credit packages suitable for small-scale producers. This will enable producers access key inputs such as fertilizer, agrochemicals and seed. Public policies which support capital investments for irrigation infrastructure, value-addition technologies and general farm development, including compliance with food safety regulations is critical.

To this end, Africa's agribusiness sector will employ the following interventions:

- Develop appropriate credit packages suitable for small-scale producers;
- Improve access to key inputs; and,
- Implement the flagship projects such as fertilizer cost-reduction investment.

As outlined in many African states policy documents (e.g., Vision 2030 of Kenya and in its medium-term plan), the flagship fertilizer cost-reduction investment project will be implemented in collaboration with private sector partners. It will review institutional ability to establish fertilizer manufacturing plants or import and distribute fertilizer in bulk to reach all producers and investors at competitive costs with the global market price. Such an enabling policy will make agribusiness commodities competitive in the world trade. Box 3 gives the characteristics of successful public private partnerships

### **Public-Private Partnerships Strategies for Agribusiness**

In agriculture and agribusiness, the private sector constitutes beneficiaries and resource mobilizers to transform economic operations. In partnership with the public sector, the private sector is the vehicle for requisite investments to transform agriculture towards increased productivity, agribusiness, and infrastructure development.

The private sector draws strength and legitimacy from the public-private partnerships in the framework of the National Economic and Social Councils, National Business Agenda, the budgetary process sector working groups,

ministerial stakeholders' forum and ministerial task forces created through legal instruments such as Gazette Notices. The initiative builds and uses private sector capacities and synergies through collaborating, engaging and networking to promote efficiency and effectiveness in service delivery.

In agriculture and agribusiness value chains, linkages between agro-based private sector comprises both profit-driven and not-for-profit (civil society) non-State actors are critical. Such actors could be broadly categorized into farmer or producer organizations that include:

- primary producers-individual farmers and producer companies, farmers/producer groups, producer organizations, commodity-based associations, farmer federations;
- various categories of cooperatives, agribusiness firms, individual entrepreneurs, cooperative societies, agricultural input dealers;
- agricultural commodity processors, packaging agents, transporters and warehousing agents;
- financial service providers-microfinance institutions, commercial banks, Savings and Credit Cooperative Organizations (SACCOs), and agribusiness development;
- technical and professional service providers-extension, research, insurance, legal, consultancy, quality assurance and education, training, information; and,
- civil society, local and international NGOs, faith-based organizations, community-based organizations, other resource mobilization organizations and opinion leaders.

-Many countries in SSA have a variety of these actors. For instance, in Kenya the Kenya Private Sector Alliance (KEPSA) is a coalition of private sector institutions such as business associations, federations and professional bodies. These organizations like KEPSA engages Government in structured consultations and policy dialogue towards improving the business environment, accelerating transformation of public sector institutions, promoting private sector cultural change, facilitating growth through expansion of trade, improving productivity and competitiveness of enterprises, and supporting entrepreneurship and development of micro and small enterprises in line with the national development agenda. The principal characteristics of partnerships in agribusiness sector are summarized below:

- Mutual benefits and trust;
- Strong, flexible & creative leadership;

- Strategic thinking;
- Shared vision of success;
- Sharing information, knowledge, intelligence & experiences;
- Understanding agribusiness & its complexities;
- Talent development;
- Entrepreneurship & innovation;
- Solutions driven processes;
- Acknowledge interdependencies & others contribution;
- “Getting things done”.

Private sector issues are consolidated into one major agenda cutting across all sectors of the economy, including agribusiness sector. Individual organizations identify key priority areas and work together with the Government to find practical solutions to issues. At the national level there are National Federation of Agricultural Producers that coordinates and facilitates functions and processes of agricultural producers and producer organizations along various agricultural and agribusiness value chains. Similarly, the Cooperative Alliances coordinates commercial agricultural services in line with producer management through a variety of cooperative societies. Currently, the federations chair the Agricultural Sector Board of Private Sector Alliances, making it the private sector focal point on various consultations and functions under the public-private partnerships implementation frameworks in most countries.

The private sector will continue working closely with the Government to ensure services are delivered to producers and other players through the following interventions:

Facilitating organization of smallholder producers at all levels

Developing and implementing a framework and instruments for strengthening institutional capacity of producer organizations

Fast-tracking legal and regulatory reforms to promote private sector engagement

Promoting private sector participation in agro-processing

Developing a mechanism for recognizing and supporting integrated innovation in agricultural value chains.

### Strategies for improving partnerships and linkages in agribusiness

Considering the multi-stakeholders' nature of agribusiness sector, it is imperative that appropriate strategies are put in place to enhance collaboration. Figure 12.3 outlines some of the key players in agribusiness sector. The strategies to improve partnership and cooperation among these key stakeholders are summarized below:

Formulation of policies encouraging PPP's to develop internship programmes to assist students, lecturers and build capacity and expertise in the private sector's;

The government should address economic, social and environmental challenges;

Establishment of forums where the government relates with the academic (universities), agribusiness (private sector), and producers;

Increasing the role of private sector in rural economics, and PPP investment in the agricultural sector.



**Figure 12.3:** Strategies for improving partnerships and linkages (Source: OECD, 2012)

## **Policies for Regional and International Cooperation in Agricultural and Agribusiness Trade in Africa**

The main constraints to internal trade in agribusiness include high transport costs due to the poor state of roads, high cost of energy, and lack of proper handling and storage facilities. In the case of livestock trade, inadequate cattle-holding grounds and interference with stock routes have led to poor access to domestic markets.

The competitiveness of SSA agribusiness commodities/ produce has been undermined by inadequate infrastructure such as poor roads and railways that increase vehicular maintenance costs; high port and road charges and tariffs; and slow and outdated communications and infrastructure that impede the flow of market information. Majority if not all the SSA governments are signatory to several trade protocols and agreements—the East African Community, the Inter-Governmental Authority on Development (IGAD), the Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), the World Trade Organization (WTO), and Special EU and United States trade preferences provided to most African countries further opportunities in new products such as biofuels and horticultural crops. SSA governments must take advantage of these opportunities provided by regional and international agreements to attain a certain level of global competitiveness in agribusiness. Trade barriers that increase uncertainties and transaction costs are being removed to provide the private sector with the impetus to plan production, processing and marketing for external markets instead of producing solely for subsistence and internal markets.

As a first measure, the SSA Governments regional trading blocks are simplifying the trade procedures for cross-border traders. Relevant government institutions created to promote trade are proactive in this task. Measures are being taken to improve farmer capacity to add value to their produce to make it more competitive. In terms of market proximity, Africa has significant locational advantages, real and potential. Much of Africa is physically close to big markets in the Middle East and Europe. Some countries already capitalize on low backhaul airfreight charges to Europe to export horticultural products. Better road networks and transport corridors are opening new markets; examples include exports into the Persian Gulf market from western Ethiopia via Port Sudan and the nearly completed Abidjan–Lagos highway.

The trading opportunities cited in the regional and global trade markets will be powered by the dynamic value chains that link to smallholders thereby contributing broader benefits. Considering the dominance of smallholders in all African countries, broad-based economic growth will depend on connecting smallholders to markets. Africa's failure to provide basic agricultural services, along with the lack of financial markets for deepening agricultural investments, opens opportunities for agribusiness to enter into contractual and other types of partnerships with smallholders to source raw materials. As observed by Deuss



(2011); Martinelli et al; (2011) Staatz (2011:86); World Bank (2012b), this setup works best where immediate post-harvest aggregating, processing, packing, or shipping facilitate the enforcement of contracts, such as with sugarcane, tea, oil palm, and fresh horticultural and dairy products makes agribusiness inclusive.

### **Agribusiness Governance Policy**

Majority of SSA Governments are taking bold measures to combat corruption, promote good governance and instill a sense of financial discipline and prudent management of the economy. As a result, SSA governments' relations with development partners have improved dramatically in recent years. This has resulted in a major increase in external assistance, which has had a positive impact on the inflow of foreign investment, trade, and the delivery of services by the Government.

Steps are being taken to consolidate and strengthen the renewed working relations with development partners as well as foreign/ global trade. Improved agricultural sectoral and donor coordination, together with a sector-wide monitoring and evaluation framework are some of the elements of sustaining and strengthening agribusiness relations with external partners. These require strengthening and formalization by periodic reviews and evaluations between SSA Governments and development partners.

Opportunities are available to improve good governance and management of agribusiness enterprises by developing networks and partnerships between cooperative societies to reduce internal competition among them. Some of the opportunities to be explored include working with stakeholders to form joint ventures with the agribusiness sector, creating new initiatives such as cooperative private partnerships, getting direct investments in identified areas and working with the export processing zone authority to create export processing zones in areas with active cooperative societies.

#### ***Sustained effort to strengthen governance and transparency***

Also critical is enhancement of accountability and transparency in agribusiness. Many people have expressed concerns regarding corruption as being a huge barrier that undermines doing business, agribusiness inclusive. A streamlined, predictable agribusiness climate encourages efficiency and accountability. It reduces corruption while encouraging growth. The equation is simple: More investment flows to places that have transparent business environments, and more jobs follow. Corruption thrives where rules are unclear and applied unevenly. It exerts a hidden tax on business and innovation, costing the countries jobs and income.

Corruption has been cited as expensive and a threat to economic growth and the provision of government services. It jeopardizes development goals and

diminishes government services. People do not get the benefit of their taxes because the money has disappeared into people's pockets. Money spent to deliver public goods such as safe roads and health care services does not go as far.

An infrastructure like road is not built with quality materials or to the specifications in the contract; agribusiness equipment is not purchased because the allocated funds are not in the coffer; schools and related institutions do not receive the basic tools they need for education – thus, cannot educate the next generation. In the end, everyone suffers. While every country struggles to some measure with the debilitating effects of corruption in the public and private sectors, successful countries do not tolerate corruption, they fight it. Fighting corruption also means fighting impunity for corruption, irrespective of the social and political status of someone suspected of having committed a crime.

To succeed, SSA States need a sustained effort to strengthen governance and transparency together with rigorous enforcement of anti-corruption laws. Only a strong commitment coupled with genuine political will at all levels of government, national and local can put a stop to corruption. Strong democratic institutions act as a bulwark against corruption. Most countries are making progress by enacting laws and policies in constitution documents to strengthen the judicial system in order to make government more accountable on the national level. Doing so will build trust and enable the governments to deliver the promise and potential of agribusiness.

All agribusiness partners need to stand ready to collectively address by putting in place the systems, processes, and procedures needed to enhance governance to make progress in the fight against corruption. It is common knowledge that many Development Partners have in many occasions extended Technical and Financial Assistance to help African governments strengthen integrity and accountability systems within public administration. Specific attention must be given to financial accountability regarding public resources.

In addition, the international community and partners in agribusiness are prepared to continue its support to a functional system of checks and balances in agribusiness sector. Strengthened oversight of law enforcement agencies and the Judiciary are key to effectively combat corruption. Finally, we can expand commitment with civic education campaigns and build systems that give people a way to report problems when they see them. We can also design ways to simplify and streamline business rules in agribusiness. Many of our countries have experience in curbing corruption and improving the business environment and we are ready to share it.

All countries in Africa suffer poor public governance which is corruption related challenges. As citizens, we want to receive the benefits from government services we work hard to support. Collectively we can and will prevail in the fight to end bribery, pay-offs, and unfair competition in agribusiness among others if we have the will to do so.

## **Policies for Mainstreaming Natural Resource Management in Agriculture and Agribusiness - Experiences from East Africa**

It is recognized that policy support is an essential ingredient for widespread adoption and scaling up of natural resource management technologies and innovation in agribusiness and agriculture. Mainstreaming NRM practices requires favourable policy at the local/community and national levels. The policy context in which agricultural institutions operate is shaped by national, donor agencies, the private sector and in some cases, farmer organizations policies. Good policies can stimulate the agribusiness players or institutions to improve performance, build stronger links and address the needs of resource poor farmers effectively, while poor policies can be a hindrance to these institutions operations. It is essential that governments devise a range of policy instruments that can influence behaviour for the adoption of technology innovations and institutions that promote sustainable management of natural resources to facilitate agribusiness and subsequently alleviate poverty. There is therefore need to create policy environments which impacts positively in resource management.

According to a study carried out by a research consortium under the Association for Strengthening Research in East and Central Africa (ASARECA) in East and Central Africa (Obonyo, et al., 2012), there are no specific NRM policy in any of the five countries sampled but there are many policies that have been formulated to address environmental and NRM related issues in the East African Region. The study identified key milestones for NRM related policies in each of the countries. For instance, in Tanzania, most NR related policies were formulated as a result of increasing demand for land due to increase for both human and livestock populations and also for restructuring and adjustments of the economy, particularly that which occurred during the 1990s. Out of a total of 16 National policies and strategies reviewed six policies appeared to be directly linked to agribusiness and agriculture as well as NRM issues. These were the Community Development Policy (1996), National Environmental Policy (1997), National land Policy (1997), Agriculture and Livestock Policy, National Policy on Non-Governmental Organizations (2002) and National Water Policy among others.

In Kenya, the existing policy framework was generally supportive of NRM (Yatich *et al.*, 2003). Notably, Vision 2030 of the Kenya Government deals with the environment issues under the social pillar. Unfortunately water issues are treated separately from forest and land issues. The vision has flagship projects dealing with the rehabilitation of the water towers, increase of forest cover to 10% and harmonization of environment-related laws for better environmental planning and governance. The Environmental Coordination Act (1999) provides for the establishment of National Environment Council (NEC), National Environment Management Authority (NEMA), decentralized environment committees at the provincial and district levels that are directly linked to NEMA at the national level, National Environment Trust Fund, National Environment Restoration Fund. Agriculture Act (Cap 318) also has several provisions for the development of land in accordance with sound land use and

stop land degradation. However, due to inadequate resources to monitor and sanction violators and failure to include local communities in management of agricultural resources, the Act is not being fully implemented and therefore land degradation continues unabated which affects agriculture and agribusiness alike. The agriculture policy and strategy for all the Countries of East Africa are rather silent on land conservation but the Agricultural Sector Coordination Units (ASCU) have thematic working group on sustainable land and natural resource management. The study indicates there is a no standard conceptual framework for policy formulation (sometimes prejudiced by experience and donor interests). The policy frameworks for integrated natural resource management for agribusiness in Eastern Africa is presented in Box 12.1.

In Uganda, several NRM policies have been enacted with the attendant legal framework such as the Constitution – Article 245, (1995), National Environment Management Policy (1994), Water Statute (1995), National Environment Statute (1995), Wildlife Statute (1996), National Forestry and Tree Planting Act (2001), Wetlands Policy (1995), Land Act (1998), Local Government Act (1997). Uganda has also developed a number of plans within the Natural Resources Sector. The key plans include the National Forest Plan, Wetlands Sub-sector Strategic Plan, Land Sector Strategic Plan, National Environment Action Plan and Wildlife Protected Area Systems Plan.

The Government of Uganda has further developed complimentary priority national strategic programs which bear direct relationships with agriculture and agribusiness and act as a guide for the national development plans. The most important ones include Poverty Eradication Action Plan (PEAP), Plan for Modernization of Agriculture (PMA), National Agricultural Advisory Services (NAADS), Poverty Action Fund, and Public Sector Reform Program. There are six general by-laws on agriculture and natural resource management pertaining to soil and water conservation, food security, tree planting, bush burning, controlled grazing, and swamp reclamation in four pilot communities of Kabale (Sanginga *et al.*, 2004).

### ***Natural Resource Management Policies and institutional barriers related to agribusiness***

The experience from East Africa shows there is general unawareness about institutional policies by respondents (in some of the countries studied in East Africa region) who work for the organizations interviewed is an indication that they are not involved in policy formulation at the institutional level (Table 12. 1).

**Table 12.1:** Policy and Institutional barriers to mainstreaming Integrated Natural Resource Management (INRM) in agriculture and agribusiness development

<b>Barrier</b>	<b>Kenya</b>	<b>Uganda</b>	<b>Tanzania</b>	<b>Rwanda</b>	<b>Ethiopia</b>
Unclear guidelines on NRM policy implementation for agriculture	Yes	No information	Yes	Not specific	Yes
Policies are designed using top – down approaches therefore lack ownership and accountability and limited awareness of the policies by end users	Yes	Yes	Yes	Yes	Yes
Inadequate support to NGOs by the government	Not specific	Not quite	Yes	Yes	Yes
Contradictions and disharmony in NRM related policies related to agric	Yes	Yes	Yes	Yes	Yes
Inadequate communication and coordination among the various NRM agencies	Yes	Yes	Yes	Yes	Yes
Lack of interpretation skills and implementation capacity at local level	Yes	Yes	Yes	Yes	Yes
Lack of clarity/confusion between policy, laws and institutions related to agriculture	Yes	Yes	Yes	Yes	Yes
Absence of central depository of information on natural resources	-	-	Yes	-	-
Land tenure system & regime	Yes	Yes	-	Yes	-
Insufficient legal support by government to community- by laws	Yes	Yes	Yes	Yes	Yes
Political interference	Yes	Yes	Yes	Yes	Yes

Source: Obonyo *et al.*, 2012

The survey results above have shown that there are policy and institutional barriers to mainstreaming NRM across the five countries which are summarized as follows:

Policies are designed using top – down approaches, therefore lack ownership and accountability;

Contradictions and disharmony on policies exist. This is another barrier as far as streamlining NRM in the implementing institutions is concerned;

Lack of interpretation skills and implementation capacity at local level;

Confusion between policy, laws and institutions;

Political interference;

Insufficient legal support by government to community by-laws; and,

Inadequate communication and coordination among the various NRM agencies.

The confusion regarding legislation and policies by some respondents is an indication that there is need to enhance level of awareness on policies at national, institutional and local levels for the effective implementation of NRM related to agriculture and agribusiness development.

### ***Strengthening local institutions in mainstreaming INRM in agriculture and agribusiness***

Mainstreaming NRM policies and institutional innovations in agribusiness and agriculture requires strengthening of local institutions and public organizations. Similarly, Nkonya et al. 2006 noted that it is imperative to involve institutions focusing on agriculture, agribusiness and NRM in order to inform and influence the enactment, awareness of and compliance with regulating agencies. Local level policy dialogue platforms are critical in this aspect. The responsibilities of the platforms include among others to coordinate the review of existing by-laws, initiate new by-laws, facilitate and monitor their implementation and linking with higher level policy institutions and development organizations. Such institutional mechanisms can be sustained by having facilitation from central government and partners in agribusiness value chain. In addition, the local by-laws sought should be given legal authority so that they can be enforced.

### ***Linking organizational policies to agribusiness and NRM***

Organizational policies can be aligned to support mainstreaming by having decentralized organization structure, shared resource use and flexible financial policies. This suggestion is in agreement with (Sanginga *et al* 2004) who argued that flexible and decentralized implementation structures, shared resource use and harmonization of mandate areas are important strategies to enhance institutional collaboration. It is also important to have mechanism that promote the interaction of all agribusiness and NRM practitioners (rather than only extension agents) with farmers.

***Mechanism for providing information to policy makers in agriculture***

In many cases both local and national policy makers do not have sufficient information to enable the enactment of good policies. A proactive role of research and development therefore is to assess the information needs of policy makers and to develop effective communication strategies for guiding and informing public the policy process. One key strategy for achieving this is to facilitate participatory policy learning events targeting people who make, influence or implement policy, through some powerful tailor-made policy learning events to expose policy makers and other stakeholders to existing practices and knowledge that improve natural resource management for agribusiness. It is important to identify key points of leverage, and recognize short-term opportunities associated with related legislative calendars, planning and budgeting activities, changes in key leaderships, political appointments and government personnel. It is also important to identify and capitalize on crisis situations because windows of opportunity for change can present themselves at times of crises, such as food insecurity, drought, floods, landslides and other natural disasters.

***Building a network of influence***

To be effective, research and education development professionals need to stay close to the policy making process, and exploit opportunities that come along in order to support local communities to have their by-laws translated into political decisions or policies. Reaching and influencing policy-makers depends on research and education development building effective networks of influence between local NGOs with other national and international organizations as well as government natural resource and agricultural sectors. The emergence of leaders at various levels of local government who champion agribusiness and NRM initiatives and demonstrate keen interest provide good opportunities for advancing policies that promote the same. These political and community leaders play an important role in any policy and community initiative.

***Learning from lessons and best practices to enhance enabling policy environment***

- Influencing policy is a long process that needs perseverance, and a sustained programme of interventions and lobbying by different institutions and actors and is only achieved by combining a number of strategies;
- Empowering local community organization gives them leverage to influence policy making at all levels (local, national and regional).

**Box 12.1:** Policy Frameworks for integrated natural resource management for agribusiness in Eastern Africa

**Introduction:** A participatory Stakeholders analyses in many SSA research and development programmes and projects have shown that enabling policy environment and strategic partnerships is critical for sustainable development of agribusiness and resource management. In many of the cases sampled, inadequate policies and related institutional constraints remain an intractable problem for agribusiness development in SSA. This is exacerbated by impacts of globalization of trade/ markets at local, national, regional and international levels. Thus, the objective of this case study is to generate and deploy appropriate policy and institutional innovations which link resource management to agriculture and agribusiness for successful development.

**Situational analysis:** Agribusiness' current and future performance as one of the key drivers for socio-economic development in SSA will continue to be influenced by policy frameworks for resource management and agribusiness practices. Policy making processes are constantly evolving at various levels (local, national, regional and global) often with important implications to agribusiness development. For example, decentralization of decision-making and devolution of authority is becoming a major trend in many African States. This is beginning to influence the way policies are developed and implemented, especially those related to agricultural development, natural resource management, property rights, poverty reduction, land use, among others.

Furthermore, democratization of institutions is helping stakeholders, especially, local communities, women and resource-poor households, investors among others to participate in key decision processes on how these resources managed and utilized. This is particularly important, given that the agricultural sector, including agribusiness is the greatest provider of livelihood, contributor of GDP, food security among other important consideration for human well-being. Considering the fact that SSA region is the poorest and most ecologically fragile make it extremely important to put in place participatory policy frameworks to unlock its huge agricultural and natural resource potential for sustainable development of agribusiness.

**Status report:** The ASARECA initiated regional programme on integrated natural resource management and its linkages with agricultural and agribusiness development has been examined in this case study involving five East and Central Africa Member States – Kenya, Uganda, Tanzania, Rwanda and Ethiopia. The study analyzed the existing policies and institutional mechanisms and how new critical avenues through which sustainable and equitable management of agribusiness can be made to address poverty eradication and the other Millennium Development Goals. These issues are at the heart of the agrarian systems and environmental sustainability crisis facing the SSA region today such as climate change and growing poverty and food insecurity. The study noticed that there is still disconnect on the roles and participation of stakeholders. The role of local communities in formulating policy and institutional innovations to influence how natural resources are managed for agricultural development is inadequate in the design and execution of national development plans in the sampled Member States. The use-driven sectoral policies and institutions rooted in the continent's colonial history remain largely in place. These policies were not crafted with any coherent environmental sustainability goal in mind. They emphasize command-and-control approaches and punishment rather than cooperation and innovative incentives to promote compliance.

The study noted that the effects of inadequate policies and ineffective institutional innovations can be seen in many forms. These include distortions in systems of access to



and control of agribusiness and natural resources, failures to respond appropriately to emerging markets and incentives, and the continued use of obsolete technologies. They also explain the gender inequities and unequal power relations within resource user communities and institutions, which lead to unequal access to, control over and skewed access to benefits from agribusiness resources.

### **Study Questions**

- i. Are people (agribusiness producers/farmers and investors) more likely to adopt environmentally sustainable agricultural land use policies and systems when they have clear rights to resources and are confident of future access to and benefits from agribusiness and natural resources?
- ii. Is security of tenure in agribusiness and natural resources critical in determining how producers, conservationists, rural people and investors secure their livelihoods and alleviate poverty?
- iii. Can the provision of incentives and empowerment of agribusiness and natural resources users to access markets, seize new financing opportunities like those in the carbon markets, and harness their collective local knowledge systems of innovation to respond to agribusiness development challenges.

Besides these considerations, one must explore ways to nurture and retain political will and capacities needed to achieve full participation, transparency and accountability in agribusiness development.

### **Policy on Agribusiness Education, Training, Science and Technology**

The SSA Governments recognizes that educating and training its citizens is fundamental to the success of agricultural and agribusiness development. For instance, the Kenya government's Vision 2030 strategy relies on the creative talents that can raise the country's international competitiveness through enhanced productivity at the micro (agribusiness) and national levels. A literate population is an asset to the agricultural and agribusiness sector as it provides qualified personnel and opportunities for developing and disseminating science and technology, as well as innovation-based solutions to the agricultural sector. It will also help governments to address gender imbalances, youth-related problems and obstacles facing other vulnerable groups by equipping and or retooling them with the skills that enable them to live more productive and satisfying lives in an expanding and diverse economy like agribusiness.

The SSA Governments tertiary institutions such as universities are moving towards responsive, affordable and equitable access to innovative programmes in agribusiness education by developing and operationalizing policy reforms in education that address common challenges such as economic growth, poverty eradication, employment, technical and vocational training among others that addresses basic and functional literacy.

An agribusiness knowledge based economy creates, adopts and adapts to information on production and distribution of goods and services, making it the focal point and engine for rapid economic and agricultural growth. Four elements allow effective exploitation of knowledge in agribusiness:

an economic and institutional regime that provides incentives for the efficient use of existing knowledge, creates new pool of knowledge and encourages flourishing of entrepreneurship in agribusiness;

an educated and skilled population that can create, share and utilize knowledge and innovation in agribusiness well;

a dynamic information and communications infrastructure that can facilitate agribusiness processing, marketing, communication, dissemination and storage of agribusiness commodities for later use;

an effective innovation system comprising a network of agribusiness resource centres, universities, think-tanks, private enterprises, producer groups, federations/ associations and community groups that can tap on the potential of agribusiness.

### **Conclusions**

The need to take stock of where we are as a continent (analysis, review and document) in the context of agribusiness policy will provide us with a clear road map on where we should be or want to be and the strategy (the “how”) to achieve/get to our agribusiness targets at local, regional and global levels. The review process will generate information to inform policy formulation and deployment of appropriate policy and governance options for agribusiness. Agribusiness cannot operate in a vacuum, therefore, African governments must endeavor to support and influence appropriate policy responses to guide sustainable management of agribusiness while safeguarding the natural resources and environment upon which it depends. The quote by Goethe - “*Knowing is not enough: we must apply. Willing is not enough: we must do*” - is a perfect example. Similarly, promotion of key agribusiness value chains (such as dairy, horticulture, fish aquaculture to drive agribusiness) for domestic and external market and trade is critical for the success of sustainable agribusiness sector.

African Governments need to promote policies fostering regional approach that advocates from policy to implementation; that agricultural education must be part of an integrated approach to rural transformation building the knowledge base and broad consensus around a rural transformation agenda; enhances human capacity/ capital development (especially, farmer capacity building in post-harvest/ processing technologies and compliance with sanitary and phytosanitary requirements); emphasis on sustainable management of natural resources and improvement of infrastructure (roads, electricity, water, etc) for agribusiness. In this respect, universities need to forge strategic partnerships with national research systems, private sector, civil society/ NGOs, among others.

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# Chapter 13

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## AGRIBUSINESS RISKS MANAGEMENT

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### Summary

Risks are associated with running a business. Agribusiness is truly a risky business and agribusiness managers grapple with risks on a daily basis. The risks faced in agribusinesses are so peculiar as to differentiate agribusinesses from most other type of businesses. The barometer for measuring the success of any team saddled with managing an agribusiness is how well it surmounts the risks they encounter. Surmounting risks is partly the reason why the agribusiness managers are paid the salaries that they draw. This chapter presents several of the risks commonly faced by agribusiness managers and attempts a classification and characterization of such risks. It also delves into how managers can mitigate many of them especially business risk which can be notoriously high in agribusiness firms and can lead to huge loss of money arising from changing prices of inputs and products, if not appropriately managed. The chapter also touches on the role of ICT in getting the data and information necessary for effective and efficient management and how such can be helpful to smallholders and agribusiness managers. Finally, case studies of successful or burgeoning use of ICT to lower cost of data needed for effective risks management was mentioned for useful lessons by government and agripreneurs in other countries.

### *Gestion des risques en agrobusiness*

#### *Résumé*

*Des risques sont associés à la conduite d'une activité commerciale. Le commerce agricole est véritablement une affaire risquée et les gestionnaires des affaires dans le domaine agricole côtoient les risques quotidiennement. Les risques rencontrés dans le commerce agricole sont si particuliers qu'ils différencient les commerces agricoles des autres types de commerces. Le baromètre de mesure du succès de toute équipe impliquée dans la gestion du commerce agricole est comment elle réussit à surmonter les risques rencontrés. La surmontée des risques est en partie la raison pour laquelle les gestionnaires de commerce agricole sont rémunérés aux salaires qu'ils fixent. Ce chapitre présente certains des risques communément rencontrés par les gestionnaires de commerce agricole et essaie de classer et de*

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*caractériser de tels risques. Il va également en profondeur pour voir comment les gestionnaires de commerces agricoles peuvent atténuer plusieurs d'entre eux spécialement les risques commerciaux qui peuvent être notoirement élevés dans les firmes de commerce agricole et peuvent conduire à de grandes pertes d'argent survenant suite aux changements de cours des intrants et des produits, s'ils ne sont pas bien gérés. Le chapitre touche également le rôle des TIC en permettant l'accès aux données et aux informations nécessaires pour une gestion effective et efficiente et comment cela peut être utile aux petits exploitants et gestionnaires de commerces agricoles. Enfin, des études de cas de réussite ou d'utilisation florissante des TIC pour réduire les coûts des données nécessaire pour une gestion effective des risques ont été mentionnées comme leçons utiles pour les gouvernements et entrepreneurs agricoles d'autres pays.*

## **Introduction**

Risks and uncertainties are phenomena that exist at every facet of agribusiness and they emanate from the fact that agricultural production itself, because of its largely biological nature, also is faced with numberless risks and uncertainty issues (Mafimisebi et al., 2008; 2010). Risks and uncertainty issues in agriculture and agribusiness stem from uncertain weather conditions, pests and diseases, volatile market conditions and commodity prices (Adegeye and Dittoh, 1985; Seperich *et al.*, 2002). Managing agricultural risks is essentially important for smallholders because they lack requisite skills and resources to mitigate, transfer and cope with risks (Downey *et al.*, 2001). Risk also discourages interested prospective entrepreneurs from investing in agriculture and agribusiness (Mafimisebi, *et al.*, 2010). Adequate record keeping to yield data to be analyzed for timely information are essential to efficient management of agricultural risks (Adesimi, 1985). Information and Communication Technologies (ICTs) has proven to be highly cost effective instruments for collecting, storing, processing and disseminating information on risks.

## **Learning Objectives**

At the end of this chapter, a user of this module is expected to be able to do the following:

- (i) define or explain what is meant by risks and uncertainties;
- (ii) identify the various classes of risks;
- (iii) decide on which risks mitigation strategy to use in prospective or existing agribusiness and;
- (iv) identify the role of ICT in getting the information necessary to manage risks in agribusinesses.

## Definition of Terms in Risks Management

**Risk** – this occurs where it is not known what the future outcomes will be, but where the various outcomes may be expected with some degree of confidence from knowledge of past or existing events. In other words, in risks, probabilities of alternative outcomes can be estimated. According to Olayide and Heady (1982) risks are variabilities or outcomes which are measurable in an empirical or quantitative manner. The outcomes or variabilities need not be exactly predictable for any given product/output but the probability of outcome or loss must be capable of being established for a large number of cases or observations.

**Uncertainty** – this refers to situation where the future outcome of events cannot be predicted with any degree of confidence from knowledge of past or existing events. Thus, probability estimates cannot be obtained for uncertainties. The knowledge of the future is less than perfect and as such, the parameters of the probability distribution such the mean, mode range, variance, kurtosis, skewness etc cannot be determined (Olayide & Heady, 1982).

**Risk management** – this involves the identification of risk, evaluation of its potential impact on the agribusinesses and the institution of measures either to eliminate the risk entirely or to reduce its impact.

## Classification of Risks

Risks can be classified based on: (1) changes in the financial position of the agribusiness, (2) the uniqueness of investors' attitude to risks and (3) factors outside investor's control.

1. Classification of risks on the basis of changes in the financial position of the agribusiness. This include:
  - **Pure risks** –The occurrence this type of risks lead to events that result, at best, in a change in the situation of the agribusiness/ organization/individual exposed to the risk. This type of risks more likely, results in severe losses. This means that when pure risks occur, there is no possibility of a gain. Examples of pure risk are fire outbreak in the farm, flooding and sudden disease outbreak;
  - **Speculative Risks** - the outcome of the occurrence of this type of risk may be a loss or a profit. Examples are foreign exchange futures, commodity brokerage, smuggling and commodity/produce jobbing. Speculative risks are generally uninsurable.
2. Classification based on the uniqueness of the investors' attitude to risk.

The risk under consideration here is made up of two parts (a) Unsystematic Risks and (b) Systematic Risks. Unsystematic Risk are



also known as diversifiable, unique, specific, residual, idiosyncratic risk and non-market imposed risks. It is also known as an avoidable risk. It is caused by events such as poor/bad management, location, dependency on limited market and nature of the products. Systematic Risks, also variously known as non-diversifiable, non-specific, unavoidable, general and a market imposed risks are caused by events such as inflation, economic problems, political upheavals, war, death of an important political figure in a country market risk and enabling environment risk.

Of all these causes of systematic risks, the last two are more relevant to agribusiness:

- **Market risks** can include volatile prices of agricultural commodities, inputs (fertilizer, pesticide, seed, and so on), and exchange rates, as well as counterparty risks, theft, risk of failure to comply with quality or sanitary standards, or risks imposed by logistics. These risks usually emanate from market actors (such as traders and exporters), and their effects are transmitted back to the farm;
- **Enabling environment risks** include political risks, the risk that regulations will suddenly be applied, risks of armed conflict, institutional collapse, and other major risks that lead to financial losses for stakeholders along agricultural supply chains.

Risks can be idiosyncratic in which case it affects only individual farms or firms (for example, illness of the owner or labourers, acidic soil, sudden outbreak of a particular plant or animal pest and disease). Risks can also be covariate – affecting many farms or firms simultaneously (major droughts or floods, fluctuating market prices). The high propensity for covariate risks in rural areas is a major reason for the breakdown of informal risk management arrangements and the hesitation of formal financial institutions to provide commercial loans for agriculture (Jaffee *et al.*, 2010).

### **Risk Management Strategies**

Agrarian communities have traditionally employed various formal and informal strategies to manage agricultural risks, either before or after the effects of the risk are felt. *Ex ante* strategies (adopted before a risky event occurs) can reduce risks (by eradicating pests, for example) or limit exposure to risk (a farmer can grow pest-resistant varieties or diversify into crops unaffected by those pests). Risks can also be mitigated *ex ante* by buying insurance or through other responses to expected losses such as self-insurance (precautionary savings) or reliance on social networks (for access to community savings, for example).

*Ex post* strategies (adopted to cope with losses from risks that have already occurred) include selling assets, seeking temporary employment opportunities and migrating. Government sometimes forgives debts or provides formal safety nets such as subsidies, rural public works programmes and food to help farms and firms (and their laborers) cope with negative impacts of risky events.

Although *ex ante* measures allow farms and firms to eliminate or reduce risks, reduce their exposure to risk, and/or mitigate losses associated with risky events, they present real and/or opportunity cost before a risky event actually occurs. In contrast, *ex post* risk management measures respond only to losses that actually occur, but they can have very high real and opportunity cost when that happens. Farmers make decisions based on their evaluation of risks and the resources at their disposal.

Each strategy for managing risks can be carried out through a variety of instruments, each with different private and public costs and benefits which might either increase or decrease the vulnerability of individual participants in the supply chain. When selecting a mix of risk responses, it is essential to consider the many links between risk management strategies and instruments (Jaffee *et al.*, 2010). In sum, agricultural risk management strategies can be classified into three broad categories as follows:

- **Risk mitigation:** This action prevents events from occurring, limit their occurrence, or reduce the severity of the resulting losses. Examples include pest and disease management strategies, crop diversification and agricultural extension advice;
- **Risk transfer:** This action transfers risk to a willing third party, at a cost. Financial transfer mechanisms trigger compensation or reduce losses generated by a given risk, and they can include insurance, reinsurance and financial hedging tools;
- **Risk coping:** This action helps the victims of a risky event (a shock such as a drought, flood, or pest epidemic) cope with the losses it causes, and they can include government assistance to farmers, debt restructuring and remittances. Government and other public institutions, through their social safety net programmes, play a big role in helping farmers cope with risks.

There is a distinct role for both public and private institutions in helping smallholders and agripreneurs to manage agricultural and agribusiness risks. Private interventions include individual action and private arrangements among individuals (either informal arrangements or formal, contractual arrangements). Governments have a supportive role to play here which may include providing infrastructure, information and a suitable framework for private institutions. As noted, governments and civil society also have a role as providers of safety nets.

In terms of probability, risk management can be broken into three principal elements namely; risk analysis, risk measurement and risk control. Risk Analysis involves the identification of risk and its analysis considering the potential impacts if the loss does occur. It may be possible to quantify the potential loss. Risk measurement entails the estimation in term of probability, severity and frequency of a loss occurring and considering the potential impact if the loss does occur. It may be possible to quantify the potential loss. Risk control covers all those measures aimed at avoiding, eliminating or reducing the chances of loss producing events occurring or limiting severity of the losses that do happen, e.g. bio-safety control measures in livestock farms, fire accident protection measures in agribusiness factories/firms. It encompasses risk avoidance, risk transfer, risk insurance, hedging and risk assumption/retention.

### ***Risk Insurance***

Risk insurance is a way of eliminating the uncertain risk of loss for individuals through combination of a large number of similarly exposed individuals, who each contribute to a common fund and pay premium sufficient to make good the loss suffered by an individual. It ensures the survival of on-going agribusinesses and also allows the springing up of new ones thus guaranteeing continuous growth of an economy (Tewe, 1988). Risk insurance usually characterized by a set of conditions in order for an insurer to offer insurance against a particular type of risk. The following conditions are necessary:

- a. Large number of exposure units, which should be sufficiently large and independently exposed to enable insurers to predict future occurrence through past data;
- b. Loss should be fortuitous in so far the insured is concerned and s/he or the organization should not be in a position to gain from the occurrence of the event;
- c. Loss should be capable of measurement in monetary terms (definite in amount);
- d. Loss potential should be sufficiently large to encourage insurance;
- e. Premium should be economically feasible for both the insurer and the insured.

In practice, all these conditions need not obtain before the insurance would take up the risk. It depends on the specific circumstances surrounding the business proposal.

### ***Risk Assumptions – Self Insurance***

This is any plan of risk retention in which a programme or procedure has been established to meet the adverse effects of financing losses. The need for self-insurance may arise from the following sources:

It may not be possible to eliminate risk fully by other techniques;

It may be less expensive than risk transfer techniques;

A prospective client may not want to disclose information required by an insurer.

### ***Risk Financing***

The primary objectives of risk financing are to spread risk more evenly over time, the cost of risks in order to reduce the strain (financial and otherwise), and possible insolvency, which the random occurrence of large losses may cause. The secondary objective is to minimize risk associated costs. This can be done in three ways namely:

- (1) Losses may be charged to current profit as they occur;
- (2) Provision may be made for losses before they occur, either through insurance or building up a sinking/contingency fund;
- (3) When losses occur, they can be financed by loans, which are repaid over the next few months or years.

### **Diversification**

Diversification is a strategy usually adopted by rational investors. Diversification means spreading the commitment of funds in several investments in such a way that if a given line goes bad such an investor has other business lines to fall back on. Diversification may take three major forms which include: (i) Concentric Diversification (ii) Horizontal Diversification (iii) Conglomerate Diversification.

- **Concentric Diversification:** This occurs when a business organization adds new, but related products or services to the existing ones. The key word here is that the products or services are related. For example, a dairy enterprise producing a range of related products/drinks such as milk, yoghurts, cheese. These products revolve around one another hence, the company is undertaking concentric diversification.
- **Horizontal Diversification:** This occurs when a business adds new and unrelated products or services to existing ones but for the present customers that it is serving. The key word is that, although the products

are unrelated, they are meant for the already existing customers, thus avoiding the need to find a new market segment for the products or services. As An example, a farm business may extend its services by operating a school, canteen, laundry services etc. for the staff populace. The main issue is that the services are provided for the existing customers.

- **Conglomerate Diversification:** This takes place when an organization adds new and unrelated products or services to the existing ones with the new products not being principally intended for or targeted to the existing customers. An example of conglomerate diversification can be found in UAC PLC, which has various interests such as in UAC Seed, UAC Trading, UAC Motors, UAC Leasing and UAC Foods etc. It should be noted that the various products/services are not necessarily related to each other in any way. Thus, each operates in a different market from the other and serves a different market segment.

### *How Diversification Reduces Risks*

By diversification, investors are only trying to minimize their risks. Portfolio theory states that the traditional approach to risk analysis considers “2 Rs” that is “Risk and Return” and that their relationship to investment is equally important hence it recognize “3Rs”(Risk, Return and Relationship). This relationship is known as correlation which is of three types: positive correlation, negative correlation and zero correlation. Positive correlation occurs when the performance of investment in one agribusiness enterprise affects the others. If A does well, then investment B must do well Negative correlation occurs where the performance of one investment moves in the opposite director with the other investment. That is, when investment A is doing well, investment B will not be well. In a situation where the performance of one investment has nothing to do with the performance of the other investment, zero correlation is said to be obtained. Such investments are not related.

### **Hedging**

This is a method used to combat the problem of foreign currency risks. There are a number of ways of hedging against/avoiding foreign currency risk according to Akinsulere, (2011). There are:

1. **Forward Contracts:** This is a contract (usually between a bank and a customer) to buy or sell a specified quality of foreign currency at an agreed future date or within a specified future time period. The contract could be fixed if the future date is fixed. It could be floating, if the future date falls within a range. The former is referred to as “Fixed forward contract” and the latter is termed floating/option contract;
2. **Foreign Currency Invoicing:** One way of avoiding exchange risk is

for an exporter (e.g. a Nigeria Exporter) to invoice as foreign customer in Naira (domestic currency of the exporter). In this way, only the exporter will be able to avoid exchange risk, the burden of the risk will be passed on to the importer. However, if the Nigerian exporter decides to take the on the exchange risk, he will invoice the foreign customer in foreign currency (e.g. \$ as the case may be);

- 3. Matching:** If a Nigeria company expects to receive some earnings in foreign currency and at the same time expects to incur certain expenses in the same foreign currency, it may plan to offset its payments against receipts in the currency. In this way, movements in exchange rates between the Naira and the currency in question would be irrelevant, to the extent that matching can take place as there will be no need to purchase or sell foreign currency. This process of matching would be easier if the company were able to maintain a Domiciliary Account i.e. maintain a bank account in the foreign currency.

### Applications of ICT in Agricultural Risk Management

While agriculture and agribusiness will continue to be risky, many risks can be mitigated by timely action and through the application of best practices. Typical risk mitigation actions might be spraying crops with the appropriate pesticides in response to an early warning of a nearby pest outbreak or optimally altering cropping patterns in response to news from commodity futures markets. Information is the most critical requirement for effective risk mitigation and farmers need a variety of information to make choices to manage risks effectively. Two types of information are most important for risks mitigation. These are:

- **Early warnings** about the likely occurrence of inclement weather, pest and disease outbreaks and market price volatility;
- **Advisory information** which essentially helps farmers in deciding on a course of action to manage production risks optimally or to respond to early warnings.

The nexus between agricultural advisory services and risks mitigation is an important one, because information alone is often not sufficient to manage risks. In Uganda, for example, the Grameen Foundation (2010) found that even if a farmer knew that a banana disease was spreading nearby, he or she required help in choosing the right action to prevent infection of the plants. In many cases, the early warning or decision support information already exists. State Meteorological Services generally collect weather information and create forecasts. Similarly, Agricultural Institutes, Universities or Extension Services are typically well aware of best practices in crop selection, production techniques, input use, pest management, global commodity trends and other topics critical to smallholder farmers. International organizations also generate early warning

and decision support information. For example, USAID's Famine Early Warning System (<http://www.fews.nets>) provides information for governments to manage food security risks. A similar system at FAO helps to manage food security risks – the global Information and Early Warning System (<http://www.fao.org/gIEWS/english/index.htm>).

A few challenges are encountered in getting the necessary information that can be used to solve risks problems in agriculture and agribusiness. One difficulty has been how to collect and process this information so that it becomes useful to individual smallholder farmers and agripreneurs. Another problem borders on how to minimize the cost implications of transmitting the information to rural populations in poorly connected areas. ICT applications have made it easier and cheaper to achieve these objectives.

It is doubtful whether an early warning system alone is sufficient for farmers to mitigate risks. Many of these casual links have not been tested empirically. Latent demand for advice in addition to warnings appears to exist, but the issues of farmers' or agripreneurs' willingness to pay for these services delivered using ICTs or whether the private sector can deliver such information sustainably, are yet to be addressed. Public-sector and development institutions should remain active in this space and learn lessons from experimental cases in countries such as India, Uganda and Kenya.

### **Risks Mitigating Information**

The quintessential example of applying ICTs to agriculture is the Indian agribusiness giant, ITC and its e-Choupal service (<http://www.itcportal.com/rural-development/echoupal.htm>). This extensive network provides approximately 4 million farmers with information on market prices, the weather, pest and disease outbreaks and expert advice. The service is free; ITC makes profit by using its information service kiosks to procure commodities and market agricultural inputs to farmers (ITC, 2010).

Reuters Market Light (<http://www.marketlight.org/>) modifies the information delivery model of e-Choupal by eliminating the kiosks and reaching out directly to farmers. Developed by the Thompson Reuters information company, the service provides highly personalized professional information to farming community in India. It covers over 250 crops, 1,000 markets, and 3,000 weather locations across 13 Indian states in 8 local languages (Mehra 2010).

#### ***Reuters Market Light Disseminates Early Warnings to Mitigate Risk***

The main task of Reuters Market Light (RML) is to give farmers price information to increase their bargaining power in markets, but it also provides early warning information that can be used to mitigate risk. Two pieces of the service are particularly relevant here:

- **Farmers receive daily SMS messages** containing weather information for their particular locations. This information includes predictions for rainfall, humidity and inclement weather;
- **Farmers receive three types of news** for crops specified when they subscribe to the Reuters service: (1) news regarding outbreaks of pests or diseases, (2) news and analysis from global markets, and (3) government policy information regarding, for example, farmer support programmes, schemes and subsidies.

That timely weather forecasts might help mitigate risk is not difficult to ascertain, as this anecdote from Reuters indicates. A farmer is quoted as saying, “I got message on relative humidity going up to 70 percent. As a precaution, I put a spray of US\$ 10. My friend did not know this. He lost nearly US\$ 8,000 of his crop that day” (Preethi, 2009; Mehra, 2010). The information is delivered directly to farmers’ mobile phones through SHS. RML subscription cards can be purchased from local shops, input suppliers, banks and post offices. These services can equally be extended to agribusiness firms that seek to control risks and uncertainties.

Even though there has yet to be a rigorous and empirical evaluations conducted for the purpose of determining the quantitative relationship between information availability and the implications for risks mitigation, a preliminary study in Sri Lanka concluded that 40 percent of post-production losses could be mitigated with timely information (Mittal *et al.*, 2010).

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# Chapter 14

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## ROLE OF EXTENSION IN AGRIBUSINESS

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### Summary

Agricultural extension service has meant different things to different people. Agricultural extension is seen as a “process” of helping farmers become aware and adopt improved farming technologies in order to improve their farming efficiency, and thus improve income and welfare. Over time, the term ‘agricultural extension’ has evolved completely, changing extension approaches used in an attempt to deliver with precision the ‘extension message’ to the target *clientèle*. This chapter discusses these approaches which include: transfer of technology (ToT); Farming systems Research (FSR); Training and Visits (T&V); Farmer-to-Farmer Extension (such as Farmer Field Schools-FFS); Farmer-Trainer approach. The roles of Business Service Providers (BSP) and the use of Information Communication Technology (ICT) in extension are also discussed. The reader will be able to take note of the new paradigm in agricultural where privatization and commercialization of the service are taking root.

### *Rôle de l'encadrement en Agrobusiness*

#### *Résumé*

*Les services de vulgarisation agricole signifient plusieurs choses chez différentes personnes. La vulgarisation agricole est vue comme un « processus » d'aide aux agriculteurs pour les emmener à être au courant et à adopter les technologies culturales améliorées en vue d'accroître l'efficacité culturelle et donc améliorer les revenus et le bien-être (Baque Mondiale, 1977). Dans le temps, le terme vulgarisation agricole a évolué complètement changeant les approches de vulgarisation utilisées dans un souci de diffuser avec précision le message de vulgarisation à la clientèle cible. Ce chapitre discute ces approches et comprend : le transfert de technologies (TT) ; la recherche sur les systèmes de culture (RSC) ; la formation et les visites (F&V) ; la vulgarisation entre agriculteurs telle que les Champs Ecoles Paysans (CEP) ; l'approche Paysan-Formateur. Les rôles des Fournisseurs de Service Commerciaux (FSC), l'utilisation des Technologies de l'Information et de la Communication (TIC) dans la vulgarisation sont également discutés. Le lecteur sera*

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*capable de noter le nouveau paradigme dans le domaine agricole où la privatisation et la commercialisation des services est en train de s'implanter.*

## **Introduction**

Agricultural extension service has meant different things to different people. Moris (1991a) defined extension as the mechanism for information and technology delivery to farmers. On the other hand, Mahaliyanaarachi (2003) defined agricultural extension as an ongoing, non-formal educational process which occurs over a period of time, leading to the improvement of farmers and an increased profitability of their farming activities. A more comprehensive definition of extension service is given by the World Bank (1977) as a “process that helps farmers become aware of improved technologies and adopt them in order to improve their efficiency, income and welfare”. In this chapter, a broader definition of agricultural extension is taken to include facilitation of linkages of farmers with other institutional support services such as input supply, credit and agricultural produce marketing services. Its goal is to improve the farmer’s knowledge, skills, and change his attitude in agricultural technology, farming activities and agricultural marketing. Extensionists are therefore expected to look into increasing the productivity of the farming, incorporating commodity/ input in development. This important instrument of development must be seen as the software input in development programs and hence must be treated and costed like other inputs.

## **Learning Objectives**

At the end of this chapter, the lecturers, students, extension workers and farmers will gain insights in agribusiness extension. Specifically, this chapter should be able to:

Help the student and extension practitioners understand the historical background of extension;

Differentiate between extension approaches;

Appreciate the importance of extension in agribusiness;

Differentiate between the privatization and commercialization of extension service.

## **Learning Outcomes**

At the end of this chapter, students and practitioners will:

Learn about the state of agricultural extension in Africa;

Differentiate clearly between the concept of privatization and commercialization;

Know the advantages of agricultural extension commercialization;

Appreciate the evolvement of the public extension service and that extension service is not static and has to change to meet demand;

Propose guidelines for implantation of commercial and private extension services;

Learn about some successful commercial and private agricultural extension service providers in Africa;

Propose an agribusiness extension model for Africa.

### **Historical Perspective of Extension Services**

The aim of agricultural extension is to disseminate knowledge and technologies to farmers using adult learning techniques. Extension should improve knowledge and skills and change attitudes of farmers in order to enhance adoption of new technologies and contribute to improved production, income and general welfare of farmers. It helps farmers to better use the available resources by increasing technological options and organizational skills. Agricultural extension achieves this by training farmers on how to use technologies effectively to their benefit under their circumstances. However, farmers do not adopt technologies merely because they have been disseminated to them. They have to learn about them, and in the process, acquire knowledge and skills necessary to successful use of those technologies.

Throughout Africa, since the colonial period, the public sector plays a dominant role in the provision of agricultural extension services. According to a worldwide survey conducted by the Food and Agriculture Organization (FAO), about 81 % of the extension work around the world is carried out through a ministry or department of agriculture (Swanson *et al.*, 1990). Globally, some 600,000 extension workers are engaged in the provision of agricultural information to farmers of which 95 % is carried out by public extension (Rivera and Cary, 1997).

With increased demand on the government's resource the fund allocated to extension declined and resulted in extension systems becoming ineffective because there were insufficient funds for operations after paying staff salaries. Early attempts to increase the effectiveness of traditional extension systems centered on methodological approaches like the training-and-visit-system, the village-level participatory approach, on-farm-research, and client-oriented research. None of these methodologies proved to be a panacea for overcoming low agricultural productivity and much still ails the traditional extension approach in many African countries. These monolithic extension systems continue to exist

in a variety of forms depending on the degree to which macroeconomic reforms, civil service reform, and functional analysis of ministries of agriculture have forced them to change.

Although agriculturally driven developing countries have invested heavily in public extension and despite availability of appropriate technologies, productivity has remained low and in most cases limited to subsistence levels. This means that despite enormous investment in public extension, farmers have either not acquired productivity enhancing knowledge, skills and technologies or changed their attitudes towards their use. The mode of dissemination can influence the agricultural knowledge and skills that farmers require. According to Kenmore (2002), a good extension approach motivates and trains farmers to experiment more accurately on their own and become trainers of others. Several extension approaches have been used in the past and these include:

- i. Conventional extension approaches;
  - ii. Early conventional extension approaches;
  - iii. Transfer of Technology (TOT) approach;
  - iv. Farming Systems Research (FSR) approach;
- i. **Conventional Extension Approaches:** The early conventional extension approaches were structured and operated on the assumption that farmers were largely passive, illiterate, ignorant and therefore unable to innovate or integrate new practices into their farming systems. The results of extension services were largely poor because farmers did not feel ownership of ideas imposed on them. Good extension approaches must empower farmers to be part of and lead extension and exert power and influence over training and research so as to elicit farmers' interests;
  - ii. **Early Conventional Extension Approaches:** Within the developing countries, several extension approaches have been used without much success. These approaches were mainly top-down and non-participatory. The mode of training was instructional similar to classroom teacher-pupil method rather than facilitatory. Farmer participation was mainly passive with little or no active involvement at all stages of research and extension;
  - iii. **Transfer of Technology (TOT) Approach:** This approach dominated extension and research during the 1950s and 1960s (Godland *et al.*, 2004) where technologies were developed in research stations and often in environments different from those of the farming communities. During that time, the prevailing view was that scientific knowledge applied to problems of rural poverty in the developing countries would provide the necessary impetus needed to transform rural people's lives and increase

their welfare. New technologies were generated and transferred to extension agents for dissemination to farmers. Emphasis of technology development and transfer was on the adoption and non-adoption of technologies without regard to how knowledge on their use was acquired. Information transfer was one-way from agricultural extension to farmers with little or no direct feedback from farmers to research and development. This extension approach was mainly regulatory and some level of coercion was used to compel the native farmers to produce raw materials for the colonial industries. The TOT approach did not facilitate farmer participation in dissemination of knowledge and technologies. Farmer-extension-research linkages were very weak. Many development projects were not working at all and farmers were not adopting recommendations. Most of the recommendations and technologies were not always appropriate to the farmers' circumstances. The rural people's knowledge of their environment and farming systems and their social and economic situation was largely ignored and underestimated. According to Asiabaka (1999; de Boef *et al.* 1993), failure of farmers to adopt new technologies was blamed on their ignorance and backwardness. The extension agents were assigned other duties apart from transfer of knowledge to farmers. These agents were insufficiently educated and supervised and had no organized system of communicating feedback from farmers to researchers;

- iv. **Farming Systems Research (FSR) Approach:** After realizing that smallholder farmers were interested with offsetting the multiple risks present in their environment, the FSR was introduced in the 1970s to focus its effort on the farm with scientific practices aimed at solving farmers' problems. It was hoped that farmers would see these practices impacting positively on production and try them on their own in their farms. Despite the assumption, production in the farming systems remained low.

This approach was probably merely used to test and refine the developed technologies on-farm and would therefore not address farmers' problems. This was the pioneer extension approach which was based on the assumption that what ailed the production systems was inability to access and use appropriate production technologies. Technologies were developed at research centers and passed on to extension agents who then disseminated them to the farming community. Despite access of technologies, impact on productivity was insignificant.

### **Training and Visit (T &V) Extension System**

Training and Visit (T&V) approach was used in technology dissemination, with focus on better deployment of extension field workers. It was an extension approach that was supported by the World Bank during the 1980s and 1990s.

T&V concentrated its effort on transfer of knowledge and technology from research to farmers. It assumed that farmers lacked adequate knowledge that inhibited production increases. It tended to focus on identifying useful knowledge and messages, and diffusing them to farmers. Although the flow of communication between extension agents and research had improved, flow of communication from farmers to extension agents, especially from mixed enterprise producers was lacking. Contact farmers were used to disseminate information to their respective communities. With T&V, there were improved farmer training, research-extension-farmer linkages. Thus, communication flow between extension and research was improved. The subject matter specialists made decision on which livestock or crop enterprise to concentrate on and which crop areas to be taught. The extension activities followed a rigid schedule with little input from farmers, with the result that programs tended to lack relevance to local farm problems.

The role of Village Extension Workers (VEWs), Agricultural Extension Officers (AEOs) and contact farmers deserves special mention in the context of this chapter. The VEW is a critical link in the dissemination of technologies from research stations to the farmers' fields. The VEW's role is to educate, train, and persuade farmers to adopt new ideas and use improved practices. In addition, the regular visit by VEWs to farmers' fields is a must, because T&V emphasises regular training of staff and programmed visits to farmers. During these visits, the VEWs have to put forth greater efforts in identifying the farmers' problem(s), identifying appropriate technical solutions, and recommending practices that help farmers to improve production. A competent VEW should possess adequate knowledge of agribusiness, particularly a knowledge of principles, methods and techniques of agribusiness.

The AEO has two basic functions:

To review and assist in the organizational aspects of the job of the VEW which may include scheduling and timing of visits, organization of meetings, maintaining diaries, etc.;

To provide technical support to the VEW, especially to see that production recommendations are effectively taught to farmers and assist the VEW in situations where the VEW is not in a position to address the problem(s).

In general, the major role of the AEOs is to help VEWs increase their effectiveness (Benor *et al.*, 1984). Since frequent contact between the VEW and all farmers in a village is not possible, VEW selects a group of farmers called 'contact farmers'. These contact farmers are selected by VEW and AEO in consultation with village leaders and elders. According to Benor *et al.* (1984), the contact farmer should possess the following characteristics:

- Represent the socio-economic and farming conditions;
- Be regarded by other farmers as able and worthy of imitation;
- Be a practicing farmer;
- Be willing to adopt relevant recommendations on part of their lands;
- Be representative of different types of families.

Agricultural extension professionals enjoy a long and noble tradition in Africa. That tradition has focused characteristically on educational and/or advisory work free of charge, in such areas as production agriculture, natural resource management, family life, programmes for youth, and community and rural development. However, as other traditions have eroded or have been reshaped in the path of globalization around the world, thus is the extension worker called upon to rethink approaches, identify goals and objectives, and discover new roles in these changing and challenging times. One such role is that of agricultural extension in agribusiness. That role has been successfully executed in the livestock sub-sector and by some marketing firms and constitutes a story worth telling in the following two case studies, documented in Boxes 14.1 and 14.2.

**Box 14.1:** Commercialization of Veterinary Extension Services in Nigeria

Worldwide, the public sector plays a dominant role in the provision of veterinary extension services (Lees, 1990). According to a worldwide survey conducted by the FAO, about 81% of the livestock extension work around the world is carried out through ministries or departments of agriculture (Swanson *et al.*, 1990). Globally, some 600,000 extension workers are engaged in the provision of information to farmers of which 95 % was carried out by public extension and only 5 % is carried out by the private sector (Rivera and Cary, 1997). However, the public extension system is now seen as outdated, top-down, inflexible, subject to bureaucratic inefficiencies and therefore unable to cope with the dynamic demands of modern livestock production (Rivera, 2000). Commercialization of livestock extension is, therefore, advocated.

Commercial veterinary extension is non-formal educational process which occurs over a period of time and it leads to improving the living conditions of farmers and their family members by increasing the profitability of their livestock farming activities. It concentrates on the improvement of the farmer's knowledge, skills and change of their attitudes in livestock farming technology and marketing.

In Nigeria for example, veterinary extension looks into increasing the productivity of the livestock farming business as a whole. It includes both direct livestock farming activities and off-farm or farming related activities. It assists guides and directs livestock farmers to identify both livestock farming and non-farming activities which can increase their level of productivity and net income but the farmers have to pay for the services provided.



**Box 14.2: Private Commercial Extension Companies**

Typically, commercial firms or marketing firms are promoting their interests in particular commodities or products through a network of privately employed extension agents on paid salaries or other forms of remunerations. This, they concentrate their extension initiatives in areas where it is profitable, like in high potential agricultural produce and inputs supply. Often, their activities involve conveying information about and demonstrating the technologies that the company promotes, such as hybrid seeds, fertilizer use, etc. They are also involved in co-financing major agricultural shows and with increased competition in the seed, agrochemical and dairy industry, they have begun giving extension advice through stockiest, demonstrations and field days. In the diary sub-sector, private commercial companies and individuals are advising farmers about feed, providing artificial insemination (AI) and veterinary services, and training farmers in hygienic ways of handling milk. Extension is now really considered part of agribusiness and marketing strategy and private commercial companies are putting money on recruiting privately paid extension personnel in Africa.

**Hypothetical Scenario**

Consider a private company dealing in hybrid seed and agrochemicals in Kenya which has reported spending approximately KSh 3.5 million in a season on agricultural extension (Table 7.1). This translates to about KSh 394 per farmer in a season.

**Table 14.1:** Budget dedicated to extension by a private company

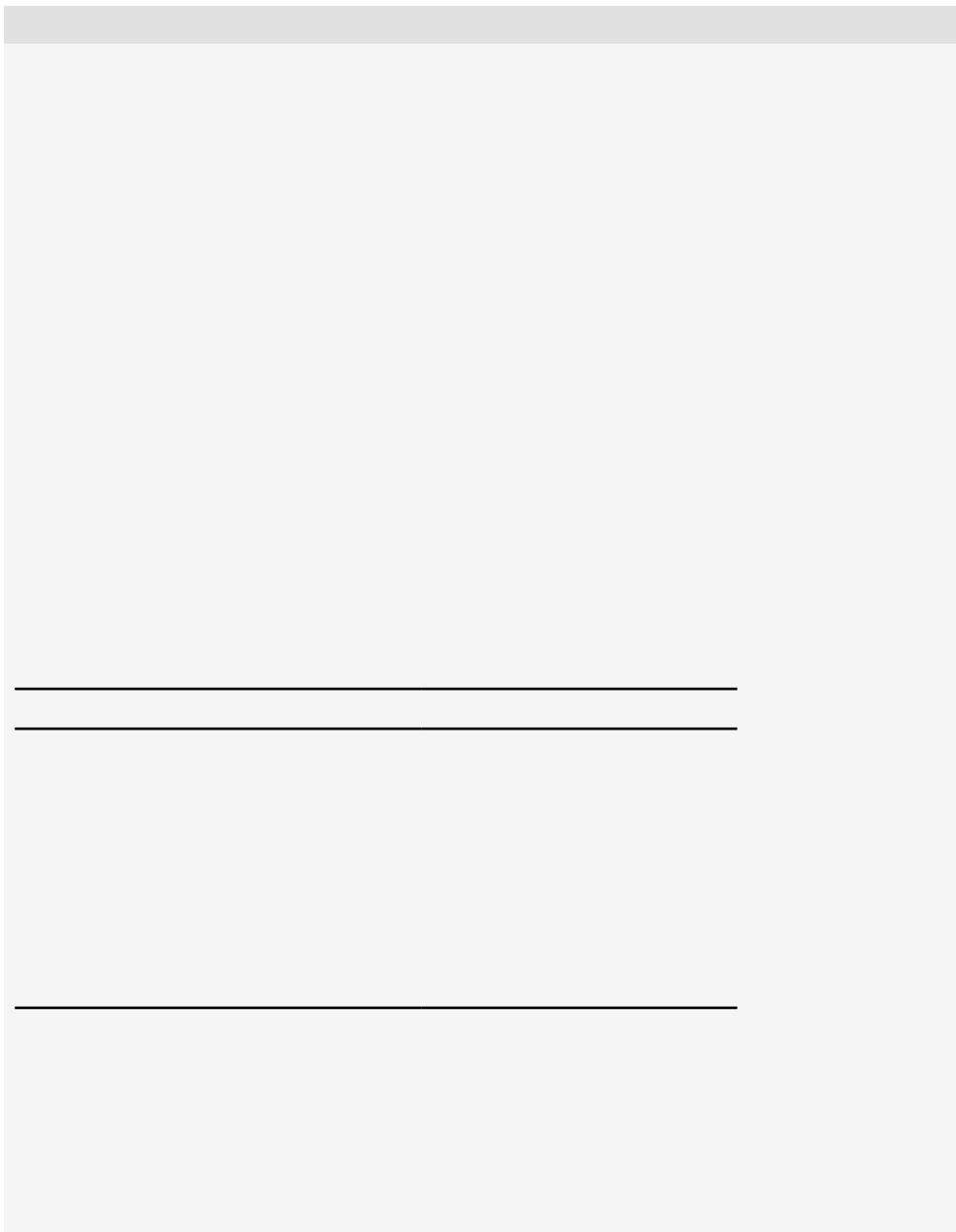
Cost per season	KSh
Promotions	800,000
Samples	1,500,000
Adverts	50,000
Meetings	400,000
Outside	800,000
Total	3,555,000
Approximately cost/farmer/year	394

**Questions**

- How can the above commercialized extension services be improved?
- How can these commercialized extension services be replicated in your country?

**Farmer to Farmer Extension Approach**

The Farmer-to- farmer Extension approach has its origins in Guatemala in the 1970s and it is currently practiced in Asia, Latin America and Africa (Kiptot and Franzel 2013). There are different approaches used in farmer-to-farmer



extension, but at the center of these approaches are farmer trainers. Extension approach refers to the doctrine for an organization, which informs, stimulates and guides such aspects of the organization as its structure, mission, vision, leadership, its programs, strategies, its resources and linkages. An extension approach influences the choice of the target audience, the resource requirements and the allocation, their methodologies employed, and the results and impacts of the extension efforts. An approach is a way in which different guiding principles are applied in a specific situation to fulfill different purposes and/or target specific development beneficiaries.

### **Farmer Field School Extension (FFS) Approach**

To address the weaknesses associated with other conventional extension approaches herein referred to as Non Farmer Field School (NFFS), alternative participatory approaches have been developed. The participatory approaches emerged after realising that most technologies developed by researchers alone were not appropriate for smallholder farmers. The Farmer Field School (FFS) is an adult education approach meant to enhance management and social skills. This approach applies the principles of non-formal education where learning is done outside the formal school system (Dilts, 1983). FFS is based on problem solving and consciousness raising strategy for empowerment. It engages farmers in a process of group discovery learning, allowing them to make their own observations, draw their own inferences and make their own informed decisions. This people centered extension approach enhances farmers' ability to put into practice what they have learned and further teach them how to create or exploit opportunities for further learning.

This approach facilitates farmers' demand for knowledge, give them the opportunity to choose, test and adopt technologies according to their needs. Activities are collectively carried out in groups and are intended to strengthen the capacity of farmers to work together to share information and to learn from each other. Trainers facilitate experiential learning process by organizing adequate learning activities and providing crucial information where needed.

Dairy FFS in Kenya wholesomely adopted a curriculum developed by agronomists specializing in integrated pest management albeit with minor modifications to suit the dairy enterprise. Although application of FFS in crop management had been successful, major differences exist between crops and dairy enterprises. The farmers in developing countries have expressed demand for FFS use in livestock production, but no detailed curriculum has been developed to specifically address issues of dairy enterprise. The successes of FFS in crops and soil and water management practices, has encouraged adoption and use this approach in dairy production. Yet crops significantly differ from dairy in many aspects.

## **Farmer Trainer Approach**

Selener *et al.* (1997) defined farmer trainers as individuals with little or no formal education who through a process of training, experimentation, learning and practice, increase their knowledge and skills and become capable of sharing it with others, functioning as extension workers. Although the farmer trainers approach differs from country to country due to the conditions under which it takes place, the organisational set up and management of all farmer trainers are trained by external agents, they in turn share their knowledge and skills with other farmers in the community.

## **Commercialisation and Privatisation of Extension Service**

The failure of public sector extension service has been attributed to a number of factors including poorly motivated staff, a preponderance of non-extension duties, inadequate operational funds, and lack of relevant technology, poor planning, centralized management, and a general absence of accountability in the public sector and huge staff and budgetary requirement (FAO, 2007). Tanzania, Ghana, and Uganda once employed over 10,000 extension workers each, but the staff sizes have now been lowered to a few thousand workers, and in Uganda to just a few hundred. By contrast, in Ethiopia some 15,000 extension staff continue to serve within the national extension service. In some African countries, it is not unusual to find that extension workers are less food secure than the farmers they are supposed to help to achieve food security

Qamar (2001) noted that due to the vast number of small, subsistence farmers in many countries, the burden on a state service is immense, especially the recurrent cost of supporting a large number of technical field level staff. While the unit cost of extension staff in many countries is low, large staff size translates into large government expenditure outlays (Swanson *et al.*, 1990). As a result of financial concerns involved in the running of these large organizations, many countries have examined alternative structural arrangements, including the feasibility of reducing public sector extension expenditures with associated staff reductions, changes in tax raising, charges for government extension services and privatization and commercialization (Williams and John, 1997). Also, a number of countries have moved towards reducing, recovering or shifting the burden of the cost associated with provision of public sector veterinary extension, particularly transferring private good functions to private industry (Rivera and Cary, 1997). Public goods, therefore, need a mechanism to ensure that everyone contributes towards the cost of the program. This can be achieved through privatization or commercialization.

## **Privatization of Extension Services**

Privatization is the transfer of something from government ownership to private ownership. In this context, privatization is mainly changing the ownership of the extension service to private sector from public sector. When agricultural

extension is discussed, privatization is used in the broadest sense of introducing or increasing private sector participation, which does not necessarily imply a transfer of designated state owned assets to the private sector. In theory, private extension is simply the provision of a service or advice by a private firm in exchange for a fee, and the term and conditions of the transaction are negotiated in an open market. The privatization policy is aimed at reducing public sector spending by handing over to private sector to take over.

Privatization has been promulgated as a way of improving the availability and quality of extension services to the agricultural sector. The rationale for private sector provision of veterinary extension services is generally based on an expectation of increased efficiency with the operation of private markets and with the resulting efficiency contributing to the growth of a country's GNP. Authority or initial enthusiasm for privatisation has, however, been tampered by the recognition that veterinary extension require some form of public management (Moris, 1991a).

### **Commercialization of Extension Service**

Commercialization on the other hand is defined as the re-organization of an enterprise wholly or practically owned by the government, in which such commercialized enterprises shall operate as profit making commercial venture without subvention from the government (Mathewos and Chandagi, 2003). Enterprises to be commercialized would also be expected to be better managed and to make profit. Extension services have been mainly funded and delivered by government agencies free of charge for decades. Commercialization is not merely privatization. It does not need a change of ownership under commercialization. Ownership can be kept with the government or semi government organization, but the service is provided on a commercial basis. Under privatization, ownership should be changed into the hands of a private organization. In commercialization, in contrast to privatization, the agency remains public.

Under this concept, first, agricultural extension is considered as a commercial product or service, which exchanges between two parties over a required payment. Simply one party (extension providers) acts as sellers and other party (farmers) acts as buyers. Secondly, basic economic theory of supply and demand is applied in this process. Agricultural extension services become a totally demand-oriented activity. Thirdly, extension can also be considered as an input such as fertilizer, improved seed, agro-chemicals, machinery etc., which is essential for the commercially oriented farming. As such as farmers have to pay for other inputs, they also have to pay for extension services.

The basic concept is that farmers have to pay for the service which they get. Either farmers pay totally or partially, it depends on the extension approach. Farmers may pay the full amount of the fee or the government or other funding agency could subsidize it fully or partially.

Commercialization involves introduction of commercial principles into its operations, including the application of user charges, commercial accounting and commercial performance objectives, with the aim of turning it into a commercially-viable and profit-making enterprise (Mahalliyanaarachi and Baudara, 2006). According to Sadighi (2004), full commercialization means that enterprises so designated will be expected to operate profitably on a commercial basis and be able to raise fund from the capital market without government guarantee. Such enterprises are expected to use private sector procedures in the running of their businesses. On the other hand, partial commercialization means that enterprises so designed will be expected to generate enough revenue to cover their operating expenditures (FAO, 2007). The government may consider giving them capital grants to finance their capital projects. In both full and partial commercialization, no divestment of the federal government's shareholding will be involved, and subject to the general regulatory powers of the federal government, the enterprises shall: fix rates, prices and charges for goods produced and services rendered; capitalize assets; and sue and be sued in their names (Ajieh et al. 2008).

In summary, commercialization is perceived to have had a positive effect on moving beyond the farm gate into involvement of the extension staff in the entire production- processing- transporting- marketing chain- consumption chain. There has also been a shift in focus to a client orientation and a concern to identify and produce results in terms of productivity increases rather than simply engage in productive activities (Rivera, 1993). In general, a more commercialized approach broadens the focus of extension personnel and makes an extension service more responsive to client needs and changing economic and social conditions (Rivera and Cary, 1997). It uses bottom-top management approaches that ensure popular participation and democratic multiples. Commercialization of services does provide poor farmers with better access to agricultural extension services through interpersonal negotiations for a felt need. Commercialization will relieve the financial burden of government and release funds for it to use in other areas. It promotes greater efficiency and productivity in the public enterprises. The emergence or existence of commercial extension systems in a country may be taken as a sign of the upward mobility of farmers who require specialized services that they can afford to pay for.

### **Extension Services through Business Service Provider (BSP)**

Stakeholder Collaboration and network which engages the private sector in agricultural extension is seen as crucial step towards embracing integrated approach to solving farming challenges, increasing efficiency in utilization of resources, minimizing duplication of efforts and allowing exchange of ideas in the win-win situation. It is generally advocated that if extension services are properly designed and implemented, agricultural productivity definitely will improve (Romani, 2003). In Kenya for instance, the declining effectiveness of the public extension service has been identified as one factor impeding

agricultural growth (Muli and Jayne, 2006). Therefore, the number of extension service providers is inadequate to meet the needs of farmers. Participation of the private sector in extension become inevitable to fill in the vacuum arising from “tailing off” of state’s participation in the provision of extension service (Kinyinga, 1993). This scenario necessitated the private sector involvement in the provision of extension service counts (Omolo *et al.*, 2001). Anderson and Crowder (2000) mentioned private delivery and private financing as one of the broad forms of extension delivery re-organization in Kenya where the private sector is involved in extension provision. This extension approach is associated with highly commercialized high-value agriculture. Anderson and Van Crowder (2000) explicitly showed that this approach exists where commercial entities provide their supplies with technical advices in order to increase their efficiency in production. In this case, a farmer is involved in the design of technology package to suit their specific needs and is therefore participatory in contrast with the ‘top-down’ which largely resulted in technologies inappropriateness.

The private sector participation in extension has some comparative advantages over the solely-managed public sector extension approaches. According to Kristin and Nick (2003), the private sector extension staff are better motivated to execute their work, an observation attributed to timely provision of salaries, timely facilitation in transport and other operation costs resulting in remarkable extension outcomes. In addition, Kristin and Nick (2003) noted that unlike the public extension service, there is more rapport between the farmers and the private extension service provision, thus implying less bureaucracy in service provision.

### **Employing ICT in Agricultural Extension**

Looking at extension approaches noted earlier, it is appreciated that extension services employed varied extension options targeted at overcoming barriers to technology adoption by farmers. Nonetheless, appropriate method and means of improving precision of extension message remained a popup concern. The earlier extension approaches throughout extension history at least exhibited a deficit in fulfilling intentioned purposes (Anderson and Feder 2004; Anandajayasekeram *et al.* 2008; Aker, 2010). In regard to use of Information Communication Technology (ICT) as a means of passing information to the farmers, it is acknowledged that some technological breakthroughs such as access to telecentres are limited by infrastructures (UN, 2005). Mobile phones, however, have been reported to have impressive penetration in rural areas and it is expected to be a useful tool contributing to development world over (Friedman 2005). The use of mobile phones in passing information, particularly in Africa, is impressive as it is reported to bring new possibilities by connecting individuals to individual, information, markets and services (Aker and Mbiti, 2010).

The mobile phone wide coverage in most African countries has proliferated inventions of mobile phone-based development projects, including extension in agriculture. Aker (2011) found that mobile phones usage to address information

gap, improves management of inputs and output supply; improved delivery of services to farmers such as Artificial Insemination service; increased accountability of extension personnel; and improved linkages with research systems.

It is important to note the emergence of the technology-embracing M-services which partly facilitate adoption of agricultural technologies such as iCow, M-Farm, M-Pesa and the micro-loan related services. An Integration of all M-services enables farmers to access better farming information, in addition to access to crucial services such as financial support. All these according to Gakuru *et al.* (2008) facilitate technology adoption. In addition, use of mobile phone in technology dissemination considerably reduces cost of information search as noted by Aker and Mbiti (2010). This advantage becomes a sigh of relief in many developing economies where access to information is costly, as it involves personal travels incurring costs both in time and money.

Mobile phones usage also facilitates access to agricultural markets replacing the traditional market information systems such as radio programs. Aker and Mbiti (2010) demonstrated the efficiency of market information transfer in the West Africa francophone countries where farmers instantly receive prices of a variety of goods by typing in a code in their mobile phones, send it and receive instant reply. This represents a perfect contrast with the weekly radio broadcast which used to be the main source of market information.

#### **Box 14.3:** Enhancing Agribusiness in Africa through Extension

Agricultural extension is an important service for agricultural development in countries whose economies are driven by agriculture (Oladele, 2001). In such countries, agricultural extension service faces constant pressure to use extension approaches that are effective in disseminating knowledge and technologies to farmers.

Agricultural extension has been in the past a free service. However, completely free-of-charge extension service to meet the different needs of all categories of farmers is gradually becoming unrealistic and inefficient due to scarce financial resources and global changes in economic policy. A public agricultural extension service is becoming too expensive to finance by some developing countries and external donors are also gradually withdrawing. Alternative ways of funding public extension are now being sought and options such as charging for government extension service, reduction in public extension-expenditure or complete privatization and commercialization of the services. Under commercialization, ownership can be kept with the government or semi-government organization, but the service is provided on a commercial basis. Under privatization, ownership should be changed into the hands of a private organization<sup>1</sup>.

Introduction of the use of participatory farmer to farmer extension methods has been promoted to address the problem of access to information for small scale farmers in Africa. There are a number of advantages arising from farmer-led extension approaches that are specific to the chosen approach. The Farmer-Group extension approach too has valuable benefits such as policy advocacy role and the farmers support each other to learning and adopting new technologies (Kiptot *et al.*, 2006). The benefit of such farmer



group is noted as including making “custom-made” extension services specific to the client’s needs.

Despite the introduction of new extension approaches to increase access to information, there is still low adoption of technologies. Furthermore, yields from small scale farmer still remain low.

### **Questions**

What are the factors that lead to persistence in low adoption of agricultural technologies?

Evaluate and design a policy that will address the persistence of low adoption

of technology.

### **Questions for Discussion**

1. Explain the state of traditional agricultural extension in Africa.
2. Discuss how agribusiness in extension differs from other types of education.
3. Differentiate clearly between the concept of privatization and commercialisation.
4. Outline the advantages of agricultural extension commercialisation.
5. Discuss some of the problems of public ownership of agricultural extension.
6. Explain the major approaches of commercialization of agricultural extension.
7. Present the guidelines for implantation of commercial extension services.

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## Chapter 15

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# GENDER AND CAPACITY DEVELOPMENT FOR AGRIBUSINESS

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### Summary

A concern for gender equality in development is now sufficiently well established to be the subject of many development agenda for enhancing sustainability. This involves a policy and planning approach that addresses inequalities in men's, women's, boys' and girls' social and economic roles in relation to development. This approach is necessary so as to bridge the gap between policy and practice, and, to be a catalyst in attaining the targets of policy interventions. In development planning it is crucial that practical and strategic needs of all gender groups are identified and addressed. Failure to identify the different needs and roles of men and women during policy and programme/project formulation leads to gender blind policies and projects which often result in inequitable and ineffective delivery of services, uneven resource allocation, lack of participation and unsustainable development interventions. This chapter provides an understanding of gender issues meant to transform and inform mainstreaming of gender into the development process.

### *Genre et renforcement des capacités pour l'Agrobusiness*

#### *Résumé*

*Social and economic importance of shea butter in producing countries rise up the need to shape nuts and butter quality to international standards in use. Hence, a quality process assert to channel actors in order to guarantee a fair trade and so cover economic gap, in particular for farmers and in general for producing countries. In this way, from harvesting to marketing, through nuts treatment and their processing into butter, critical handling methods were defined in comparison to empirical habit usually adopted. Quickly picking of shea nuts under trees and fast processing in combination with direct solar drying to a reasonable height above the soil level avoid nuts germination and kernel contamination by microorganisms. Moreover, if shortening to an hour the boiling time of paste obtained from kernel allows reducing hydrolysis reactions of glycerides from butter, packing it in aseptic*

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*containers increases conservation period. Respecting these two processes allow obtaining nuts and shea butter showing quality standing to international standards that could simplify marketing and give more profit to involved actors. However, a well-organized channel would facilitate ready selling and fair remuneration of nuts and butter generated through quality processes.*

## **Introduction**

In economic development, men and women should be recognized as being equally important. In Africa however, gender disparities in agribusiness seem resistant to change. As a result, rural poverty has persisted whereby two out of every three impoverished individuals are female. Worsening economic times and environmental shocks generally have more harmful impacts on women as compared to men, and on resource-poor rural women, compared to poor women living in urban areas. Access to profitable agribusiness opportunities and off-farm income sources for both women and men are key to reducing risk and vulnerability, and supporting rural development.

Rapid changes occurring in the agribusiness sector present both challenges and opportunities for the sector's role in poverty reduction and food security. Opportunities for lucrative high-value markets, globalization and trade liberalization often exclude poor and small agribusinesses. In most African countries, women are found in low profit, small scale production, processing and marketing of own produce to local markets. Thus changes in agribusiness increase vulnerability of resource poor women whom according to World bank (2009) have traditionally had limited access to opportunities due to cultural, social and political biases. For instance, economic analyses of agricultural markets have focused mainly on their efficiency and have paid little attention to gender issues (Baden, 1998). This has continued without consideration that men and women are differently located in the agribusiness sector by commodity, entry point in the value chain, spatial mobility and motivation.

Integrating gender issues in agribusiness are of specific relevance to the African region, including finance, energy and technology. According to World Bank (2008), a reduction in gender gaps increases productivity. Poverty reduction, therefore, requires the integration of gender issues in farm and non-farm rural employment to support the essential productive resources of land, water, labour, knowhow and human capital. This chapter is expected to assist in capacity-building efforts in the Africa region on mainstreaming gender in agribusiness and on broader issues of sustainable agricultural development.

## **Learning Objectives**

This chapter is designed to build capacity in the African region with respect to gender and agribusiness and broader issues of sustainable agricultural development. The chapter will provide information needed to understand and advocate for integration of gender issues in agribusiness policies at the regional,

national, and community levels. More specifically, the chapter aims at:

Explaining the concepts related to gender;

Understanding the gender differentiated roles in agribusiness;

Identifying the gender gaps in the agricultural sector that make women particularly vulnerable to various constraints and how they hinder agribusiness development;

Identifying the constraints and opportunities on agricultural production, distribution, food and nutritional security and the gender dimensions of the same.

### **Learning Outcomes**

At the end of the course the learner should be able to:

Identify appropriate responses to close the gender gap in the agribusiness sector;

Evaluate the needs and options for integrating gender perspectives in agribusiness policies;

Understand the gender-differentiated impacts of agribusiness programmes in Africa.

### **The Gender Problem in Agribusiness**

In agricultural based economies, the mandate of Governments is to alleviate poverty and to improve nutrition and livelihood levels through agricultural development. It is essential to understand that while poverty and food insecurity affects all members of a household, it affects them in different ways, since their roles are substantially different. Cultural practices that have persisted in Africa are often cited as the root cause of gender related challenges in agribusiness, which often threaten food security and other development efforts. If an effective contribution to economic development is to be made, interventions must contribute to the improvement of living conditions of all members of families, regardless of race, class, age or gender. Any solution to poverty related problems needs to take the social, cultural and economic situations of men, women, boys and girls into account, because different gender relations exist in each and every cultural context.

Gender relations refer to the socially and culturally constructed differences between men and women. It is a system of personal and social relations of domination and power through which women and men are socially created and maintained and through which they gain access to power and material resources

or are allocated status within society. Sex, refers only to the biological and physiological differences between males and females as determined by nature. Gender, however, does not refer to the biological differences but to the socially ascribed differences between men and women, girls and boys, that defines their roles and responsibilities in a given society and cultural setting. The definition of these roles, as defined by a given community, results in a division of labour based on gender, i.e., based on differences between men and women with respect to their problems, needs, priorities and proposals for solutions, participation and access to productive resources and opportunities for development.

Gender equity refers to fairness and being sensitive to peculiarity of different gender groups. Gender analysis helps in the identification of where and what kind of inequities that may exist between men and women with regard to legal rights, division of labour, income generating opportunities, access to productive resources and services, political participation, etc. Often, but not always, women are at a disadvantage, due to the fact that most African societies are dominated by men and based upon a patriarchal structure. Because of these existing disadvantages, it is not sufficient to provide equal (or the same) access to services for men and women. Special conditions need to be created to facilitate the participation of the most disadvantaged gender groups, thus filling the existing gender gaps. Gender analysis identify and analyse factors that limit or facilitate equal participation of men and women in development processes; who does what within the household and within the community; what access and control men and women have over resources and income; and their needs and priorities. Together, these variables can be called the gender organization of a community and are context-specific.

Since gender relations are a social construct, they can be changed. It is therefore within the means and responsibility of development agents to support the transformation of communities towards more democratic and equitable societies. Thus agricultural development projects should ensure gender mainstreaming in all activities in order to contribute to the creation of a more equitable society. It is also worth noting that a “gender perspective” encompasses two dimensions: the material and the ideological. In rural development, the material dimension refers to an instrumental approach that seeks to correct the manifestations of gender inequities; whereas the ideological dimension refers to a transformative approach that attempts to tackle the root causes of gender inequities. If they are to contribute to changing rural peoples’ living conditions in a substantial way, agribusiness development projects and policies should attempt to address both the material and ideological dimensions

### **Gender and Agribusiness in Africa**

Agribusiness is considered the pathway to food security, poverty alleviation and sustainable development in the continent. The World Bank (2013) report optimistically indicated that there is substantially huge opportunity for agribusiness in Africa. Helsinki (2013), however noted that inconsistency of policies and weak institutions are among the key challenges impeding growth of



agribusiness sector. There is a missing link required to transform our agricultural sector into a vibrant agribusiness.

Several other research works echo the same concerns and the need for re-aligning of the policy framework cutting across the entire social, economic and political spheres in the African economies in order to allow African woman to participate and benefit from agricultural value chains. There is growing recognition internationally that gender equality is important for economic growth and essential for poverty reduction (Ellis, 2004). The reasons behind these concerns are unprecedented: women's role account up to 55 percent of agricultural workforce in sub-Sahara (Mmasa, 2013); and women who are economically active report agriculture as their primary economic activity. While the roles of women in agriculture vary widely by region, age, ethnicity and social status, in sub-Saharan Africa, women's participation rates in the agricultural labour-force is the highest in the world.

### ***Gender Specific Constraints in Agribusiness***

As noted by Lindiwe (2012) women's role in agriculture spans the entire agricultural value chain. In essence, women involvement in agricultural value chain is central in the light of their hands-on experiences in plant production and animal rearing at the farm level. However, effectiveness of their role in agribusiness is challenged by a number of socio-economic factors as noted by the United Nations conference on trade and development (2008). One of the constraining factors faced by women in the rural areas is lack of sufficient time to participate in income generating enterprise including agribusiness. According to Mmasa (2013), in some African countries, women spend up to 80% of their time on household chores. This implies that women are unable to effectively engage in other productive activities. In addition, limited time constrain their need to further their education and therefore, women are trapped in a scenario dubbed "time poverty" resulting from too many responsibilities demanded of them at a go.

The other challenges faced by African women that limit their entrepreneurial capabilities in agribusiness include illiteracy, high levels of poverty, and lack of property and land ownership rights. This subsequently intensifies the problem of inequity in the society; their role in household farming being mainly limited to providing foods for subsistence use (UN, 2008). Chances therefore for adding value to women's agricultural produce are very slim or non-existent. This becomes a recipe which undermines women's entrepreneurial spirit within the agribusiness sector.

A perfect contrast to the women's scenario is the men's relative ease to access productive resources, and they are therefore in a better position to capitalize on existing and emerging agribusiness opportunities. It is in order therefore to infer that the constraints which curtails women's farming efficiency and profit generation at farm level subsequently constraints their agribusiness potentials (see Table 15.1). Unlike men, women have less access to productive resources, have minimal decision on resources use, are engaged in subsistence agriculture, and have difficulty accessing credit facilities due to lack of collateral. These

gender specific limitations mentioned in World Economic Report (2012) reiterate that whereas huge agribusiness potential for small scale agriculture in Africa exists, women are bound to miss out on this lucrative business opportunity owing to specific gender constraints.

**Table15.1:** The Farm level constraints and the subsequent constraints along the value chain

<b>Average African Woman vis-à-vis her Participation in Agribusiness</b>		
<b>Responsibility</b>	<b>Contribution</b>	<b>Implication</b>
Agricultural work force	Sub-Sahara Africa-55% East Africa - 50% In Tanzania - 81%	Contribute significantly to agricultural labor yet she get minimal or no rights at all to agricultural income
Literacy level	Less than 60%	Challenged in adopting better technology and are less able to access and utilize technology advances thereby resulting in lower productivity, lag behind in utilizing arising agribusiness opportunities both at the local and the global markets
Household workload	Use up to 90% of their time	Little time is devoted to income generating activities such as agribusiness ventures
Land ownership	Less than 2%	Land is a pre-requisite to farming, (though it is possible for one to run a successful agribusiness without land) but a very necessary collateral for loan acquisition
Agricultural credit	Access average 1%	Limited capacity to expand their agribusiness operations
Formal verses informal trade	Majority of informal trades are women	Risk being sidelined in the highly vertically integrated marketing chain which sets high products' standards requirement
Contribution to Agricultural labor plus household labor (including food preparation and serving)	Contribute up to 90% in Uganda, 75% in Kenya, 90% in Rwanda, and 80% in Burundi	Little or no time set aside to participate in income generating enterprises, advance in academic, and to learn new technologies

***Gender and Agribusiness Opportunities***

Gender specific challenges mentioned in the preceding sub-section can also be viewed as special needs (or opportunities) that the specified group within the wider gender grouping in the society (in this case the African women) requires to

effectively engage in agribusiness (Salami, 2010). Any development advancement devoid of gender biases facilitates sustained economic development in any given economy. Presenting therefore equal participation space in all available and arising economic opportunities without any gender biases is a necessary a recipe to achieve sustainable development with better economic outcome especially in the developing economies. In this context, Aterido *et al.* (2011) observed a dawning experience in the financial sector which associated enterprises managed by women as having minimal credit constraints compared to those owned by men. This observation is better viewed as a relief presenting an escape route for credit-constrained women entrepreneurs to take advantage of existing and emerging agribusiness opportunities in Africa as noted by Byerlee *et al.* (2013). These authors, however, note that there is need for special capabilities for women to fully take advantage of entrepreneurial opportunities – including women in the agribusiness sector.

Advancements therefore that equip women to improve their business acumen such as acquiring skills for managing agribusiness enterprises and getting abreast with evolving vertical market integrations requiring high international standards requirements, are positive moves towards effectively engaging women in the agribusiness enterprises. Such moves address illiteracy earlier identified as one of the challenges faced by women entrepreneurs. Nonetheless, a development conscious nation embraces policy interventions as necessary tool to induce substantial shift for women entrepreneurs from subsistence agricultural production into vibrant agribusiness ventures.

### ***Suggested Policy Interventions***

Greater emphasis is needed on defining the role of government and other stakeholders in agribusiness development. However, unless gender issues are factored in and are tackled in their activities, there is a danger that support to the agribusiness sector will not adequately take care of the gender dimensions e.g. women's lack of access to finance, gender divisions of labour and responsibility as well as social norms.

- i. **Market information systems:** The collection, analysis and dissemination of market information for different products in different locations is a valuable service to agripreneurs. In devising market information systems, the gendered nature of agribusiness would require consideration of the range of products covered, the markets where data is collected and the means by which price data is publicised and disseminated.
- ii. **Finance:** Biases against lending to women have persisted and the financial sector reform does not assure the provision of financial services to women agripreneurs. There is need for the development of public and private sector institutions that lend to agribusiness, which have specialised in providing services to women.
- iii. **Storage:** Inefficiency, quality and quantity wastes in marketing systems

and poor prices are partly caused by lack of appropriate storage facilities. Investment in storage facilities may be gender biased affecting factors such as: which crops are prioritised for storage, control of inventory and decisions on appropriate timing of sales. On the other hand, an increase in farm-level storage may increase the work load for already overworked women, thus knowledge about who will perform the necessary work should be questioned before investing in storage facilities.

- iv. **Processing:** The development of processing facilities at different levels of the agribusiness marketing chain is crucial to adding value to farm products thereby raising incomes. There is a need to promote the development of processing controlled by, or accessible to, women, with a view to increasing value addition, and to enable women to secure the benefits and reduce women's labour in post-harvest processing. This should include consideration of a broad range of processing technologies.
- v. **Transportation:** In the absence of a means of transport which they control, many women (and children) headload produce to local markets which is time and energy consuming. Encouragement of group hire of vehicles (through financing based on social collateral) might be a way for women to move produce to markets, which they would otherwise have to sell at lower prices at the farm gate.
- vi. **Institutional Infrastructure:** The development of institutional infrastructure to support agri food marketing is important given the small-scale, informal and low profit nature of much of women's agribusinesses. Women traders, who are often unlicensed, are vulnerable to harassment by government and other informal forms of taxation. The formalisation of informal trading, may hit women particularly hard. Efforts should be made to ensure that women are fully informed of the imposition of new standards, changes in the regulatory system and if change is inevitable, they are given support to make any required adjustments.

### **Framework for Gender and Agribusiness Development in Africa**

The main policy objective is to integrate gender into agribusiness development including: poverty reduction, agriculture and food security, health, education and professional training, governance and decision-making, human rights and gender-based violence, environment protection and information, communication and technology (ICT). To achieve these objectives, the framework will entail;

- i. A gender mainstreaming approach which is defined as a process for integrating a gender perspective into policies, activities, budgets at all levels;
- ii. The affirmative action approach that seeks to correct the gender imbalances in society.

- iii. Greater emphasis on the need to strengthen partnerships between governmental institutions, NGOs and the private sector in order to mainstream gender in capacity building

With regards to promoting women's economic empowerment, the framework should seek to ensure that women, mainly rural women, gain equal access to opportunities such as training, credit and markets.

### ***Gender Mainstreaming***

Concern for gender equality in development is well recognized as a prerequisite for poverty reduction, food security and sustainable development. This involves gender mainstreaming which is the process of integrating a gender equality perspective into the development process. Gender mainstreaming seeks to address the problem of disparities in policy development and planning processes addressing inequalities in men's, women's and youth's social, cultural and economic roles in development. In development programming, it is crucial that practical and strategic needs of men, women and youth are identified and addressed. These needs have to be taken into consideration right at the beginning of project identification, planning, budgeting, implementation and monitoring and evaluation. Failure to identify the different needs and roles of all gender groups, during agribusiness policy and programme formulation leads to gender blind policies and projects resulting to inequitable and ineffective delivery of services, uneven resource allocation, low participation and unsustainable development interventions. The objectives of mainstreaming gender issues in agribusiness are to:

Reduce gender inequities that may exist in a given target area by encouraging both men and women to participate in agribusiness activities, ensure that gender specific needs are satisfied, that they all benefit from the agribusiness interventions and that they impact positively on their lives;

Create the conditions for the equitable access of men and women to productive resources and benefits;

Create the conditions for the equitable participation in decision making processes;

Ensure organizations have an awareness of gender sensitive issues; interventions should incorporate methods which will facilitate the participation of both men and women;

Incorporate gender disaggregated data in the monitoring and evaluation and provide gender impact indicators.

### ***Challenges of Gender Mainstreaming***

The challenges of gender mainstreaming in agriculture have their roots in everyday family life. It pertains to the misconception that gender work relates

to women and that this poses intrusion in private lives. There is therefore need to change mindset or attitude. For example, in many cases communities still consider gender as women issues. Socio-cultural prejudices and stereotyping are still main constraints to women's participation in the spheres of political and economic empowerment. There are also taboos e.g. that food should not be transported by donkeys; most husbands do not allow their wives to meet/work with male extension agents etc. Therefore, there is a need to fight cultural practices that directly or indirectly encourage gender inequality. Despite the efforts made by various stakeholders there are still challenges in the gender mainstreaming endeavours, key among them being:

Misconceptions about gender issues;

Lack of political goodwill;

Limited engendering during planning, budgeting implementation and monitoring and evaluation of programmes;

Lack of harmonization of gender mainstreaming among the government departments and other stakeholders;

Discriminatory socio-economic and cultural practices and beliefs;

Limited capacity of staff to reach various gender groups;

Poor means to enforce gender mainstreaming in programmes and projects;

Weak institutional structure for gender mainstreaming.

### ***Affirmative Action***

Agricultural planning and development are crucial to human survival, but they usually proceed without any consideration to the importance of gender issues. Although women have long been prime movers in agribusiness, their contribution to the sector has been largely ignored, and consequently their stake in development has been undermined. Recognizing the contribution of women is a necessary step in development planning.

Affirmative action or positive discrimination is the policy of providing special opportunities for, and favoring members of a disadvantaged group who suffer from discrimination. The nature of positive discrimination policies varies from region to region. The use of quota system involves setting aside a certain percentage of opportunities e.g. training, credit etc for members of a certain gender group. In some other regions, specific quotas do not exist but instead, members of a gender group are given preference in beneficiary selection processes.

Affirmative action is intended to promote the opportunities of defined disadvantaged groups within a society to give them equal access to available opportunities. It is often instituted to ensure that certain designated disadvantaged groups within a society are included in all intervention programs.

The stated justification for affirmative action by its proponents is that it helps to compensate for past discrimination or exploitation by the ruling class of a culture, and to address existing discrimination.

Box 15.1 is a case study of a woman who saw an opportunity in milk bulking which served local dairy farmers, generated income for her and served as market outlet for products made by her women's' group.

**Box 15.1: Aggregating produce for Enhanced Market Access: A case of A woman Entrepreneur in Uganda**

The dairy farming systems practiced in Uganda includes extensive, semi and zero-grazing and most dairy farmers channel milk produce through informal market which account about 9% of the market (Technoserve, 2008). Informal milk marketing, lack of milk quality assurance and low farm-gate prices are some of the challenges faced by small scale dairy farmer in Uganda (Staal and Kaguongo, 2003)

The Government of Uganda took proactive measures to address the marketing problem by working with small milk traders and vendors to find mutually acceptable mechanisms for setting and enforcing minimum standards of milk quality and handling. Aggregated milk marketing through hub model approach promotes formal milk marketing and improves access to market for the small holder farmers. One of the most important advantages of the hub system is the check off system. Farmers who supply milk to the cooling plant or bulking centres are entitled to get inputs and services on credit.

Agnes Luwesi is a 66-year-old farmer trainer, a resident of Sekanyonyi Sub-county; Mityana District of Uganda. The mother of six is a registered member of BUBUSI dairy farmers' co-operative society and produces milk on her farm which she markets through the cooperative. Agnes saw a business opportunity in milk bulking and she started a milk collection centre (MCC). The MCC bulks 400 litres per day from 75 farmers and she charges a commission of Ugx.100/- off every litre delivered at her MCC. In addition, she grows bananas, cassava and sweet potatoes on her 3.5 acre farm and is a member of a women's group engaged in soap and Vaseline making as a business. Her MCC doubles as an outlet for the laundry products of the group.

**Questions:**

1. Propose policy interventions and explain how they will help target the dairy farmers more effectively.
2. Examine the possible constraints that women agripreneurs like Mrs Luwesi face.
3. Present a case for the Government to establish a women's development fund in the area.

## Conclusion

This chapter identifies practical and strategic needs of men, women and youth in agribusiness development planning. It focuses on gender equality as a prerequisite for food security, poverty alleviation and agribusiness development. It acknowledges that failure to identify the different needs and roles of all gender

groups during policy and program formulation leads to gender blind policies and projects resulting to inequitable and ineffective delivery of services. This in turn leads to uneven resource allocation, low participation and unsustainable development interventions. The chapter provides suitable solutions which involve gender mainstreaming and affirmative action in which the planning processes address inequalities in men's, women's and youth's social, cultural and economic roles in agribusiness development.

### Questions for discussion

- a) State five gender mainstreaming crosscutting issues affecting agribusiness in Africa
- b) Suggest one intervention to raise the farmers' income that can be undertaken in your area, and explain how the gender issues will help you target the right group effectively.

### Suggested readings

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### Section 3 Conclusion

The discipline of agribusiness; over and above issues related to the agri-food supply chain and its development, englobes a number of cross-cutting and emerging issues that have been addressed in this section. The importance of micro and small-scale agribusiness enterprises and their role in the informal sector of the economy of a country have been highlighted. Imparting entrepreneurial skills in agricultural graduates, and facilitating their professional insertion in the business world through incubation facilities of their start-ups has been put forward as an important role to be played by relevant authorities, both public and private, in a country. Setting up agribusiness enterprises and sustaining them in the long run through proper financial management of the business has been demonstrated as vital for both start-ups and long-standing enterprises. Agriculture is known to be risky due to a number of factors that may not be under the control of the entrepreneur. However, adoption of risk management strategies can allow agribusiness managers to be better armed and prepared to face agricultural risks and uncertainties. Moreover, this section recognizes that in this era of fast technological progress, the agribusiness sector cannot lag behind in terms of ICT applications that can improve the livelihood of farmers such as faster access to information, and use of social media for marketing of products and services amongst others. Another important socio-economic factor is the role of women in agriculture and in agribusiness enterprises as being more and more recognized and addressed by public policies. In the same way, agribusiness research and extension services play a key role in promoting the agricultural sector in a country and paving the way to the professionalization of farmers as agriculture adopts a business outlook. Finally this section concludes with a chapter on the promotion of the right policy framework to foster public-private partnerships that can create the appropriate institutional environment for agribusiness development in a country. Overall, this section has attempted at showing the multi-faceted features of agribusiness that are worth highlighting as they do impact in one way or another on the success of the agribusiness sector as a contributor to the economic development of a country.

