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BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL AND PROCESS ENGINEERING

AGRO-PROCESSING ENGINEERING PROGRAMME

FINAL YEAR PROJECT REPORT

DEVELOPMENT OF THE FRAMEWORK FOR A DIVERSIFIED MILLET VALUE CHAIN STRUCTURE

ONGEMA DISMUS
BU/UG/2011/247
Email: dismusongema@gmail.com; +256 701 763645

SUPERVISOR(S)
MAIN SUPERVISOR: MS. KABASA SALLY MARY
CO-SUPERVISOR:ENG.ODOGOLA W. RICHARD

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ABSTRACT

Millets represent a collective term referring to a number of small-seeded annual grasses that are cultivated as grain crops, primarily on marginal lands in dry areas of temperate, subtropical and tropical regions. They are regarded as a subsistence product and generally looked upon as a famine crop for the poor. However value addition ensures that the usage of millet is diversified and its fiscal value enhanced. This study sought to establish a framework for diversified millet value chain framework in Soroti district in order to improve its competitiveness and enhance market access of millet for the benefit of the farming communities in ASALs of Uganda, with Soroti district being the case study. Specifically, this study analyzed the existing millet market value chain, identified traders key marketing constraints and established the roles of different actors within the value chain in the three markets of Arapai, Lalle and Aminit. A multistage sampling technique was used to collect information from 129 market actors using a semi structured questionnaire and analysis done using descriptive statistics. Result showed that majority of the actors had a mean age between 21- 50 years. Most producers (66.4%) were males while females (98%) concentrated in millet marketing activities. Empirical findings showed that, producers share of the final consumer price was 23.3% with processors having a higher margin compared to traders and producers despite their limited functions. Transport cost, police bribes, border taxes, rent and commission charges formed major components of marketing costs.

A framework for a diversified millet value chain structure was eventually successfully developed, with a close interaction, coordination and information feedback noted to play vital roles in the millet value chain and the benefits of value adding millet noted to diversify the usage and subsequently the nutritional benefits of millets.

However, a compact framework for diversified value addition of cereals related to millet was recommended to be studied and established, including a study to estimate and establish cost margins associated with millet value added products.

DEDICATION

I dedicate this humble work of my academic efforts to my parents Mr. Eyobu Asam Michael and Mrs. Asamo Rebecca

DECLARATION

I Ongema Dismus hereby declare that this is my original work which has been prepared under the guidance of my supervisors, and has never before been submitted to any institution of higher learning for any award.

Signature ..... Date... 22nd May, 2015.....

APPROVAL

Thus project report by Ongema Dismus which has been prepared under my close guidance and supervision has my express endorsement for submission for examination.

Main supervisor: Ms.Kabasa Sally Mary

Signature:

Date .....

Co –supervisor: Eng. Odogola W. Richard

Signature:

Date ..... 4th June 2014 .....

ACKNOWLEDGEMENT

This project work and my entire academic struggles of four years would not have been successful without the tireless contribution of different individuals to whom I not only acknowledge but also send my unreserved gratitude.

First and foremost I reserve my highest praise for God who held my hand and guided my feet from the time of first arrival to Busitema University four years ago to-date as I walk back after four successful years.

I must also acknowledge my class mates, friends and colleagues with whom, throughout the four years, we shared and had many long but valuable discussion that eventually led to my academic and project success.

My acknowledgments would be short without mention of my project supervisor's MsKabassa Mary and Eng. Odogola Wilfred who despite their busy schedules, found time to guide me through the research period. May God bless you abundantly.

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ACRONYMS

ASALs	-	Arid and semi-arid Lands
FGD's	-	Focus Group Discussions
ICRISAT	-	International Crops Research Institute for the Semi-Arid Tropics
MAAIF	-	Ministry of Agriculture, Animal Industries and fisheries
NAADS		National Agricultural Advisory Services
NGO's	-	Non-government organizations
UN	-	United Nations
UNIDO	-	United Nations International development organization
USAID		United States Agency for International development

DEFINITION OF TERMS

Brokers- These are specialized middlemen who operate from urban towns buying millet grains in their own name at discounted prices and selling to processors at higher prices to earn commission.

Dry milling- In this process, millet grains are first cleaned and dried for approximately 1 - 3 hours to allow moisture to spread throughout the grain. After which the coarse grains are sieved to completely remove any foreign material and then subjected to roller mills and particle size separation equipment to produce flour.

Gorogoro - is a volumetric measure of grain.

Large scale processors –These are urban based processors with machine capacity greater than 90 horsepower. They undertake milling function as a business and perform retailing functions.

Market trader– These are retailers and wholesalers who buy the millet in bulk and then sell on demand to other actors at higher prices to earn profit.

Rural agent - These are rural based actors who do not have personal cash for purchases in his name and therefore work for urban based traders for a commission.

Small scale processors- These are rural based processors with a machine capacity of below 90 horsepower and undertake processing functions to meet local consumer demands.

Snowball sampling– is a non-probability sampling technique used in identifying potential subjects in situations where subjects are hard to locate. This method relies on referrals from initial respondents in generating additional respondents.

Value chain actors- These are individuals participants involved in the transfer of pearl millet along the value chain.

Productive assets – are those assets which support the production of goods in a business enterprise.

CHAPTER ONE: BACKGROUND AND INTRODUCTION

1.0 Introduction

1.1 Background

Millets are highly variable grasses believed to have originated from West African wild grasses over 40,000 years ago (National Research Council, 1996)

They are identified by their small grain sizes and are considered 4th most important cereal after rice, maize, sorghum in terms of cultivation/production in tropics

Millets forms a staple diet for over 500 million households who are mainly small scale farmers living in arid/semi-arid lands of poorest states of the world (National research Council, 1996)

Traditionally grown low-scale for Home consumption, millets are currently however, there is increased demand for processed millet (value added millet) (MAAIF, 2010)

However, development of processed millet is constrained at different nodes of value chain. Presently however, government is promoting value addition- with millet being accorded increasing attention.

Value Chain is a full range of activities required to bring a product or service from conception, thru different phases of production (physical transformation and input of various services), delivery to final customers and final disposal after use (Kaplinsky and Moris 2001)

1.2 Problem Statement

For the poor communities living in arid and semi- arid regions of Eastern and Northern Uganda, Presently, climate vagaries are lowering the production, especially of rain-dependent traditional staple crops like millet. The challenge now for the agriculture industry in fighting possible hunger, is to explore the possibilities of producing and processing, in short, adding value to staple crops like millet so as to diversify their usage and increase their fiscal market value through a highly developed framework of a diversified value chain structure

REFERENCES

National Research Council,1996. National Science Education Standards.

MAAIF,2010. Statistical Abstract 2010; ministry of Agriculture.

Kaplinsky and Moris,2001. A Handbook for value chain Research.

Kodigehalli,2011., Analysis of performance and efficiency of pearl millet.

Gudmundsson et al.,2006; Kaplinsky and Readman,2001; Kaene,2008; Schipmann,2006; Stamm,2004; Mc Cormick,2001; Roldan and wim,2008; Olukosi and Isitor,1990; Mc Leod et al.,2009; Grimaud et al.,2007; Shively et al.,2008; piyapromdec et al.,2009. Analysis of performance and efficiency of pearl millet.

Kothari,2004. Research Designs and Methodology

Moses,1990. Sweet potato value chain, Nigeria.

UNIDO, Agro value chain analysis and development, technical report prepared by Agri business development Branch of UNIDO,Vienna, Australia, 2009.

United Nations reform and the international Labor organization,2009.

Fleury and Fleury,2003. An Investigation on the direct and indirect effect of supply chain Integration on firm performance.

Giuliani et al., 2005.Economic, social and environmental upgrading in value chains.

FAO,2007. The state of food and Agriculture.

Frederick and Gereffi,2004. Global value chains Initiative.

Invarson and Alvstam, 2010.Economic, social and environmental upgrading in value chain.

Kaplinsky and Gereffi,2001. Introduction; Globalization, value chains and development.

Gibbon,2001. Governing value chains; An Introduction Research Gate.

Gereffi et al., 2001.Governance of global value chains.

Gereffi,1994. Introduction; globalization, value chains and development.

Hellin and Erestein, 2009.Value chain analysis Methodology.International food policy.

Odame and Muange, 2010. Value chains using agricultural innovation system approach.

Humphrey and Schmitz,2001. A 'new' approach to global value chain analysis.

Porter, 1985.The effects of an integrative supply chain strategy on customer service and financial performance; an analysis of direct versus the international trade centre, 2003 indirect relationship.

Dogget,1988. Comparative assessment of finger millet and sorghum for household security in the face of increasing climatic risk.

Hulse et al.,1980. Sorghum and millet; their composition and nutritive value.

Dendy, 1995. Sorghum and millet; cultivated plants primarily as food sources vol. 1

FAO,1972. Manuals of Food quality control.

FAO and ICRISAT,1996. The world sorghum and millet economies, facts, trends and outlooks.

De wet, C.J. (1987). Some recommendations for agricultural and development in ciskei,Ciskei Agricultural journal (Bisho) 3rd quarter 1987,pp.19-21

Rao and Probhavathi, 1982.Role of millets in nutritional security of India. Policy paper No. 66 National Academy of Agricultural sciences, New Delhi; 16 pages