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**IMPACTS OF LOW ADOPTION OF MECHANICAL POWER TECHNOLOGY IN
CROP PRODUCTION. A CASE STUDY IN NAMBALE SUB COUNTY IGANGA
DISTRICT.**

BY

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BU/UP/2017/ 1307

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**A RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILLMENT OF
REQUIREMENTS FOR THE AWARD OF BACHELORS' DEGREE OF SCIENCE
EDUCATION OF BUSITEMA UNIVERSITY**

DECLARATION

I **KISIGE THOMAS** declare that this report is my own work and that it has never been presented or submitted in any University or any other higher learning institution before, for academic purposes or professional award or for similar or any other related purposes.

Signature

Date

APPROVAL

This report titled “Effects of low adoption of Mechanical Power Technology in crop production in Nambale Sub County” has been submitted to the University Examination Board under my approval.

Signed:Date:

MR. OCHAN MARTINE LUTHER

Department of Agriculture

DEDICATION

This work is dedicated to my only and only beloved parents, MRS. ALIKOBA AGNESS and My brother MR. BAZIGU MOSES who contributed much in my education.

This work is also dedicated to, my sister KAUMA JOYCE and NANGIA SARAH and others plus my dear Friends for their courage and compassion and love they showed to me during my studies.

ACKNOWLEDGEMENTS

First of all, I thank the Almighty GOD for enabling me during my all study until this moment of accomplishing my studies, for I understand that without his will I could not be able to reach this crucial stage.

I would like to express my sincere appreciation to my supervisor Mr. Ochan Martine Luther and all the Agriculture Department for wise advice and tireless guidance during all the period of my studies. I really appreciate all corrections and without them my academic dreams would not become a reality.

I would like to extend my thanks to farmers and Extension officer Nambale Sub County in all villages to whom questionnaires were administered, for their co-operation when I was gathering information required for the present study.

Lastly, but not least, I would like to pass my thanks to my beloved Mother Mrs Alikoba Agness, brothers and sisters, My Uncle; Mr. Ayagalwa Gerald and My friends; Ngotowa, Kwiri, Gidudu, Asaba, Mwogezi, Muzira, Bwire, Naigaga, Takoberwa and so on. I thank all mentioned for their moral, spiritual, financial and material support, patience and encouragement which in one way or another made my study to be successful It is not easy to mention all who contributed in one way or another in making this work done but I say thank you to all of you. And may the almighty GOD bestow his Mercy on you.

List of Acronyms:

FY.....Financial Year

MAAIF..... Ministry of Agriculture, Animal Industry and Fisheries

BMAU.....Budget Monitoring and Accounting Unit

FAO..... Food and Agricultural organization

SAMA.....Sustainable Agricultural Mechanization in Africa

MMP..... Malabo Montpellier Panel

ACF.....Agricultural Credit Facility

ABSTRACT

Mechanical Power Technology is the most effective farm power method used in crop farming activities which leads to plenty of food crop production. The main objective of this study was to investigate the effects of low adoption of Mechanical power Technology on household crop productivity. The specific objectives included: To find out the causes of low adoption of mechanical power technology on household crop production, To determine the measures to be taken to ensure adoption of mechanical power technology on crop production in Nambale Sub County Iganga District.

This study was necessary due to the fact that there were many production gaps that exist which have limited adoption of Mechanical Power Technology in the study region whose population is over 100,000 people with only about 2000 farmers. A qualitative cross-sectional survey design was used to collect data from the respondents. The sampling technique used was random sampling where 60 respondents were selected to participate in the study and were given well prepared questionnaires. The data collected was analyzed using tables, graphs and charts. The study results found that poverty was the most causal factor of low adoption of Mechanical Power Technology hence farmers are unable to purchase mechanical power equipments for crop production. This finding was obtained from 25% of the respondents in Nambale Sub County. However others are also real issues that also need to be addressed. The study also concluded that late planting and harvesting, low level of production and poor quality of the crop products produced are the major effects of low adoption of Mechanical Power Technology with an average with a sum total of 60% hence all these and others lead to the food insecurity. The study concluded that government support is the measure that can be put in place for farmers to adopt the use of Mechanical Power Technology with 41.67% of respondents. The study recommended the provision of credit and subsidy, extension services, reduction of prices for machines improving the level of education and so many others.

1.0 BACKGROUND

1.1 Introduction

Agricultural Mechanization embraces the use of tools, implements and machines for agricultural land development, crop production, harvesting, preparation for storage, storage, and on-farm processing. It includes three main power sources: human, animal, and mechanical. The manufacture, distribution, repair, maintenance, management and utilization of agricultural tools, implements and machines is covered under this discipline with regard as to how to supply mechanization inputs to the farmer in an efficient and effective manner(Adrianus G. Rij,2010)Mechanical power technology is the highest technology level in agricultural mechanization. It embraces all agricultural machinery which obtains its main power from other sources other than muscular power (Adrianus G. Rij,2010).

A lot of mechanical power technologies are used in various agricultural practices which may include the following as postulated by Jagdish Reddy, 2019. A tractor, which is an engineering vehicle specifically designed to deliver a high tractive effort (torque) at slow speeds, for the purposes of hauling a trailer or machinery such as that used in agriculture, mining or construction. Most commonly the term is used to describe a farm vehicle that provides the power and traction to mechanize agricultural tasks, especially (and originally) tillage, but now days a great variety of tasks. Agricultural implements may be towed behind or mounted on a tractor, and the tractor may also provide a source of power if the implement is mechanized (I dream of Jeanie etal,2020); A sprayer, which is used to spray insecticides, pesticides, herbicides, fertilizers and any other products meant to be sprayed on the plants; Field cultivator, for cultivating the farm or making the soil softer for planting; Shredders and cutters, for cutting un wanted vegetative growth and weeds; Seeders and planters, sowing/ planting of seeds of crops after land has been cultivated; Plough, for ploughing the soil before seeds are sowed or crops planted and so many others(Jagdish Reddy, 2019).

-1.2 Worldwide view about the use of mechanical power technology;

By 2050, global population is expected to reach 9.6 billion (Gerland et al., 2014). As a result, the consumption of staple cereals, including rice, wheat, maize, and other products is expected to

REFERENCES

- Daily Monitor, 18th/Aug/ 2020.
- Deborah k Kinobe , New Vision, 2020.
- BMAU Monitoring Reports FY 2010/2011 – FY 2016/2017.
- Second National Development Plan (NDP II) 2015/16-2019/20 National

Planning Authority.

- Josef Kienzle et al, *Integrated Crop Management* Vol. 20(2013)
- Patrick Kormawa et al, FAO, Sustainable Agricultural Mechanization 2018
- Agriculture Sector Strategic Plan (2015/16-2019/20)
- Brian et al, 2006, Farm power and mechanization for small farms in sub-Saharan Africa
- According to Andrew Masinde, (2013) , New vision Uganda.
- Busane Bafana, From Africa Renewal:
9, April, 2019 to July 2019.
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- Aggarwal, B. 1983. Mechanization in Indian agriculture. An analytical study based on Punjab. Monograph in Economics No.6 Delhi School of Economics. 6-13.
- Dr. Katrin Glatzel, the International Food Policy Research Institute, a US-based food research organization, 2018.
- APO. 1983. Farm mechanization in Asia, Asian Productivity Organization, Tokyo. 18-24.
- Balishter, Gupta, V.K. and Singh, R. 1991. Impact of mechanization on employment and farm productivity. *Productivity*.32(3): 484-489.
- Bhatia, B.S. 1990. Adoption of farm mechanization in a developing economy, Daya Publishing House, Delhi, 78-92.

- Brar, S.S. 1998. Dynamics of agricultural production pattern under varying input output price in Punjab. Thesis (Ph.D.) Agricultural Economics, PAU, Ludhiana. 18-19.
- DAS. 2012. Agricultural data (2012-13) of U. P. directorate of agricultural statistics, Lucknow. 12-34.
- De, Dipankar 1998. Research on energy requirement in agricultural sector under AICRP on ERAS.
- PLANT PRODUCTION AND PROTECTION DIVISION FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS Rome, 2013
- Josef Kienzle¹ et al, Integrated Crop Management Vol 20, 2013
- Agricultural Engineering Today.22(3-4): 60-85. De, Dipankar 2000. Power availability in Indian agriculture. Technical Bulletin CIAE, Bhopal. 5-9.
- Dhillon, B.S. and Sidhu, D.S. 1987. Economics of custom hiring of agricultural machinery in Punjab – a few case studies. Agricultural Engineering Today, 11(2) 15-19.
- FAO, 1997a. Agricultural mechanization strategy preparation: A guide. Agricultural Engineering Service. Rome, Italy. 135-152.
- Gajri, P.R.; Ghuman, B.S. and Singh, S. 2002. Tillage and residual management practices in rice-wheat system in indo-gangatic plains-diagnostic survey.