

**ADOPTION OF IMPROVED ONION PRODUCTION PACKAGE BY SMALLHOLDER
FARMERS IN GAMOGO SUB-COUNTY KAPCHORWA DISTRICT.**

WOZEI DAVID

REG: BU/UP/2018/3573

**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF AGRICULTURE
FOR PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE AWARD
OF BACHELOR'S DEGREE OF SCIENCE EDUCATION OF
BUSITEMA UNIVERSITY**

MAY, 2022

DECLARATION

I **WOZEI DAVID**, declare that this research report is original and it has never been presented anywhere in any institution of higher learning for any academic award.

Signature..... Date.....

APPROVAL

I hereby certify that this research report titled “**adoption of improved onion production package among smallhold farmers in Gamago sub-county kapchorwa district** ” is the original and individual work of wozei David. It has been done under my supervision and for the award of the bachelor’s degree of Busitema University with my due approval.

Signature..... Date.....

Name: Mr. Dramadri Afayo Gerald

Supervisor

DEDICATION

I dedicate this research report to my mother Mrs. Neuber Oliver, father Mr. Muloni Gibuzuyi Godffrey, and brother Buyi Edwin.

ACKNOWLEDGEMENT

I thank the Almighty God for his protection, love and provision upon my life, for enabling me to finish my course successfully and for seeing me through all the hurdles.

I thank Mr. Dramadri Afoyo Gerald for supervising me during my research, for frequent consultations, helpful comments and for reviewing the final text of this research report.

I acknowledge my family members my mother Mrs. Neube Oliver, father Mr. Muloni Gibuzuyi Godffrey, and brother Buyi Edwin for their continuous facialy and spiritual support during my studies.

I acknowledge the management of Gamogo Sub-County for their support and guidance without which the research couldn't have been successful.

I acknowledge friends at the faculty of science Education Nagongera Campus for support and guidance during the study times.

I acknowledge Higher Education Student Financing Board (HESFB) for financing the research and whole course.

TABLE OF CONTENTS

| | |
|---|----------|
| DECLARATION | i |
| APPROVAL SHEET | ii |
| DEDICATION | iii |
| ACKNOWLEDGEMENT | iv |
| LIST OF TABLES AND FIGURES..... | x |
| LIST OF ABBREVIATIONS..... | xi |
| ABSTRACT..... | xii |
| CHAPTER ONE | 1 |
| 1.0 Introduction..... | 1 |
| 1.1 Background to the study. | 1 |
| 1.2 Statement of the Problem..... | 4 |
| 1.3. Objectives | 4 |
| 1.3.1. General objective | 4 |
| 1.3.2 Specific objectives. | 4 |
| 1.4 Research Questions.7 Hypothesis..... | 5 |
| 1.5. HYPOTHESIS. | 5 |
| 1.6. Significance of the Study..... | 5 |
| 1.7.0. Scope of the Study. | 6 |
| 1.7.1. Content scope:..... | 6 |
| 1.7.2 Time scope..... | 6 |
| 1.7.3 Geographical scope..... | 6 |
| 1.8.0 Conceptual Framework of the Study. | 6 |
| CHAPTER TWO: LITERATURE REVIEW | 9 |
| 2.0 Introduction..... | 9 |
| 2.1. The level of onion production..... | 12 |

| | |
|--|----|
| 2.2.0 Improved Onion Production Package | 14 |
| 2.3.1. Improved onion varieties | 14 |
| 2.3.2. Seeding rate..... | 14 |
| 2.3.3. Fertilizer application rate..... | 14 |
| 2.3.4. Spacing..... | 15 |
| 2.3.5. Cultivation and weeding | 15 |
| 2.3.6 Chemical applicaton..... | 15 |
| 2.3.7 Frequency of irrigation. | 15 |
| 2.4.0. The factors for low adoption of the improved onion production packages. | 16 |
| 2.4.1. Farmer’s age..... | 16 |
| 2.4.2. Perception: | 16 |
| 2.4.3. Labour: | 16 |
| 2.4.4. Sex of the farmer:..... | 16 |
| 2.4.5. Availability of inputs: | 17 |
| 2.4.6. Time and rate fertilizer application: | 17 |
| 2.4.7. Transplanting time of seedling: | 17 |
| 2.4.8. Chemical application: | 17 |
| 2.4.9. Spacing:..... | 18 |
| 2.4.10. Extension contact | 18 |
| 2.4.11. Problem of Access to credit | 18 |
| 2.5.0. The strategies for mass adoption of the improved onion production packages..... | 19 |
| 2.5.1. Mass media exposure:..... | 19 |
| 2.5.2 Access to credit:..... | 19 |
| 2.5.3. Access to market:..... | 19 |
| 2.5.4. Contact with extension agent:..... | 19 |

| | |
|--|-----------|
| 2.5.5 Farming Experience: | 20 |
| 2.5.6. Education: | 20 |
| 2.5.7. Labor availability. | 20 |
| 2.5.8 Off-farm employment: | 20 |
| 2.5.9. Participation in cooperative society: | 20 |
| 2.5.10. Participation in field days: | 21 |
| 2.5.11. Participation in training: | 21 |
| CHAPTER THREE: METHODOLOGY | 22 |
| 3.0 Introduction..... | 22 |
| 3.1 Overview of Gamogo Sub-County Kapchorwa..... | 22 |
| 3.1.0 Location | 22 |
| 3.1.1 Geomorphology. | 22 |
| 3.1.2 Soils and Geology. | 22 |
| 3.1.3 Vegetation and Land use Stratification..... | 23 |
| 3.1.4 Temperature and Humidity. | 23 |
| 3.1.5 Wind..... | 23 |
| 3.1.6 Rainfall Average. | 23 |
| 3.1.7 Hydrology. | 23 |
| 3.1.8 Population. | 23 |
| 3.2 .0 Research design. | 24 |
| 3.2.1 Population and sampling procedure..... | 24 |
| 3.2.2 Data collection methods..... | 24 |
| 3.2.3 Validity of Data Collection Instruments. | 24 |
| 3.2.4 Reliability of Data Collection Instrument..... | 25 |
| 3.3.0 Data collection instruments..... | 25 |

| | |
|--|-----------|
| 3.3.1 Questionnaires..... | 25 |
| 3.3.2 Structured interview guide..... | 25 |
| 3.4.0 Data processing and analysis..... | 25 |
| 3.5.0 Ethical considerations..... | 25 |
| CHAPTER FOUR: PRESENTATION OF THE RESULTS, ANALYSIS AND DISCUSSION | 26 |
| 4.0. Introduction..... | 26 |
| 4.1. Back ground information of respondents..... | 26 |
| 4.1.1. Gender of the respondents | 26 |
| 4.1.2. Age of the respondents..... | 27 |
| 4.1.3. Marital status of the respondents | 28 |
| 4.1.4. Academic qualification of the respondents..... | 29 |
| 4.1.5. Occupation | 30 |
| 4.1.6. Experience..... | 31 |
| 4.2. The level of onion production in Gamogo sub-county kapchorwa district | 32 |
| 4.3. The improved onion production package practiced by farmers in Gamogo sub-county kapchprwa district..... | 33 |
| 4.4.Factors for low adoption of improved onion production package in Gamogo sub-county kapchorwa district..... | 34 |
| 4.5. Strategies for mass adoption of onion production package | 36 |
| CHAPTER FIVE: CONCLUSION, AND RECOMMENDATIONS | 38 |
| 5.0. Introduction..... | 38 |
| 5.1 Discussion of findings..... | 38 |
| 5.1.1. The level of onion production in Gamogo sub-county kapchorwa district. | 38 |
| 5.1.2. The improved onion production package practiced by farmers in Gamogo sub-county kapchprwa district..... | 38 |

| | |
|--|----|
| 5.1.3. The factors for low adoption of improved onion production packages in Gamogo sub-county kapchorwa district..... | 39 |
| 5.1.4. The strategies for adoption of improved onion production packages in Gamogo sub-county kapchorwa distric | 41 |
| 5.2. Conclusion | 42 |
| 5.3. Recommendation | 42 |
| 5.4: Area of further research | 43 |
| REFERENCES | 44 |
| Appendix 1: Questionnaire for the participants. | 49 |

LIST OF TABLES AND FIGURES

| | |
|--|----|
| Figure 1: Conceptual Framework | 7 |
| Figure 4.1: Pie Chart showing the gender of the respondents | 26 |
| Figure 4.2: Line graph showing the age of the respondents | 27 |
| Figure 4.3: Bar graph showing the marital status of the respondents | 28 |
| Figure 4.4: Pie Chart showing the academic qualifications of the respondents | 29 |
| Figure 4.5: Bar Graph showing Occupation | 30 |
| Figure 4.6: Pie Char showing working experience..... | 31 |
| Table 4.1: Showing the level of onion production in Gamogo sub-county kapchorwa district | 32 |
| Table 4.2: Showing the improved onion production package practiced by farmers in Gamogo sub-county kapchorwa district. | 34 |
| Table 4.3: Showing Factors for low adoption of improved onion production package in Gamogo sub-county kapchprwa district | 33 |
| Table 4.4. Showing strategies for mass adoption of onion production package..... | 36 |

LIST OF ABBREVIATIONS

| | | |
|-------|---|--|
| DRDIP | : | Development Response to Displacement Impacts Project |
| S/c | : | Sub-county |
| USAID | : | United States Agency for International Development |
| USD | : | United States Dollars |

ABSTRACT

The study of assessment of the factors influencing the Adoption of improved onion production package in Gamogo sub-county kapchorwa district. The study was guided by specific research objectives which included assesimng the level of onion production, finding out the improved onion production package practiced by farmers, determining the factors for low adoption of improved onion production packages and establishing the strategies for adoption of improved onion production packages in Gamogo Sub-County Kapchorwa District.

The study used cross sectional design and a case study was Gamogo Sub-County Kapchorwa District. To achieve the set objectives the study used purposive sampling and simple random sampling in sample selection. A sample of 63 respondents participated in study. Farmers filled the questionnaires because they were in constant engagement and introduction letter was obtained from the faculty of science and education introducing the researcher to the field of research.

The study revealed information on growing onions on the farm like growing bombay red, red creole, planted malkam brown, produce were increasing in some areas and produce were decreasing in some areas, and the age influences growing of onions. In addition, the findings revealed that proper application of the recommended rate is important to obtain the required yield, as far as fertilizer use is concerned, onion growers in the study areas are aware of the need for using fertilizer in their onion production, and growing onion needs men because they can move to get the information on how to grow it better. The findings revealed that there are advantages of using onion production package, high production per hectare, high price/kg, market demande, shortage of seed, shortage of fertilizers, shortage of labour, storage problems, high costs of inputs. Besides, respondents made use of mass media, having access to credit, having access to market, getting guidance from the extension agent, having training on the improved package, employed on farms which practice them is yet another strategy.

In conclusion, it was found out that farmers receive extension service annually, and plant onions on their farms.

The researcher recommends that extension workers should offer services to farmers at regular interval, government should allocate more funding, and farmers should seriously put in practice what the extension workers tell them.

CHAPTER ONE

1.0 Introduction

The chapter consists of the introduction of the study. The chapter further discusses the statement of the problem, objectives, the justification of the study, scope of the study and conceptual frame work.

1.1 Background to the study.

Onion (*Allium cepa* L.) is one of the most important vegetable crops commercially grown in the world. It probably originated from Central Asia between Turkmenistan and Afghanistan where some of its relatives still grow in the wild. Onion from Central Asia, the supposed onion ancestor had probably migrated to the Near East (Grubben and Denton, 2004; Bagali et al., 2012).

Onion is grown mainly for its bulbs; although the green shoots of salad onion is also an important crop. The onion bulb consists of the swollen bases (sheaths) of bladed leaves surrounding swollen bladeless leaves. Each leaf consists of a blade and sheath; the blade may or may not be distinctive. The sheath develops to encircle the growing point and forms a tube that encloses younger leaves and the shoot apex. Collectively, the grouping of these sheaths comprises the pseudo-stem. It is used primarily as flavorings agents and its distinctive pungency, which is due to the presence of a volatile oil . The mature bulb contains some starch, appreciable quantities of sugars, some protein, and vitamins A, B, and C (Decoteau, 2000).

In Africa, Onion was introduced to the agricultural community of Ethiopia in the early 1970s when foreigners brought it in. Currently, the crop is produced in different countries for local consumption and for export of flowers to European markets. The average annual sale of dry bulb and cut flowers from Ethiopian Fruit enterprise alone was estimated to be about 6.2 millions (Ethiopian fruit and vegetable marketing , 1998). In the year 2001 the crop shared one fourth of the vegetable export quantities and stood third following green beans and peas contributing about 20% of the total vegetable export value which is about 244,000 US dollar of export earnings. In addition to dry bulb, onion cut flower also constitutes significant proportion of foreign export values. In between the years 1999-2001 alone, about 1.75 millions worth cut flower stems were exported.. Onion seed production depends on the cultivar, location, growing season and adequate plant protection measures (Lemma and Shimelis, 2003).

REFERENCES

Aberra, A., and A. Teshome. 2009. **The agricultural/pastoral extension system in Ethiopia: Opportunities, challenges and future prospects.** Draft report of a panel discussion, March, Addis Ababa, Ethiopia.

Abrhaley Gebrelibanos, 2007. **Farmers' Perception and Adoption of Integrated Striga Management Technology in Tahtay Adiabo Woreda, Tigray, Ethiopia.** M.Sc Thesis Submitted to School of Graduate Studies, Haramaya University.

Asante B. O., Otoo E., Wiredu A. N., Patricia Acheampong P., Osei-Adu J. and Nsiah Frimpong B., (2011). **Willingness to adopt the vine multiplication technique in seed yam production in the forest savanna transition agro-ecological zone, Ghana.** *Journal of Development and Agricultural Economics*

CSA Report of Federal Democratic Republic of Ethiopia (2001/02). **Statistical Report on Socio-Economic Characteristics of the Population in Agricultural Households, Land Use, Area and Production of Crops.** Addis Ababa: CSA.

Dasgupta S. (1989). **Diffusion of Agricultural Innovations in Village India,** Department of Sociology and Anthropology, University of Prince Edward Island, Canada.

Decoteau, D.R., 2000. **Vegetable crops. Prentice-Hall, inc. USA. 561p**

sDegnet Abebaw, 1999. **Determinants of adoption of high yielding varieties of maize in Jimma Zone:** The case of Mana and Kersa Woredas. An M Sc Thesis Presented to the School of Graduate Studies of Alemaya University, Alemaya.

Dessalegn L. and Aklilu S., (2003). **Research Experiences in Onion Production. Research Report No. 55.** Ethiopian Agricultural research Institute, Ethiopia

Dixon J. and Gulliver A., (2001). **Farming Systems and Poverty; Improving Farmers' Livelihoods in a Changing World.** FAO and World Bank Rome and Washington D.C. Accessed on May, 2012. <ftp://ftp.fao.org/docrep/fao/003/y1860e/y1860e00.pdf>

Ethiopian Fruit and Vegetable Marketing Enterprise (ETFRUIT), 2003. **Annual Report for the period 1987-1992.**, Addis Abeba pp.

FAOSTAT, 2020. **Data on commodity production.**

Feder L., Just R.E. and Zilberman O., (2001). **Adoption of Agricultural Innovation in Developing Countries: “A survey”** *Economic Development and Cultural Change*, 32(2): 255-298.

Feder, G. L. Just R.E. and Zilberman D. 1985. **Adoption of Agricultural Innovation in Developing Countries; “A Survey”** *Economic Development and Cultural Change* 32(2): 255 – 298p.

Feder, G. L. Just R.E. and Zilberman D. 2009 **adoption of Agricultural Innovation in Developing Countries; “A Survey”** *Economic Development and Cultural Change* 32(2): 255 – 298p.

Habtemariam Abate, 2004. **The comparative influence of intervening variables in the adoption behavior of maize and dairy farmers in Shashemene and Debre Zeit, Ethiopia.** Ph. D. Thesis, University of Pretoria, Pretoria.

Kaguongo W., Ortmann G.F., Wale E., Darroch M.A.G. and Low J., (2012). **Factors influencing adoption and intensity of adoption of orange flesh sweet potato varieties: evidence for an extensive intervention in Nyanza and Western Province, Kenya.** *Journal of Agricultural Research*

Kansana, H. S., R.P. Sharma and S.K Sharma, 2006. **Knowledge and adoption of wheat technology among contact and non-contact farmer.** *Agricultural Science, Digest Karnal.*

Kapchorwa District Local Government (2015). **District Development Plan 2015/2016-2019/2020.**

Kassa, B. 2002. **Constraints to agricultural extension work in Ethiopia: The insiders' view.** *South African Journal of Agricultural Extension / Suid-Afrikaanse Tydskrif vir Landbouvoorligting* .

Kebede Menjur, 2006. **Farmers' Perception And Determinants Of Land Management Practices In Ofla Woreda, Southern Tigray, Ethiopia..** M.Sc. Thesis (Unpublished) Presented To School of Graduate Studies of Alemaya University

Kidane Gebremariam, 2001. **Factors Influencing the Adoption of New Wheat and Maize Varieties in Tigray, Ethiopia: The Case of Hawzien Woreda.** M.S.C. Thesis Presented To School Of Graduate Studies Of Alemaya University, Ethiopia. 140p.

Leeuwis C. and Ban, A., (2004). **Communication for Rural innovation.** 3rd ed. **Blackwell Publishing UK**

Legesse Daddi .2004.**Adoption and Diffusion of Agricultural Technologies: The Case of East and West Shoa Zones, Ethiopia,** A Thesis Submitted to the University of Manchester for the degree of Doctor of Philosophy in the Faculty of Economics and Social Studies, School of Economic Studies.

Legesse Dadi, 2015. **Analysis of Factors Influencing Adoption and the Impact of Wheat and Maize Technologies.** In Aris Nagele, Ethiopia. M.Sc. Thesis.

Lemma Desalegne & Shimelis Aklilu, 2003. **Research experience in Onion Production. Research Report No 55.** Addis Ababa, EARO

Mahadi Egie,2005.Farmers' Evaluation, **Adoption And Sustainable Use Of Improved sorghum Varieties In Jijiga Woreda, Ethiopia** Msc. Thesis (Unpublished) Presented to School of Graduate Studies of Alemaya University.

Mihiretu T. A., (2008). **Farmers' Evaluation and Adoption of Improved Onion Production Package in Fogera District, South Gondar, Ethiopia** Accessed on June 2012. <http://mahider.ilri.org/handle/10568/683?show=full>

MoARD, 2005. **Ministry of Agriculture and Rural Development, Irrigation Development Package Manual. Published in Amharic Language.**

Mulugeta Enki, 2000. **Determinants of Adoption of Soil Conservation Practices in Central Highlands of Ethiopia.**The Case of three Districts of Selale. M.Sc. Thesis (unpublished).School of Graduate Studies of Alemaya University: Alemaya.

Nikus D and Mulugeta F, (2010). **Onion seed production techniques. A manual for extension agents and seed producers.** FAO-Crop Diversification and Marketing Development Project. Asella, Ethiopia.

Pathak, C. S., 2001. **Allium improvement for the tropics: Problems and AVRDC strategy.**

Paudel P. and Matsuoka A., (2008). **Factors Influencing Adoption of Improved Maize Varieties in Nepal: A Case Study of Chitwan District.** Australian Journal of Basic and Applied Sciences,

Paulos Asrat, 2002. **Determinants of farmers' willingness to participate in soil conservation practices in the highlands of Bale:** The case of Diniso farming systems area. An MSc Thesis Presented to the School of Graduate Studies of Alemaya University.

Potato Varieties in Boloso Sore Woreda, Southern Ethiopia. M.S.C. Thesis Presented to School of Graduate Studies of Alemaya University, Ethiopia.92p.

Rabinowitch, H.O. and Currah, L. 2002. **Allium Crop Science: Recent Advances.**CABI Publishing, UK.

Rahmeto Negash, 2007. **Determinants of improved haricot bean production package in Alaba special wored, Southern Ethiopia.** M.Sc. Thesis (Unpublished) Presented To School of Graduate Studies of Haramaya University.

Rogers E.M., (2002). **Diffusion of Innovation. The Free Press of Glencone.**

Rogers, E. M. and F.F. Shoemaker, 1971. **Communication of Innovation: A Cross-cultural Approach,** Second Edition. The Free Press, New York

Rubatzky, V., Yamaguchi, M. 2003. **World Vegetables: Principles, Production, and Nutritive Values. Chapman & Hall. New York, New York.**

Taha Mume, 2007. **Determinants of the adoption of improved onion production package in Dugda Bora district, East Shoa, Ethiopia.** M.Sc. Thesis (Unpublished) Presented To School of Graduate Studies of Haramaya University

Taha Mume, 2007. **Determinants of the adoption of improved onion production package in Dugda Bora district, East Shoa, Ethiopia.** M.Sc. Thesis (Unpublished) Presented To School of Graduate Studies of Haramaya University

Techane Adugna, 2002. **Determinants of Fertilizer Adoption in Ethiopia. The Case of Major Cereal producing Areas.** M.Sc. Thesis (Unpublished) Presented to School of Graduate Studies of. lemaya University.

Teressa Adugna, 2004. **Factors influencing Adoption And Intensity of Use of Fertilizer. The Case of Lume District, Central Ethiopia, Quarterly Journal of International Agriculture**

UBOS (2014). **National Housing Population Census 2014; Uganda Bureau of Statics, Kampala**

UNDP-UNDRO (1991). **Mitigation Strategies in Disaster Mitigation UN Disaster Management Training Program**

World Bank, 2004. **Opportunities and Challenges for Development of High Value Agricultural Exports in Ethiopia.** The World Bank Report No 14.

World Bank, 2004. **Opportunities and Challenges for Development of High Value Agricultural Exports in Ethiopia.** The World Bank Report No 14.

World Bank, 2004. **Opportunities and Challenges for Development of High Value Agriculture.**

Yishak Gecho, 2005. **Determinants of Adoption of improved Maize Technology in Damote Gale Woreda, Wolaita, Ethiopia.** Msc.Thesis (Unpublished) Presented to School of Graduate Study of Alemaya University.

Zziwa and Kabirizi, 2015.