



**ADOPTION OF BIOGAS AS AN ALTERNATIVE SOURCE OF ENERGY IN
JINJA DISTRICT**

BY

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DECLARATION

I, **Alupo Gertrude** hereby declare that this is my original work and has never been submitted to any university or institution of higher learning for any academic award.

Signature: *Alupo* Date: *14th July 2015*

APPROVAL

This dissertation has been submitted for examination with the approval of my supervisor.

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DEDICATION

I dedicate this dissertation to my father, Mr. Otim Pamfilio my mother Mrs. Otim Esther and all my siblings.

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LIST OF ABBREVIATIONS

ABPP:	Africa Biogas Partnership Program
AEATRI:	Agricultural Engineering and Appropriate Research Institute, Namalere
CAMARTEC:	Centre for Agricultural Mechanization and Appropriate Technology
CARITAS:	Catholic Agency for Overseas Aid and Development
CBOs:	Community Based Organizations
CREEC:	Centre for Research in Energy and Energy Conservation
DGIS:	Directorate General for International Cooperation
FAO:	Food and Agriculture Organization of the United Nations
HIVOS:	Humanist Institute for Cooperation with Developing Countries
IP:	Implementing Partner
NAADS:	National Agricultural Advisory Services
NGOs:	Non Governmental Organizations
PPP:	Public Private Partnership
SACCO:	Savings and Credit Cooperative Society
SNV:	Netherlands Development Organization
SPSS:	Statistical Packages for Social Sciences
UBOS:	Uganda Bureau of Statistics
UDBP:	Uganda Domestic Biogas Program

ABSTRACT

The purpose of this study was to obtain information about adoption of biogas as an alternative source of energy in Jinja district. Data was collected from 75 households which owned livestock.

Most (60%) of the respondents were male. The most predominant age group was > 46 years (44 %), and the majority (52%) had a family size of 6 to 10 people and had attained tertiary education. Majority (80 %) of respondents owned fixed domed bio digester. Major sources of information and maintenance about biogas were mainly from NGOs (64 %). Most (48%) of the respondents attributed the reason for adopting biogas to availability of feedstock and the most predominant challenge faced by most respondents who adopted biogas technology in the study area was low gas volume (20%).

Basing on the results of the study, it was concluded that all the respondents carried out mixed farming and most of the farmers owned cattle under intensive system of rearing. Most (48%) of the respondents attributed the reason for adopting biogas to availability of feedstock and the most predominant challenge faced by most respondents who adopted biogas technology in the study area was low volume of gas. The researcher recommends that operators of biogas plants should prepare feedstock appropriately that is mixing the water or urine with excrement to get a porridge mixture and use fresh excrement for feeding the digester to overcome the challenge of low gas volume.

CHAPTER ONE: INTRODUCTION

1.1 Background

Although having adequate, affordable, efficient and reliable energy services with minimum effect to the environment is a necessity to achieve social, economic and environmental aspects of development (Nyabawe & Kisaalita 2014). Marks & Wagg (2013) noted that 1.3 billion people had no access to electricity and 2.6 billion had no clean cooking solutions globally. This explains why in a report of the Ministry of water and environment, Kamuntu (2012) stated that there was need to create awareness for incentives for alternative sources of energy.

According to Dahunsi & Oranusi (2013), a biogas plant is an appropriate and sustainable method of disposal of human or animal waste to produce slurry and biogas for cooking and lighting in order to reduce on the strain on the environment by decreasing the use of biomass, and the production of green house gases as the methane produced from the manure is captured and used. Mulinda *et al.* (2013) referred biogas technology to a form of biomass energy which incorporates a wide range of biomass fuels which are often used in their unprocessed form.

In order to improve living conditions of households in Uganda, Kenya, Tanzania, Ethiopia, Senegal and Burkina Faso, the African Biogas Partnership Program (ABPP) was established in 2008. ABPP works hand in hand with The Netherlands Development Organization (SNV) which provides advisory services, with the aim of improving basic services, production, income and employment for people. In Uganda, the Uganda Domestic Biogas Program (UDBP) was initiated under the ABPP by Heifer International (Tumwesigye, 2013).

According to Sabiiti & Karugi (2006), the overall objective of the UDBP is to disseminate domestic biogas in rural and peri - urban areas with the ultimate goal of establishing a sustainable and commercially viable biogas sector in Uganda. The Catholic Agency for Overseas Aid and Development (CARITAS) JINJA was given the mandate to act as the Implementing Partner (IP) for UDBP in Busoga region of which Jinja district is inclusive.

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