FACTORS AFFECTING THE JOB PERFOMANCE OF AGRICULTURAL EXTENSION WORKERS IN HANDENI DISTRICT, TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION OF SOKOINE UNIVERSITY OF AGRICULTURE. MOROGORO, TANZANIA.

2015

ABSTRACT

This study was conducted to determine factors affecting job performance of agricultural extension workers (AEWs) at Handeni District, Tanga Region. Specifically the study aimed at assessing the job performance of extension staff working under the public and private sector, identifying personal factors of extension staff that affect job performance, determining the relationship between the level of logistic support and the job performance, determining the relationship between the volume of work and the performance of agricultural extension workers and the relationship between perception of job satisfaction and job performance of agricultural extension workers. Using a cross sectional research design a sample of 72 AEWs were randomly selected for the study using self- administered questionnaire. It was also observed that 55.0% of AEWs with certificate qualifications have higher job performance than those with higher level of education in the public sector. There was low level of logistic support to the AEWs working in Handeni District. Moreover, there was higher proportion of AEWs with low volume of work in the public sector compared to those in the private sector. The study showed that the volume of work had a significant influence of AEWs on job performance both in the public and private sectors. The results also indicated that most AEWs in the private sector have negative perception on job satisfaction. In the public sector there was significant relationship ($p<0.001$) between the perceptions of AEWs and job satisfaction. The AEWs with positive perception on the job satisfaction have higher job performance compared to those with a negative perception. It was observed that the AEWs working in the public sector were more knowledgeable than those working in the private sector. This study recommends that the government provides more support to newly employed public AEWs to establish more demonstration plots as that can motivate them and simplify the whole process of knowledge transfer to farmers.

DECLARATION

I, Mbega Witness Luvanda, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work done within the period of registration and that it has neither been submitted, nor being concurrently submitted to any other institution.

_____ _____

Mbega Witness Luvanda Date

(MSc. Candidate)

The above declaration is confirmed:

_____ _____

Prof. A. Z. Mattee Date

(Supervisor)

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ACKNOWLEDGEMENTS

First and foremost, I thank God my Lord for his abundant grace, love and guidance in my life.

I wish to express my sincere appreciation to my supervisor Prof A. Z. Mattee of the Department of Agricultural Education and Extension for his generosity, encouragement, guidance, patience, constructive comments and advice at all stages of the research and writing up of this dissertation. May God bless him.

I wish to thank my lovely husband Dr. Ernest Rashid Mbega for financing my postgraduate studies at Sokoine University of Agriculture. My heartfelt gratitude are extended to Mr. Zakaria Kiluwale the acting Handeni District Agricultural and Livestock Development Officer (DALDO) and also to Mr. George Mhina and Frednand Mngalla, the Agricultural Field Extension Workers (AFEWs) for guiding me in locating places so as to meet the targeted number of AEWs for data collection.

My special thanks are due to my employer, DED- Handeni for granting me permission to pursue postgraduate studies.

I also extend my gratitude to my fellow students, class of 2012/2013, especially MSc. Agricultural Education and Extension students. However, I will not be able to mention each and every one here, but only my discussion group members including Makongoro Mary, Kwileja Dimitri, and Rubuye Joseph.

Last, but definitely not the least, I humbly and lovingly give my sincere thanks to my beloved husband (Dr. Ernest Mbega) for taking good care of our children (Nara and Seaba) in my absence while at the same time doing his daily activities at the Ministry of Agriculture as a researcher. To you Nara (8 years), I still remember your concern for your Mummy when you would always ask me if I had printed and submitted my work to the supervisor. That was very kind of you and surely a maturely concern your age notwithstanding. For you Seaba (4year), although you were too young to talk, your cheery face when you saw me back from college was hugely inspirational. I took and appreciated it as a precious welcome home gesture! I know you will grow up to understand what this was all about. It won't be good if I will forget to thank my beloved daughter Rehema for taking care of Nara and later on Ana for taking care of Seaba with love and polite language in such a way that they always felt happy, loved and cared, while I was away from home.

Finally, my special thanks go to my parents and my siblings for all their love, moral support, understanding and great encouragement during the whole period when I was more engaged in academic than family issues.

DEDICATION

This work is dedicated to my parents Mzee Shadrack Luvanda and Mama Frida Fungo Luvanda who laid the foundation of my education, and to my lovely family, Dr. Ernest (husband), Nara and Seaba (children).

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LIST OF ABBREVIATIONS

AEWs	Agricultural Extension Workers
AFO	Agricultural Field Officer
AGRO	Agricultural Officer
DALDO	District Agricultural and Livestock Development Officer
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer Field School
FG	Facility Guarantee Program
HRD	Human Resource Development
ICT	Information and Communication Technology
LITA	Livestock Training Agency
MAFC	Ministry of Agriculture Food Security and Cooperatives
MATI	Ministry of Agricultural Training Institute
MUVI	*Muunganisho Ujasiriamali Vijijini*
NALERP	National Agricultural and Livestock Extension Rehabilitation Project
NBS	National Bureau of Statistics
NGO	Non Governmental Organization
NSPFS	National Special Programme for Food Security
PAO	Principal Agricultural Officer
SNAL	Sokoine National Agricultural Library
SPSS	Statistical Package for Social Sciences
SUA	Sokoine University of Agriculture
T&V	Training and Visit
URT	United Republic of Tanzania
USAID	United States Agency for International Development
WB	World Bank

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Agricultural extension is essential to agricultural development in many parts of the world (Mollel and Urio, 1999; FAO, 2005). It is important in the transferring of technology from experts such as researchers and progressive farmers to farmers, livestock keepers and other stakeholders (Ilevbaoje, 2004; FAO, 2003). Depending on experience and knowledge, agricultural extension can be organized in different ways to pursue different objectives (Mollel and Urio, 1999). In Tanzania, agricultural extension has traditionally been organized under the Ministry of Agriculture (Rutatora and Mattee, 2001). As with other public funded organizations, the provision of extension services has been criticised for not doing enough, not doing it well and for not being relevant (FAO, 2005). In an effort to transform and improve the effectiveness of extension services, the private sector has also been allowed to provide extension services through a decentralized programme to the Local Government Authorities at district level. Since many actors can provide extension services in the country, the sectoral ministries have the responsibility of policy formulation, quality control and human resource development (URT, 2000).

As extension work continues to expand, it is necessary to identify leadership skills possessed by the agricultural extension workers in order to gauge their performance in the extension system (Khalil *et al.,* 2008). Success of extension organization is dependent on the extension leader's ability to optimise human resources (Dubrin, 2007). Effective leader's behavior facilitates the attainment of the follower's desires, which then results in effective performance in the context of behavior, motivation, task design, goal setting, and most other primary areas of organization.

Armstrong (2006) commented that agricultural extension, whether public or private, operates in a context or an environment that influences the organization, form and content of transfer activities. Thus, understanding the environment or other factors influencing the job performance of the extension worker is of great importance. In this study, effort was made to identify the factors that affect the job performance of extension workers so that the information can be used to improve the work efficiency of extension workers in Tanzania.

1.2 Problem Statement and Justification

Farmers in many parts of Tanzania continue to use traditional agricultural production systems despite advances in technology and increased employment of extension workers in recent years. Factors cited to contribute to this include: limited communication between technology developers and extension workers, poor communication between actors in extension services delivery particularly the government, nongovernmental organisations, private sector (agribusiness) and the farmers (Mario *et al*., 2010). In the study by Mwandry (1992), the majority of extension workers were knowledgeable in the technology they deliver to farmers. However his study involved extension staff in the public extension service. Information from private extension staff is missing. Thus there is a need to study the factors affecting job performance of extension staff both in public and private sector organizations. Furthermore, Chimanikire *et al*. (2007) reported that extension staff are usually not satisfied with the whole extension service. There is a need therefore to find out the factors making extension workers dissatisfied. Handeni District was selected for this study because the findings obtained will be used to improve job performance of extension workers in Handeni and other areas in Tanzania.

1.3 Objectives

1.3.1 General objective

To determine the factors affecting job performance of agricultural extension workers in Handeni District.

1.3.2 Specific objectives

(i) To assess the job performance of extension staff working under public and private sector organizations

(ii) To identify personal factors of extension staff that affect job performance in public and private sector organizations

(iii) To determine the relationship between the level of logistic support and the job performance of agricultural extension staff in public and private sector organizations

(iv) To determine the relationship between the volume of work and the performance of agricultural extension workers in public and private sector organizations

(v) To determine relationship between perception of job satisfaction and job performance of agricultural extension workers in public and private sector organizations

1.3.3 Research questions

(i) What is the job performance of extension staff working under public and private sector organizations?

(ii) What are personal factors of extension staff that affect job performance in public and private sector organizations?

(iii) What is the relationship between the level of logistic support and the job performance of agricultural extension workers in public and private sector organizations?

(iv) What is the relationship between the volume of work and the performance of agricultural extension workers in public and private sector organizations?

(v) What is the relationship between perceptions of job satisfaction and job performance of agricultural extension workers in public and private sector organizations?

1.4 Conceptual Framework

Effective agricultural extension is crucial for enhanced agricultural production and productivity in developing countries such as Tanzania. Due to different factors, one of which is poor extension services, Tanzanian agricultural sector remains under low production and productivity (FAO, 2005). One of the options to improve agricultural productivity would be to motivate extension staff to work effectively through identifying and working on the problems that affect them. This can be done through analyzing several factors (Figure 1) such as age, sex, education, experience, salary and title (DeVaney and Chen 2003), organizational policies and procedures that have to do with housing, transport and motivation (Furnham, 1992), aspects of volume of work, job knowledge and job satisfaction (Anderson and Feder, 2004). Workers prefer jobs that reward them on the basis of what they perceive as economically justifiable (Robbins, 1991). For instance, motivation can be conceived of as whatever it takes to encourage workers to perform by fulfilling or appealing to their needs (Anderson and Feder, 2004). Extension workers who are poorly motivated result in low morale, low level of role perception and poor performance (Banmeke and Ajayi, 2005). Motivation for better performance

depends on job satisfaction, achievement, recognition and professional growth (Ibrahimu *et al.,* 2008). Motivation is very important in ensuring job satisfaction (Olajide, 2000).

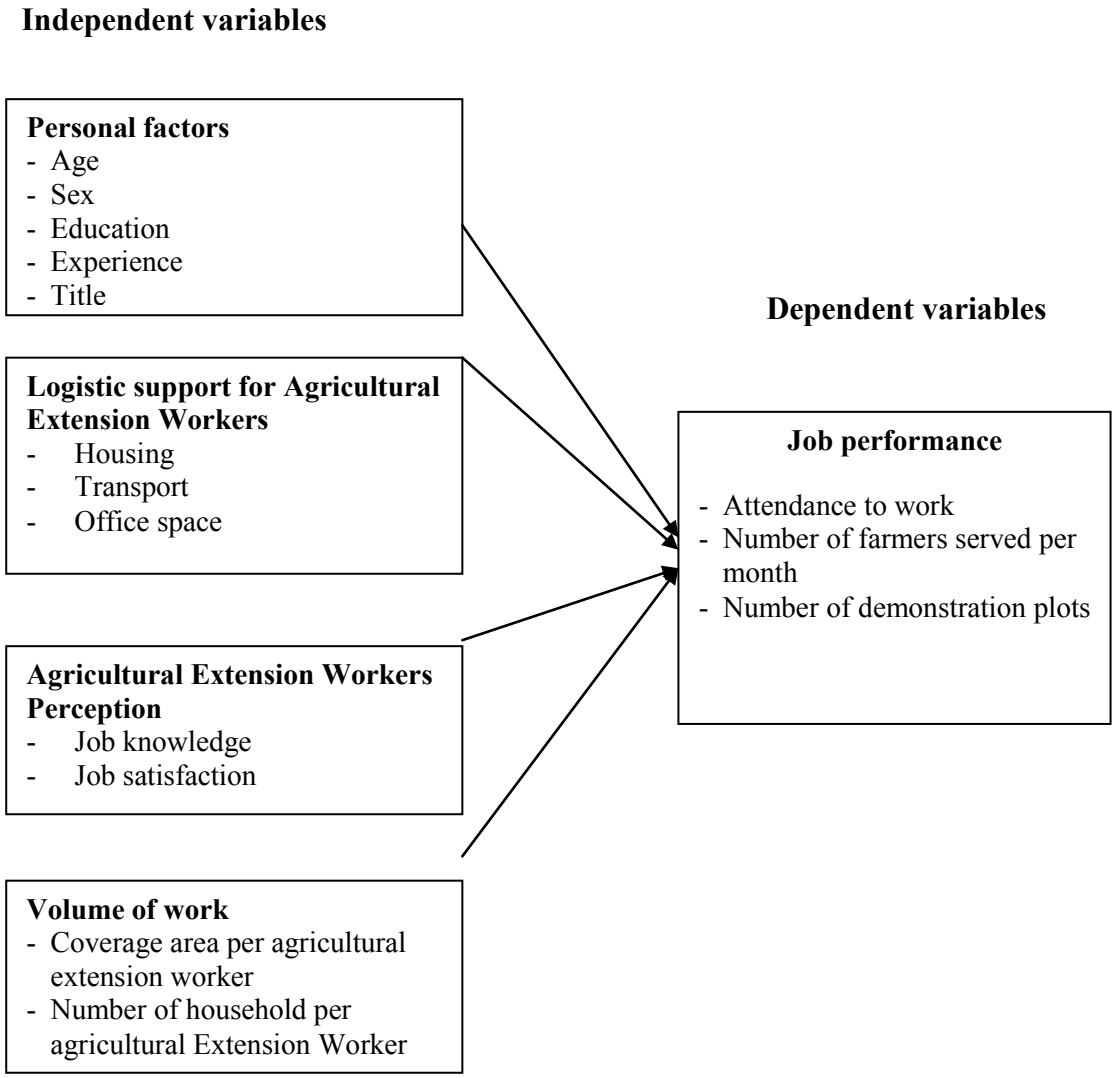

Figure 1: Conceptual framework of the study

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definition of Agricultural Extension

There are many definitions, philosophies, and approaches to agricultural extension, and the views of what extension is all about have changed over time. Extension originally was conceived as a service to "extend" research-based knowledge to the rural sector to improve the lives of farmers. It thus included components of technology transfer, broader rural development goals, management skills, and non-formal education (Davis, 2008). The traditional view of extension in Africa was very much focused on increasing production, improving yields, training farmers, and transferring technology. Today's understanding of extension goes beyond technology transfer to facilitation; beyond training to learning, and includes assisting farmer groups to form, dealing with marketing issues, and partnering with a broad range of service providers and other agencies (Christoplos, 2010).

Agricultural extension can be defined as the entire set of organizations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies to improve their livelihoods and well-being (Birner *et al*., 2006). It is also defined as a system that facilitates the access of farmers, their organizations and other market actors to knowledge, information and technologies, interaction with partners in research, education, agribusiness, and other relevant institutions; and assists them to develop their own technical, organizational and management skills and practices (Christoplos, 2010).

2.2 Providers of Agricultural Extension in Tanzania

There are two main providers of agricultural extension services in Tanzania namely public and private sector organizations (Rutatora and Matee, 2001). The public extension services are provided mainly by the Ministry of Agriculture, Food Security and Cooperatives and Local Government authorities, while the private extension services are provided by Non-Governmental Organisations (NGOs), private agribusiness and Community-Based or Farmer Organizations (Table 1).

Table 1: Characteristics of major providers of extension in Tanzania

Provider	Coverage	Organizational structure	Coordination	Internal cost structure	Ownership and accountability	Financial and organizational sustainability
MAFC	National wide	Strongly hierarchical and bureaucratic	Difficult to coordinate with non-extension	Covers personnel costs	Non- ownership by farmers	Difficult to maintain acceptable level
NGOs	Specific locations	Less hierarchical and bureaucratic	Amendable coordination	Ensure large budget	Increase ownership perception	Dependent and unsustainable
LG	District	Depends on existing structure	Similar to MAFC	Covers personnel costs	Non ownership by farmers	Varies
PA	Profitable area	Variable, small but efficient	Possible and not cost full	Minimize costs	Organization level	Depends on profitability
FGP/ASS	Specific and limited	Flexible and Democratic	No coordination	Limited for communal work	Limited to group members	Not sustainable

MAFC = Ministry of Agriculture Food and Cooperatives, NGOs = Non Governmental Organization, LG = Local Government, PA=Private
Agribusiness, FGP/ASS =Farmer Groups/Associations. Source: Rutatora and Matee (2001).

2.3 The Role of Agricultural Extension Services in Tanzania

Role refers to responsibility, obligation or expected behavior attached to any social position (Ekong, 1988). Agricultural extension services link researchers to farmers by keeping abreast with new technological developments. A strong link between extension workers and researchers can improve the quality of disseminated information, as well as adoption of new technologies by farmers, and consequently leading to increased agricultural production and improved livelihoods of the rural poor (Kimaro *et al*., 2010). Agricultural extension services make significant contributions to agricultural development, environmental protection and sustainable management of natural resources by promoting conservation of land, forests, biodiversity, pesticide safety and residue minimization, livestock waste management, water quality preservation and watershed protection (World Bank, 2002; Karbasion *et al*., 2007; Akinnagbe and Ajayi, 2010).

According to Van den Ban (2000), agriculture extension is a public service for human resources development (HRD) of workers in agribusiness sector, including farmers. The function of agricultural extension is not only seen as a vehicle for spreading scientific and technical progress and technology transfer but rather as a broader concept which emphasises implementation of projects, delivery of knowledge and information.

Agricultural extension plays an expanded role with a diversity of objectives, which include: linking farmers more effectively and responsively to domestic and international markets; enhancing crop diversification; coupling technology transfer with other services relating to input and output markets; poverty reduction and environmental conservation; viewing agriculture as part of a wider set of rural development process that includes enterprise development and non-farm employment; and capacity development in terms of strengthening innovation process, building linkages between farmers and other agencies,

and institutional development to support the bargaining position of farmers (Sulaiman *et al.,* 2006).

2.4 Role of Agricultural Extension Worker

The agricultural extension worker serves as an administrative leader and coordinator for formulating, developing, implementing and evaluating agricultural extension programmes as well as developing farmers in managing resources in the rural areas. Success of an agricultural extension organisation depends on the leader's ability to optimise human resources and motivate participants to acquire a positive desire for achieving the desired level of performance (Dubrin, 2007; Chimanikire *et al*., 2007). Leadership is crucial in agricultural extension services. Interest in the concept of leadership has been steadily increasing among scholars, public and private organisations since late 20th century (Shriberg *et al.,* 2005). There are as many definitions of the concept of leadership as there are authors on the subject of leadership. Bass and Avolio (1990) indicated that there are almost as many different definitions of leadership as there are persons who have attempted to define the concept. Some of the authors have defined leadership as a position, a person, a behavioral act, a style, a relationship or a process. Thus, finding one specific definition of leadership is a very complex task as studies on the topic are wide and varied and there is no generally accepted definition (Bass, 1985).

Although there is no single accepted definition generally, leadership involves influencing other individuals to act towards the attainment of a goal or goals. Okwoche and Asogwa, 2012), defined leadership as the process of influencing the activities of an organised group in efforts towards goal setting and goal achievement." This is in line with Dubrin (2007) who defined leadership as a process whereby an individual influences a group of individuals to achieve a common goal. In the field of agricultural extension, leadership

has critical strategic importance since it deals with developing groups of farmers in the community. Agricultural extension worker in this sense serves as an administrative leader and coordinator for formulating, developing, implementing and evaluating agricultural extension programmes as well as develop farmers in managing resources in the rural areas (Okwoche and Asogwa, 2012). He/she guides the extension education activities for farmers as groups or individuals towards the purposeful pursuance of given objectives within a particular situation by means of extension communication methods. Radhakrishna *et al*. (1994) emphasised that the leadership role of extension workers has become an increasingly critical element in the successful performance of extension programmes. Shriberg *at al.* (2005) identified four leadership functions of extension worker, namely, as a catalyst, solution giver, process helper and resource linker. This means that extension workers as leaders should raise the awareness of farmers, form functional farmers groups and make decision for solution together with farmers. Extension workers, who possess the desire to lead, may enhance their skills and abilities required for the leadership role that might influence their performance and success (Okwoche and Asogwa, 2012).

Thus one other major role is to provide advisory services to agricultural-based problems. Extension and advisory systems, focus on four major types of objectives, including 1) technology transfer, especially for the staple food crops; 2) human capital development, especially the technical and management skills and knowledge that poorly educated farm households need to increase farm income; 3) building social capital, or getting farmers organized into producer groups or other types of farm organizations to carry out specific activities, ranging from supplying high-value crops to urban markets to managing watersheds; and 4) educating farmers to utilize sustainable natural resource management practices (Samuel, 2000).

In recent years, the role and objectives of agricultural extension have changed and have involved diversity of actors within different (enterprise, research, intermediary and demand) domains as well as support systems, who play different but inter-related roles to promote innovation within a pluralistic system (Swanson, 2006). The pluralistic approach facilitates access of farmers, their organizations and other market actors to knowledge, information and technologies and facilitating their interaction with partners in research, education, agri-business, and other relevant institutions; and assisting them to develop their own technical, organizational and management skills and practices (Christoplos and Kidd, 2000).

2.5 Approaches of Agricultural Extension Systems

Agricultural extension approach refers to as the basic planning philosophy that is being adopted by an agricultural extension organization (Asiabaka, 2003). Some of examples of widely used approaches in Agricultural Extension are Training and Visit (T&V) and Farmer Field Schools (FFS)

2.5.1 Training and visit approach

The "Training and Visit" (T&V) is an extension approach that concentrates on the transfer of scientific agricultural knowledge and technology from research institutions to farmers (World Bank, 1994). Ilevbaoje and Isaac (2004) defined Training and Visit (T&V) as a methodology using a single line of command to disseminate technical messages to target farmers so as to increase productivity. The term training and visit sums up the process of service delivery. Subject matter specialists give training to frontline extension agents on new but simple technical issues (Wouter, 2005). The trained extension agents visit contact-farmers to deliver the technological messages. The goal of T&V was to increase crop production in controlled environments (e.g. irrigation

schemes). Early experiences have shown quick production increases in cotton, rice and wheat (World Bank, 2002). T&V was an example of a rationalist approach (Wouter, 2005).

The T& V approach was introduced in Tanzania by the World Bank in 1988 under the National Agriculture and Livestock Extension Rehabilitation Project (NALERP) and was subsequently adopted in more or less religious and enthusiastic manner. This model of technology transfer is often viewed as the linear model as it assumes a linear relationship between research, extension and farmers with organized publicly funded research as the source of innovation. During phase II of NALERP, the government focused more on pluralistic approach to extension services, which were more participatory, demand driven, farmer owned and cost effective (Chapman and Trip, 2003). This kind of extension model is usually top-down, often located within the ministry of agriculture (Birner and Anderson, 2007). This approach differs from the general extension by its emphasis on frequent in-service training for staff, regular visit to farmers farms, promotion of extension/research linkage and improved extension management (Asiabaka, 2003). The Bindlish and Evenson (1997) study showed that the T&V approach made extension more effective, led to agricultural growth, and realized high rates of return. Training and Visit (T& V) system became the dominant method for restructuring the extension services (Gowda, 2004).

The following are the observed strengths of T&V extension system/approach as reported by Mollel and Urio (1999). Farmers reported regular visits by the extension agents and emphasis on use of farm manure as the major strengths of the T & V. Frequent training of village extension agents who then communicated the ideas to farmers by visiting them regularly is another main feature of T & V. Advice on crops as well as livestock was also

considered as a strength of T & V. According to Ilevbaoje (2004), the following strengths were recorded; the system had a well-defined structural and institutional arrangement, it promoted and encouraged professionalism, it had in-built mechanisms for capacity/confidence building measures, it had an in-built monitoring and evaluation system, it had built-in supervision mechanisms which made staff to work more accountably, it had effective feedback mechanisms, it was flexible in terms of accommodating other agricultural and rural development projects, it enabled high potential contact with large numbers of farmers, and promoted greater ties among research extension, farmers and input agencies, and thus ensured a comprehensive and holistic approach in addressing the issues of agriculture.

The lack of complementary factors of production such as credit, input and reliable markets have been cited as serious weaknesses to the successful implementation of T & V (Isaac and Ilevbaoje, 2004). According to Swanson (2006), the weaknesses were as follows: fixed schedule, although T & V believed that a tight schedule of training and visits would automatically improve the effectiveness of the extension services, the schedules were not followed as expected, poor supervision, extension agents reported that there was irregular flow of funds, spares and fuel that affected supervision schedules.

2.5.2 Farmer field school approach

Farmer Field Schools (FFS) is a participatory method of learning, technology development and dissemination based on adult-learning principles such as experiential learning (Akinnagble and Ajayi, 2010). IFAD (2005) defined Farmer Field Schools (FFS) as a participatory platforms for improving decision-making capacity and stimulating local innovation for sustainable agriculture. It is a season-long training activity that takes place in the field. It is season-long so that it covers all the different developmental stages of the

crop and their related management practices. FFSs are not about theoretical topics but about practical, field oriented, hands-on topics (Akinnagble and Ajayi, 2010). Therefore, in the FFS, the field is the teacher since it provides most of the training materials like plants, pests and real problems. Within their own field, farmers feel much more comfortable than in a classroom. The training process is always learner-centered, participatory and relying on an experiential learning approach (Gallagher, 2002).

A Farmer Field School consists of a group of people with a common interest. They meet regularly to study the "how and why" of a particular topic. The group may be mixed with men and women together, or separated, depending on culture and topic (Gallagher, 2003). FFS offer community-based, non-formal education to groups of 20–25 farmers (Akinnagbe and Ajayi, 2010). It is facilitated by extension workers or skilled farmers, as the approach provides the opportunity for each participant to teach others what they have learned (Akinnagbe and Ajayi, 2010). Therefore at the end of the FFS cycle, certain farmers are chosen by the group to be farmers facilitators in such a way that they can lead their own FFS on the next season (IFAD, 2005). It increases the capacity of individuals and local groups for critical analysis and decision making, stimulate local innovation and emphasize principles and processes rather than recipes or technology packages (Gallagher, 2002). FFs fill gaps in local knowledge, conduct holistic research on agro ecosystems and increase awareness and understanding of phenomena that are not obvious or easily observable. FFS strength lies in increasing farmers' skills as managers of agro ecosystems (Sulaiman *et al.,* 2006).

FFS was developed in Asia to reduce the losses by insects in rice. The farmers were using chemicals to kill the insects but at the same time they also killed the predators of the insects resulting in more severe insect damage. The objectives of the FFS were to give

farmers insight in the ecological principles as well as improving farmers' analytical and decision-making skills and empowering the farmers so they could influence decision makers. This is making FFS a training method (Probst *et al.,* 2003). The FFS was designed and implemented with support from large donor agencies like the Food and Agriculture Organization (FAO) and the United States Agency for International Development (USAID).

This model for learning of farmers of knowledge-based technologies proved to be successful and was now used in other areas as well like watershed management forestry and animal husbandry. FFS emphasize four principles of IPM as follows: to grow a healthy crop, to conserve natural enemies of insect pests, to monitor the fields regularly; to become IPM experts through participation in FFS. The field is used as the primary resource for discovery-based learning. The process is facilitative and respects the experience that farmers bring with them. Farmers work in small groups to ensure that each one's ideas are shared. In the FFS, there is acceptance of the uniqueness of each participant. The activities are designed to respond to the immediate needs of farmers and are geared towards encouraging creativity and independence. The FFS Trainers play a crucial role in ensuring that the environment and all resources contribute to the farmers' learning experiences (Gallager, 2003).

2.6 Challenges for Extension Services in Tanzania

Despite the approaches implemented, several challenges have been reported to impede agricultural extension services in Tanzania. Some of the challenges are as follows: Staff movements such as retirement, redeployment, interdepartmental and interministry transfer's disturbed continuity of extension service delivery, as well as delayed programming (Kimaro *et al.,* 2010). Provision of quality agricultural extension services in

Tanzania is constrained by a number of factors including lack of recruitment, retirement and death of extension officers, lack of incentives, ill-equipped extension system, lack of re-training and logistics, and under-utilization of Information and Communication Technologies (ICTs) (URT, 2006). Poor delivery of agricultural extension services was also mentioned by Sanga *et al.* (2003) as among the factors contributing to low agricultural production. Qumar (2003) also reported the challenges that most agricultural extension services face are mostly of a technical and logistic nature. Some examples are insect pest invasions, outbreaks of serious diseases, severe climatic effects, natural disasters, or intensive campaigns for an increase in agricultural production.

The challenge currently posed by the HIV/AIDS epidemic to agricultural extension organizations in sub-Saharan Africa, however, is quite unusual as it affects both staff and clientele and involves human emotions to a depressing degree, that is, in addition to technical aspects. This challenge has at least three major dimensions. First, the very nature of the extension work, second, the impact of the epidemic on the extension organization itself and its staff, and third, the impact of HIV/AIDS on the clientele of extension services (Adebayo, 2010).

2.7 Predictors of Job Performance of Extension Workers

Predictors can be defined as cognitive abilities and job knowledge (Rezaie *et al.,* 2008). These are programme planning competencies, programme implementation, programme evaluation and organization commitment (Terziovski and Dean, 1998). Therefore extension workers who possess the desire to lead, enhance skills and abilities for the leadership role that influence performance and successes (Sallam and Akram, 2005; Oyinlade, 2006). Performance is generally discussed within the contexts of leader behavior, motivation, task design, goal setting, and most other primary areas of

organizational research. For example, the term performance is widely used in all fields of management using terms such as performance management measurement and evaluation or appraisal (Armstrong, 2006).

Dubrin (2007) describes leadership as a process whereby an individual influences a group of individuals to achieve a common goal. Leadership in the field of agricultural extension has a critical strategic importance since it deals with developing groups of farmers in the community. A leader must be competent and correlated with high performance (Dhanakumars, 2001; Linder, 2001; Armstrong, 2006). Those competencies remain one of the important variables to use in order to explain the performance of the agricultural extension worker as a leader to farmers. Consequently, competencies could potentially be used to integrate and link an organization's main human resource process such as extension performance management, training and leadership development, succession planning and rewards to the agriculture extension and rural development strategy (Linder, 2001).

Similarly findings of another research showed that possession of social competence led to a good prediction of job performance (Riggo and Taylor, 2000). Findings of another study indicated that among all individual factors, social skills was the strongest contributor in explaining the extension workers' performance (Thach *et al*., 2008). The result of regression analysis in the study of analysis of the job performance of the agricultural extension experts of Iran conducted by Rezaie *et al*. (2008) revealed that job ability (competency) contributed 48.6% of the variance in job performance of extension workers. Extension workers must be competent in the technical area of their job in terms of knowledge and skills in new technology. Boyd (2003) stated that successful extension workers should have strong technical knowledge and skills (competency).

Similarly, Belay and Abebaw (2004) contended that higher rates of technology adoption by clients are achieved when extension workers possess adequate technical competencies. Cultural competency has also become a necessity for service providers, professionals and agencies (Olsen *et al*., 2006). Since extension is a non-formal educational function that applies to any institution/agency that disseminates information with the intention of upgrading knowledge, attitudes, skills and aspirations of the people (Rivera and Qamar, 2003), cultural competency indeed appear to be a necessity for extension agency and extension worker as well. Dhanakumars (2001) and Linder (2001) reported that job performance and extension competencies are positively related. Similarly, Armstrong (2003) stated that competencies are factors that contribute to high levels of individual and organizational performance. On the other hand, by developing a set of competencies for extension workers and incorporating those competencies into training, the capacity of an extension organization to better serve its clients can be improved (Liles and Mustian, 2004). This definitely can increase the rate of adoption of new technologies by clients.

2.8 Factors Affecting Extension Services Performance

In Tanzania, several factors have been reported to affect agricultural extension services (FAO, 2008). These are as follows:

2.8.1 Socio- economic factors

Age, gender, education, professional training, working experience, marital status, income and field of specialization have an influence on the effectiveness of AEWs in disseminating information to stakeholders (recipients) (Dinar *et al.*, 2007). One important socio-economic factor is age. When considering age, it is expected that the young are energetic, mobile, dynamic and flexible who easily change and perform their duties effectively compared to older extension agents. However, the aged can perform better

based on accumulated experience (Onu *et al*., 2005). Another important aspect is the gender of AEWs (Onu *et al.,* 2005). It is assumed that male AEWs perform better in many aspects compared to their female counterparts particularly in patriarchal societies. However, this could be challenged because in the case of female AEWs, they face many problems including the socio cultural barriers (FAO, 2005), which affect their day- to-day activities in contacting small holder farmers compared to their male counterparts. Similarly, Onu *et al.* (2005) found that female AEWs faced a number of problems because of their double roles of providing extension services to farmers and performing household chores. In addition, FAO (2008) also reported that female extension officers are strongly believed to perform competently as male AEWs.

2.8.2 Organizational factors

2.8.2.1 Government economy and policies

In order to be effective, AEWs have to be facilitated and supported in one way or another. Job satisfaction depends on six components of overall job satisfaction, which include the job itself, salary, fringe benefits, authority to run programmes, supervision and opportunity for growth (Riggs, 1993). Logistic support in areas of good pay, security and good working conditions and job satisfaction has an impact on job performance of AEWs (Koontz 1988; Kanyama, 1999). On the other hand, inadequate resources, lack of transport, housing facilities to AEWs leads to ineffective transfer of improved agricultural technologies (FAO, 2008).

Other factors that could affect AEWs job satisfaction include lack transport at village level to enable them to move conveniently and timely, and lack of fringe benefits such as housing which is crucial for AEWs to live comfortably, lack of a fully established and

competent agricultural extension system and inadequate funds (Mattee and Mvena, 1988; Mwandry, 1992; Mattee, 1994).

2.8.2.2 Supervision, evaluation and reward

Supervision is another important requirement for effective functioning of any organization and agricultural extension services is not an exception. Supervision is the relationship between senior and junior member(s) of a profession that is evaluative, serves to enhance the skills of the junior person, and monitors the quality of the services offered by the junior person, and acts as gate keeping to the profession (Bernard and Goodyear, 2004).

Weak supervision may result in provision of poor quality services especially for village based AEWs who are normally the only agricultural professionals in the village, and commendable supervision may result in desired quality services. Effective supervision increase contacts between farmers and extension officers, helps to give quick feedback and give possible solutions to problems (Okwoche and Asogwa, 2012). For more than two and possibly three decades now, weak supervision and lack of performance standards for evaluating extension staff have been major challenges in managing agricultural extension activities (FAO, 2003).

2.9 Job Satisfaction of Agricultural Extension Workers

Dedication or commitment to duty is function of job satisfaction (Onu *et al.,* 2008). According to Kaya (1995), job satisfaction is the sum of all negative and positive aspects related to the individuals' salary, his physical and emotional working conditions, the authority he has, the autonomous usage of this authority, the level of success he has

maintained and the rewards given due to this success, the social status maintained in relation with his job, and his relations with his colleagues and administrators.

Thus an individual who goes to work finds himself striving to maintain a balance between all these elements, if he must avert the agony of dissatisfaction with his work and its consequent spillover into his personal life (Anyanwu *et al.,* 2000). When considering job satisfaction, demographic variables should be considered to thoroughly understand the possible factors that lead to job satisfaction and dissatisfaction. Onu *et al.* (2005) identified several characteristics of satisfied/dissatisfied workers. They indicated that morale is high when people first start their jobs. Morale decreases during the next few years and remains at a relatively low level until workers are in their late twenties or early thirties. At this time, job satisfaction levels begin to rise and continue to rise through the remainder of the workers' careers.

The same trend is found in regard to a worker's length of service. Workers begin with high morale, which drops during the first year and remains low for a number of years. Then as length of service increases, job satisfaction levels tend to rise. Concerning gender, there are no simple conclusions about the differences between males and females and their job satisfaction levels. Some studies reviewed by Meagan *et al.* (2005) indicated that males are more satisfied with their jobs, while others indicated that females are more satisfied in case of education levels. They found that workers with more education had a higher job satisfaction level, while other studies indicated that workers with more education had a lower job satisfaction level. Other studies showed no relationship between the two. Nestor and Leary (2000) suggested that a clear conclusion cannot be drawn concerning job satisfaction and its relationship to marital status, number of dependents, number of previous occupations, or ethnicity.

CHAPTER THREE

3.0 METHODOLOGY OF THE STUDY

This chapter describes the research methodology and it is divided into five sections. The first section provides an introductory part followed by a section on the description of the study area. The third and fourth sections describe the research design and sampling procedures, respectively. The fifth section explains on data collection procedures, processing and analysis.

3.1 Description of the Study Area

This study was conducted in Handeni District, which is one among the eight districts of Tanga Region in Tanzania. It is bordered to the west by the Kilindi District to the north by the Korogwe District, to the east by the Pangani District, and to the south by the Coast Region.

According to the latest Tanzania National Census, the population of the Handeni District was 276, 646 people, the number of households was 81,648 with an average of 4.8 persons per household (National Bureau of Statistics, 2012).

Handeni District Council has earmarked a number of specific types and areas for investment. For example, it comprises of areas for fruit growing, vegetable farming, dairying, sheep rearing, rubber production, honey production and processing, small-scale mining, cultural tourism, tourist hotel development and marketing (Tanga Regional Commissioner's Office, 2012). The choice of the district as the area of the study was because of its accessibility by road to various villages, passable at all times and also the existence of NGOs involved in extension as well as sufficient of number of extension

workers that operate at village level. The district lies within the latitudes $5^0 18'$ and $5^0 48'$ south and within longitudes $37^0 00'$ and $38^0 45'$ east, at an altitude between 600-1200 meters above sea level. The average temperature is about 29°C. The area has bimodal type of rainfall namely short rains, which start from October to December and long rains starting from March to May with an average annual rainfall of 500 and 1000 mm. The District extension services involve both public sector and private sector (Tanga Regional Commissioner's Office, 2012).

Private extension is simply the provision of a service or advice by a private firm in exchange for a fee; the terms and conditions of the transaction are negotiated in an open market (Chapman and Tripp, 2003). NGOs and private agribusiness are examples of private sectors located in the study area as shown in Table 2.

Table 2: Categories of AEWs working at Handeni District

Category	Number of AEWs at			
	District level	Ward level	Village level	Total
LGA staff	26	23	66	115
NGO staff	3	-	9	12
Agribusiness staff	5	-	8	13
Total	**34**	**23**	**83**	**140**

3.2 Research Design

This study employed a cross- sectional design whereby data were collected at a single point in time from a selected sample of AEWs including public and private extension workers at village, ward and District levels to represent some larger population. According to Mendenhall (1989), the design is suitable for descriptive interpretation as well as determination of the relationship between and within variables. In this study,

questionnaires were the main techniques used for data collection and this design was considered suitable for the circumstances.

3.3 Sampling Procedures and Sample Size

The population of the study consisted of public and private agricultural extension workers in Handeni District. The sampling frame from which the agricultural extension workers were selected was obtained from a list of all extension workers working under the District Agricultural and Livestock Development office. Handeni District had a total of 140 AEWs of which 115 were working under the public and 25 were under the private sector. For this study, a sample of 72 AEWs (53 from public and 19 from private sectors) was randomly selected in order to have at least 50% of all AEWs available at Handeni District. The distribution of AEWs sampled in this study is as shown in Table 3.

Table 3: Distribution of AEWs sampled

	Number of AEWs sampled at:			
Category	**District level**	**Ward level**	**Village level**	**Total**
LGA staff	12	7	34	53
NGO staff	2	-	9	11
Agribusiness staff	3	-	5	8
Total	**17**	**7**	**48**	**72**

3.4 Data Collection Procedures

3.4.1 Data collection instrument

Primary data were collected through interview with the District Agricultural and Livestock Development officers and self- administered questionnaire (Appendix 2) which was administered to the selected sample size of 72 agricultural extension workers. The self –administered questionnaire measured the training level, level of logistic support, level of job satisfaction and job performance in relation to the knowledge level, visit

efforts, demonstration plots and proportion of farmers served per month in their area of work. Information about factors influencing the job performance of agricultural extension workers was also gathered from Handeni District Agricultural Department.

3.4.2 Pre- testing of the Instrument

The questionnaires were pre-tested at Mazingara Ward, Handeni District before their actual use. This was necessary to check validity and reliability of the instruments. Five agricultural extension workers (three from public and two from private organization) were used for pre-testing and these were not included in the final sample.

3.5 Assessment of Job Performance

3.5.1 Method for analyzing job performance

Analysis on the levels of job performance was done through descriptive statistics. Job participation index on the variables was based on the number of demonstration farms plots in the village, frequency of extension officers to visit farmers per week, and the proportion of the farmers served per month. The responses were coded as 1 to 5 for each variable. The total values for job performance indicator ranged from 1 to 15. Job performance indices were categorized as low (1 to 5), medium (6 to 10) and high (11 to 15).

3.5.2 Method for analyzing perception of job satisfaction

In this study job satisfaction of the respondents was sought using Likert scale. The likert scale that was constructed had twenty statements which carried the negative and positive statements related to job satisfaction. Respondents were requested to say whether they strongly agreed, agreed, undecided, disagreed or strongly disagreed against each statement.

Reliability analysis using alpha was carried out to measure internal consistency of scales. Internal consistency is a measurable property of items that implies the items measure the same construct and reflect the extent to which items intercorrelate with one another. After doing reliability analysis the perceived job satisfaction statements had Cronbach's alpha 0.562 which is low than recommended alpha of 0.70 (George and Malery, 2003). Hence 12 statements out of 20 were step-wise deleted based on Cronbach's alpha, and remained with only 8 items which had Cronbach's alpha 0.710. Thus these 8 statements were the ones used for determining perception on job satisfaction index.The statements were coded using 1-5 scale where 1 = Strongly Disagreed, 2 = Disagreed, 3 = Undecided, 4 = Agreed, 5 = Strongly Agreed.

3.5.3 Method for analyzing logistic support

Logistic support was measured along ten dimensions, namely housing, transport (bicycle, motorbike, and vehicle), office space, adequate office furniture, stationery, literature, agricultural inputs, equipment, tools and demonstration plots. Data on logistic support were obtained by asking whether the respondents received the stated logistic support. The response for "yes' was given score 1 and "no" was given score of 0. The total value in the logistic support ranged from 0 to 10. Zero score respondents did not get any logistic support while 10 meant respondents receive all the mentioned support. Total score was divided by 10 so as to get index scores which ranged between 0 and 1. The index was categorized as poor for scores ranging between 0 and 0.25, moderate for more than 0.25 to 0.5, good for more than 0.5 to 0.75 and very good for more than 0.75.

3.5.4 Method for analyzing volume of work

Volume of work was measured along two dimensions, namely coverage area per extension workers (numbers of villages covered by extension workers) and number of

households served by extension workers. Data on two dimensions were obtained by asking respondents to answer the question on the mentioned variables which were the number of villages served and proportion of farmers visited per month in the village. Number of villages had responses ranging between 1 to 3, and proportion of farmers visited per month in the village ranged from 1 to 4. The responses for the two variables were summed, the total score ranged between 2 and 7. Index for volume of work was categorized as low (1 to 3), medium (4), High (5 to7).

3.5.5 Method for analyzing knowledge of respondents

In measuring the job knowledge, the AEWs were requested to indicate the technical recommendations for maize and sorghum production applicable in their areas of work. These two crops were selected due to their role as the main staple food for people in the study area.Through these the researcher obtained the informations on how the AEWs were knowledgeable on time of land preparation, seed, spacing, planting, fertilizer application, weeding, thinning, and insecticides application on plants for both maize and sorghum plants. Their responses were graded as 1= very knowledgeable, 2 = knowlegeble and 3 = not knowledgeable. Based on the total response of the score obtainded. The responses were summated and the total score ranged between 0 and 46. The scores were categorized as very knowledgeable (more than 23), knowledgeable (23) and not knowledgeable (less than 23).

3.6 Data Processing and Analysis

The data analysis sought to test the relationship between the training level, level of logistic support, level of job satisfaction and the job performance of the agricultural extension workers. Collected data from the questionnaire were coded, processed and

analyzed using several statistical procedures with the assistance of the Statistical Package for Social Sciences (SPSS) computer programme.

3.6.1 To assess the job performance of AEWs under public and private sector organizations

Cross tabulation was done between job performance index and working category of an extension workers (public and private). Chi square test was used to test if there was significant difference on the job performance between the extension workers working in the public and those working with private institutions. Chi square at $p \leq 0.05$ was used for testing significant influence while correlation was used to determine the extent and direction of association.

3.6.2 To analyse personal factors of extension staff that affect job performance of AEWs

Respondents' characteristics obtained through a questionnaire were analysed through descriptive statistics and cross tabulation. Descriptive statistics involved frequencies and percentages for age, sex, marital status, education, working experience. Cross tabulation analysis was done to examine if there was association between personal factors and job performance for the AEWs.

3.6.3 Analyzing relationship between level of logistic support and the job performance of AEWs

Cross tabulation was done between logistic support index and working category of AEWs (public and private). Chi square test was used to test if there was influence of logistic support on the job performance between the AEWs. Chi square at $p \leq 0.05$ was used for

testing significant influence while correlation was used to determine the extent and direction of association.

3.6.4 Analyzing relationship between volume of work and the job performance of AEWs

Cross tabulation was done between volume of work index and job performance category of AEWs (public and private). Chi square test was used to test if there was significant difference on the job performance between the AEWs. Chi square at $p \leq 0.05$ was used for testing significant association while correlation was used to determine the extent and direction of association.

3.6.5 To determine relationship between perceptions of job satisfaction of AEWs and job performance

Cross tabulation was done between job satisfaction index and job performance category of AEWs (public and private). Chi square test was used to test if there was significance difference on the job performance between the AEWs. Chi square at $p \leq 0.05$ was used for testing significance association while correlation was used to determine the extent and direction of association.

3.6.6 To determine relationship between knowledge of AEWs and job performance of AEWs

Cross tabulation was done between knowledge index and job performance category of AEWs (public and private). Chi square test was used to test if there was significant difference on the job performance between the AEWs. Chi square at $p \leq 0.05$ was used for testing significant association while correlation was used to determine the extent and direction of association.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 General Information of AEWs

The results show that 75.0% of Agricultural Extension Workers (AEWs) in the study area were males and only 25.0% were females (Table 4). These results indicate that the extension sector in Handeni District is dominated by males. The results also show that 40.3% of AEWs were young, aged 30 years and below, probably recent graduates of the Ministry of Agriculture Training Institutes (MATI) or Livestock Training Agency (LITA). The results also show that 27.8% of AEWs were aged 31-40 years while the remaining age categories, i.e. from 51-60 years and >60 years were relatively few (Table 5).

Table 4: Gender of Agricultural Extension Workers (n=72)

Gender	Frequency	Percentage
Male	54	75.0
Female	18	25.0
Total	**72**	**100**

High number of AEWs under the age below 30 years is due to recent employment by the government. More often, extension services in many African countries including Tanzania have been described as inadequate (Sharma, 2011). Recent employment by the public sector in Tanzania was therefore effected to support and provide reinforcement to field level extension workers. Those 5.6% with age above 60 years working in Handeni District are in private organizations. In the public sector, retirement age is restricted to 60 years old. Under special conditions, public AEWs can be allowed to work on contract basis where needed (Robert, 2005).

Table 5: Age of Agricultural Extension Workers (n = 72)

Age (years)	Frequency	Percentage
21-30	29	40.3
31-40	20	27.8
41-50	14	19.4
51-60	5	6.9
> 60	4	5.6
Total	**72**	**100**

Most of AEWs had formal education of at least Certificate training (Table 6). The largest proportion (47.2%) completed Diploma and relatively small proportion (9.7%) of AEWs had College/University qualifications (Table 6).

Table 6: Level of formal education of Agricultural Extension Workers (n =72)

Level of education	Frequency	Percentage
Certificate	31	43.1
Diploma	34	47.2
College/university	7	9.7
Total	**72**	**100**

Such results indicate that the AEWs in the study area were well trained. The results also show that 52.8% of AEWs had work experience of less than 5 years, followed by those (22.2%) with work experience of 5 – 15 years (Table 7). The proportion of AEW with working experience between16-25 years was 18.1% while that of those with work experience of between 26-35 years was 5.6%. The results also show that 1.4% of AEW had an experience of more than 35 years (Table 7). These results indicate that, the proportion of AEWs with the highest experience of working as AEW was smaller than those with lesser number of years as AEW. These results demonstrate that the work force of AEWs at Handeni District is dominated by less experienced staff in terms of number of years working as AEW.

Table 7: Working experience of agricultural extension workers (n = 72)

Number of years	Frequency	Percentage
< 5	38	52.8
5-15	16	22.2
16-25	13	18.1
26-35	4	5.6
36 and above	1	1.3
Total	**72**	**100**

More than half, 54.2%, of AEWs in the study area specialized in crops while the remaining 45.8% specialized in livestock and none of them were specialized in other fields such as nutrition, land use and cooperatives (Table 8).

Table 8: Area of specialization of Agricultural Extension Workers (n=72)

Area of specialization	Frequency	Percentage
Crops	39	54.2
Livestock	33	45.8
Total	**72**	**100**

The results also show that 73.6% of the AEWs were working under public organizations and 26.4% were working under private organizations such as World Vision, Agro-dealers, Muunganisho Ujasiriamali Vijijini (MUVI) and the church (Free Pentecostal Church of Tanzania) organization (Table 9). These results indicate that the extension service in Handeni District is dominated by the public sector.

Table 9: Type of organization of Agricultural Extension Worker (n = 72)

Type of organization	Frequency	Percentage
Public	53	73.6
Private	19	26.4
Total	**72**	**100**

4.2 Job Performance of AEWs

4.2.1 Determinants of job performance of AEWs

4.2.1.1 Number of times AEWs visit farmers

In assessing the number of times the AEWs spent in visiting farmers, the results show that 71.7% of AEWs under the public sector visited farmers once per week. The remaining 22.6% and 5.7% of AEWs visited farmers once per day and once per month, respectively (Table 10). In private organizations, about half (52.6%) of AEWs visited farmers once per month and the remaining staff visited farmers once per week (42.1%) and once per day (5.3%), respectively (Table 10). Such results indicated that public AEWs had higher frequencies of visiting farmers weekly. The private sector AEWs had lower frequency in visiting farmers once per month and once per week and were also rated very low in visiting farmers on a daily basis. These results generally demonstrate that public AEWs were closer to farmers and play a major role in providing agricultural information to the farmers at Handeni District since the majority visited farmers on weekly and a daily basis compared to private sector where the majority of AEWs visited farmers on monthly and less so on weekly and daily basis.

Table 10: Number of times used to visit farmers by AEWs

Number of visits	Public sector (n=53)		Private sector (n=19)		Total (n =72)	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Once per day	12	22.6	1	5.3	13	18.0
Once per week	38	71.7	8	42.1	46	63.9
Once per month	3	5.7	10	52.6	13	18.1
Total	**53**	**100**	**19**	**100**	**72**	**100**

These results support previous work by Ozcatalbas *et al.* (2010) who also showed that public institutions play a major role in the agricultural information system to farmers than

private institutions. High frequencies of visiting farmers by AEWs under public organization in the study was probably due to the fact that most of AEWs were posted to the respective villages and are obliged to live with farmers in their work stations as per Government of Tanzania employment regulations. This situation (living within working station) seems to increase interaction and communication between AEWs and farmers making agricultural information available timely (FAO, 2005). Private AEWs on the other hand live away from their work stations and possibly find it costly to visit farmers more frequently.

4.2.1.2 Number of demonstration plots established by the AEWs per village

In assessing number of demonstration plots established by AEWs, high performance was based on the established Handeni District Agricultural and Livestock Development Office's work performance standard where every AEW is required to establish more than one demonstration in their respective villages. Based on such requisites, the results show that, in public organizations 39.6% of AEWs established only one demonstration plot in their villages while 20.8% established two and 37.7% established more than two demonstration plots (Table 11). In private organization, the highest (57.9%) proportion of AEWs established more than two demonstration plots and the remaining established one (26.3%), two (10.5%) and no demonstration plots (5.3%). These results show that private organizations had more proportions of establishing demonstration plots than the public sector.

FAO (2005) report showed that, there exist 'dwindling budgets in public institutions'. Those budgets make the public organisations relatively inefficient and less productive while the private sector on the other hand, has generally more resources, innovative ideas, and a motive for profit and is thus keen to offer efficient and better services to its

clientele. In another study by Mwandry (1992) on the factors influencing the job performance of public agricultural extension workers in Morogoro Rural District, public AEWs lack necessary inputs such as seeds, fertilizers, pesticides and working tools making them inefficient to establish demonstration plots.

In establishing field demonstrations, i.e. the most widely used techniques in imparting farm information, extension services such as seeds, fertilizers, pesticides and guidance by the agricultural extension workers are very important (Oladosu, 2006). If AEWs have no such services needed for establishing the demonstrations, then it becomes difficult for farmers to see how new ideas work, and what effect it can have on increasing their production. The demonstration gives farmers the opportunity to observe first hand, the difference between a recommended new crop practice and traditional practices since 'seeing is believing' (Mwandry, 1992). By showing tangible results of new practice recommended by extension service, the agent can help to create confidence among the farmers and can greatly encourage them to try the practice themselves (Othman, 2006).

Kauzeni (1989) reported that demonstration initiates a process of learning, motivating and encouraging one to change old habits, customs, traditions and practices and thereby help to build a progressive attitude. Also Keregero (1981) reported that although demonstrations have been found to be among the strongest tools for convincing farmers, they were relatively less frequently used. Even where demonstrations were used, they seemed not to convince the farmers because extension workers failed to use necessary inputs such as seed, fertilizers, and pesticides due to the economic hardship they face. Failure to use these necessary inputs had made the whole demonstration exercise as a way of imparting farm information unsuccessful.

Table 11: Number of demonstration plots established by AEWs per village

Number of demonstrations	Public sector (n = 53)		Private sector (n = 19)		Total (n = 72)	
	n	%	N	%	N	%
0	1	1.9	1	5.3	2	2.7
1	21	39.6	5	26.3	26	36.1
2	11	20.8	2	10.5	13	18.1
>2	20	37.7	11	57.9	31	43.1
Total	**53**	**100**	**19**	**100**	**72**	**100**

4.2.1.3 Number of farmers served per month

Number of farmers served is important in evaluating the effectiveness of agricultural extension workers (Oladosu, 2006). At Handeni District, each AEW is expected to serve as many farmers as possible per month. In this study, 58.5% of AEWs from the public sector served between 26 and 50 farmers per month and was rated moderate performance while 34.0% served between 11 and 25 farmers per month, and only 5.6% and 1.9% served more than 50 farmers and between 0-10 farmers per month, respectively (Table 12). In the private sector, about 84.2% served between 26 and 50 farmers per month and was rated very high performance and only 10.5% and 5.3% served more than 50 farmers and between 0 and 10 farmers per month, respectively (Table 12). On average each AEW whether from public or private organizations served approximately 38 farmers per month.

High proportion of farmers served by AEWs under the private sector was possibly due to frequent follow ups and a good pay as one works while in the public sector, the moderate performance was possibly due to extra-curricular activities that slow down the whole service, for instance, the AEWs besides their duties in their work stations, they will have to operate in farmer's circumstances such as participating in farmers ceremonies and

events when they take place, since failure to mingle with farmers may halt their interaction and rapport with them (Tanga Regional Commissioner's Office, 2012).

Table 12: Number of farmers served per month by AEWs

Number of farmers	Public sector (n=53)		Private sector (n=19)		Total (n=72)	
	n	%	N	%	n	%
0-10	1	1.9	1	5.3	2	2.8
>11-25	18	34.0	0	0.0	18	25.0
>26-50	31	58.5	16	84.2	47	65.3
>50	3	5.6	2	10.5	5	6.9
Total	**53**	**100**	**19**	**100**	**72**	**100**

4.2.2 Job performance of AEWs

Three job performance indices namely: number of demonstration farms plots in the village, frequency of extension officers to visit farmers per week, and the number of the farmers served per month used to determine the job performance of AEWs. The results show that in the public sector, six (11.3%), 29 (54.7%) and 18 (34.0%) AEWs have low, medium and high job performance, respectively, whereas in the private sector one (5.3%), eight (42.1%) and ten (52.6%) AEWs have low, medium and high job performance, respectively (Table 13). The difference on job performance may exist because the sectors differ in the rewards they offer or the workers they attract. Private businesses may be better structured to link external motivators to individual productivity, but government work may be intrinsically more satisfying (Frank and Lewis, 2004). However, Chi-square test at 95% confidence intervals shows that the difference between the job performance of the public and private sectors was not significant ($\chi 2=2.214$, df=3, p= 0.331). The positive non significant correlation (r=0.172, p=0.148) can imply that improving condition of the agricultural extension officers, those working with private institutions would have higher job satisfaction than those of the public institutions.

Table 13: Distribution of AEWs according to AEWs categories and job performance

AEWs categories	Job performance							
	Low		Medium		High		Total	
	n	%	n	%	n	%	n	%
Public	6	11.3	29	54.7	18	34.0	53	73.6
Private	1	5.3	8	42.1	10	52.6	19	26.4
Total	**7**	**9.7**	**37**	**51.4**	**28**	**38.9**	**72**	**100**

$\chi 2$=2.214, df=3 ; p= 0.331 ; r=0.172, p=0.148

4.3 Personal Factors Affecting Job Performance of AEWs

4.3.1 Sex

The results show that in the public sector 6 (15.4%), 21 (53.8%), and 12 (30.8%) of male AEWs had low, medium, high job performance while 8 (57.1%) and 6 (42.9%) female AEWs had medium and high job performance, respectively (Table 14). In the private sector 1 (6.7%), 7 (46.7%) and 7 (46.7%) of male AEWs have low, medium, and high job performance while 1 (25%) and 3 (75%) of female AEWs had medium and high job performance, respectively (Table 14). The results also show that the proportion of males working either under the public or private sectors was higher than that of female AEWs, for instance 73.6% and 78.9% of AEWs were males while 26.4% and 21.1% were females in the public and private sectors, respectively (Table 14). Thus, these findings implied that sex had no significant influence on job performance of AEWs in the study area.

Table 14: Distribution of AEWs according to their sex

Sex	Job performance															
	Public sector								Private sector							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Male	6	15.4	21	53.8	12	30.8	39	73.6	1	6.7	7	46.7	7	46.7	15	78.9
Female	0	0.0	8	57.1	6	42.9	14	26.4	0	0.0	1	25.0	3	75.0	4	21.1
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100.0**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**

$\chi 2$=2.618, df=2; p= 0.270,r=0.19, p=0.170 $\chi 2$=1.100, df=2 ; p= 0.577; r=0.24, p=0.323

4.3.2 Marital status

The results also show that in the public sector 1 (4.3%), 17 (73.9%) and 5 (21.7%) of the single AEWs had low, medium, and high job performance, while 5 (16.7%), 12 (40.0%) and 13 (43.3%) of the married AEWs had low, medium and high job performance, respectively (Table 15). In contrast, in the private sector only 1 (100%) single AEW had a medium job performance and 1 (5.6%), 7 (38.9), and 10 (55.6%) of the married AEWs had low, medium and high job performance, respectively. None of the AEWs working under the public and / or private sectors at Handeni District were widowed or divorced. Statistically, the results seem to show that marital status had significant relationship with job performance for the AEWs working in the public sectors ($\chi 2$ = 6.269, df = 2; p = 0.044). The married AEWs are known to perform their jobs better than the single AEWs (Asadi *et al.,* 2008).

Table 15: Distribution of AEWs according to their marital status and job performance

	Job performance															
	Public sector								**Private sector**							
Marital Status	**Low**		**Medium**		**High**		**Total**		**Low**		**Medium**		**High**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Single	1	4.3	17	73.9	5	21.7	23	43.4	0	0.0	1	100.0	0	0.0	1	5.3
Married	5	16.7	12	40.0	13	43.3	30	56.6	1	5.6	7	38.9	10	55.6	18	94.7
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100.0**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**
$\chi 2$=6.269, df=2 ; p= 0.044 r=0.073,p=0606									$\chi 2$=1.451, df=2 ; p= 0.481 r=0.182, p=0.442							

Many of married AEWs (43.3%) had a high job performance while only 21.7.0% of the single AEWs working in the public institutions portrayed high job performance. This correlates with the findings of Ekumankama and Anyanwu (2007) that marital status was a strong predictor of job performance. Married AEWs can be traced easily at their

homes and the community tends to trust them more compared to the single AEWs who are thought to have fewer responsibilities. Contrary to AEWs working in the private sector, it was found that there was no significant different on job performance based on the marital status ($\chi2 = 1.451$, df = 2; p = 0.481).

4.3.3 Age of AEWs

The results show that in the public sector 3 (11.5%), 18 (69.2%) and 5 (19.2%) in the age category of 20-30 had low, medium and high job performance; 2 (22.2%), 3 (33.3%) and 4 (44.4%) in the age category of 31-40 had low, medium and high job performance; 3 (75.0%) and 1 (25.0%) in the age category of 41-50 had medium and high job performance, respectively (Table 16). None of the AEWs beyond the retirement age in the public sector (> 60) were still working. In the private sector, 0 (0%), 2 (66.7) and 1 (33.3%) in the age category of 20-30 had low, medium and high job performance while 1 (16.7%), 2 (33.3%) and 3 (50.0%) in the age category of 31-40 have low, medium and high job performance respectively.

The results also show that, 0 (0%), 2 (40.0%) and 3 (60.0%) 0 (0%) in the age category of 41-50 had low, medium and high job performance, respectively. One (100%) of the AEWs in the age category of 51-60 had high job performance and in the age category >60 job performance was low [0 (0%)], medium [2 (50%)] and high [2 (50%)]. Chi-square tests indicated that there was no significant difference ($\chi2 = 8.855$, df = 6; p = 0.182 and $\chi2 = 3.885$, df = 8; p = 0.866) between the age categories and job performance for AEWs working either under the public or private sectors, respectively. The results also show that there was no significant correlation between age and job performance (r = 0.124, p = 0.375 and r = 0.15, p = 0.516 for the AEWs working under the public and private sectors, respectively). However, in proportion, more than half (57.1% and 60%) of the

AEWs from the middle age groups in the public and private sectors had high job performance (Table 16). These results support the report by Onu *et al*. (2005), who showed that the most active age of AEWs working in the agricultural extension organizations is from the middle age group.

Table 16: Distribution of AEWs according to their age (in years)

	Job performance															
	Public sector								Private sector							
Age	**Low**		**Medium**		**High**		**Total**		**Low**		**Medium**		**High**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
20-30	3	11.5	18	69.2	5	19.2	26	49.1	0	0.0	2	66.7	1	33.3	3	15.8
31-40	1	7.1	5	35.7	8	57.1	14	26.4	1	16.7	2	33.3	2	50.0	6	31.6
41-50	2	22.2	3	33.3	4	44.4	9	17.0	0	0.0	2	40.0	3	60.0	5	26.3
51-60	0	0.0	3	75.0	1	25.0	4	7.5	0	0.0	0	0.0	1	100.0	1	5.3
>60	0	0	0	0	0	0	0	0	0	0.0	2	50.0	2	50.0	4	21.1
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**

$\chi 2$=8.855, df=6 ;p= 0.182; r=0.12, p=0.375 $\chi 2$=3.885, df=8; p= 0.866;r=0.15, p=0.516

4.3.4 Education level

The results also showed that in the public sector 2 (10%), 7 (35.0%) and 11 (55.0%) 0 (0%) of AEWs having Certificate training had low, medium and high job performance, while 1 (3.8%), 19 (73.1), 6 (23.1%) of the AEWs having Diploma training had low, medium and high job performance respectively (Table 16). The results also showed that for those with university qualifications, 3 (42.9%), 3 (42.9%) and 1 (14.3%) had low, medium and high job performance, respectively. In the private sector none of AEWs had Certificate qualifications, but there were 1 (9.1%), 5 (45.5%) and 5 (45.5%) with Diploma qualifications with low, medium and high job performance, respectively. The results also show that 0 (0%), 3 (37.5%) and 5 (62.5%) of AEWs with university qualifications have low, medium and high job performance respectively (Table 17).

These results generally showed that level of formal education has a significant influence on the job performance of the AEWs. It seems that more than a half (55.0%) of the

AEWs with Certificate qualifications had high job performance while only few (14.3%) of AEWs with university education had high job performance in the public sector. Statistically, there was highly significant correlation (r=-0.35, p=0.009) between level of education and job performance of AEWs working in the public sector. The negative correlation implies that AEWs with high education had low job performance compared with those with low level of education.

Ekumankama and Anyanwu (2007) and Ifenkwe (2012) showed that the level of formal education was a strong predictor of job performance. In this study, the results seemed to be contrary to the expectations. One explanation is that most AEWs with higher level of education take managerial positions which make them work more on coordinating the village level AEWs rather than visiting farmers and serving a considerable proportion of farmers monthly and establishing demonstration plots at village levels where most AEWs with certificate qualification work.

Table 17: Distribution of AEWs according to their level of education and job performance

	Job performance															
Public sector									**Private sector**							
Education	**Low**		**Medium**		**High**		**Total**		**Low**		**Medium**		**High**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Certificate	2	10.0	7	35.0	11	55.0	20	37.7	0	0	0	0	0	0	0	0
Diploma	1	3.8	19	73.1	6	23.1	26	49.1	1	9.1	5	45.5	5	45.5	11	57.9
University	3	42.9	3	42.9	1	14.3	7	13.2	0	0.0	3	37.5	5	62.5	8	42.1
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**
$\chi 2$ =14.978,df = 4 ; p = 0.005,r =-0.35, p = 0.009									$\chi 2$ = 1.053, df = 2 ; p = 0.591; r = 0.22, = 0.373							

Chi-square test showed that there was no significance difference on the education categories and job performance for the AEWs working in the private sector ($\chi 2$ = 1.053, df = 2; p = 0.591). This is confirmed by non linear relationship between education level

and job performance (r = 0.22, p = 0.373). These results could be due to the fact that there were no AEWs with Certificate qualification under the private sector.

4.3.5 Working experience

In assessing the work experience of AEWs in the public sector, the results showed that 4 (11.8%), 21 (61.8%) and 9 (26.5%) with working experience of less than 5 years had low, medium and high job performance respectively (Table 18). The results also showed that 0 (0%), 2 (33.3%) and 4 (66.7%) of the AEWs with working experience of 5-10 years had low, medium and high job performance while 2 (15.4%), 6 (46.2%) and 5 (38.5%) of those with work experience of more than 10 years had low, medium and high job performance, respectively. In the private sector 1 (25.0%), 2 (50%) and 1 (25%) of AEWs with working experience of less than 5 years had low, medium and high job performance, while 0 (0%), 2 (40%) and 3 (60%) of AEWs with working experience of 5-10 years, had low, medium and high job performance, respectively (Table 18). The results also showed that 0 (0%), 4 (40%) and 6 (60%) of AEWs with working experience of more than 10 years had low, medium, and high job performance, respectively.

Chi-square tests indicate that, despite the differences between working experience of AEWs and job performance there was no significant difference between working experience and the job performance for ($\chi2$ = 4.388, df = 4; p = 0.356 and $\chi2$ = 4.460, df = 4; p = 0.335) public and private sectors, respectively). The correlation confirmed non existence of the relationship between work experience and job performance of the AEWs (r = 0.09, p = 0.494 and r = 0.340, p = 0.142 for public and private institutions respectively). The positive non-significant correlation implies that working experience cannot be a good predictor of job performance of the AEWs.

Table 18: Distribution of AEWs according to working experience and job performance

Working experience (Years)	Job performance															
	Public								Private							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<5	4	11.8	21	61.8	9	26.5	34	64.2	1	25.0	2	50.0	1	25.0	4	21.1
5 – 10	0	0.0	2	33.3	4	66.7	6	11.3	0	0.0	2	40.0	3	60.0	5	26.3
> 10	2	15.4	6	46.2	5	38.5	13	24.5	0	0.0	4	40.0	6	60.0	10	52.6
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100.0**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**

$\chi 2$=4.388, df=4; p= 0.356,r=0.09, p=0.494 $\chi 2$=4.460, df=4; p= 0.335,r=0.340, p=0.142

These findings resemble those relating to educational factors influencing the job performance where work experience has no significant influence. This suggests that it is not the working experience but rather other factors such as motivation, self initiative to work with farmers which determines job performance.

4.3.6 Job rank

The results showed that in the public sector 1 (11.1%), 5 (55.6%) and 3 (33.3%) of the AEWs with a job rank of AFO had low, medium and high job performance, while 3 (7.9%), 22 (57.9%) and 13 (34.2%) of AEWs with a job rank of AGRO had low, medium and high job performance, respectively (Table 19). The results also showed that 2 (33.3%), 2 (33.3%) and 2 (33.3%) of AEWs with job rank of PAO had low, medium and high job performance, respectively. In the private sector the results showed 1 (5.3%), 8 (42.1%) and 0 (0%) of the AEWs with job rank of AFO had low, medium and high job performance, respectively. There were no AEWs with the job rank of AGRO or PAO in the private sector (Table 19). Nevertheless, chi-square test results showed that there was no significant relationship between job rank and the job performance of the AEWs working in the public sector ($\chi 2 = 3.358$, $r = -0.073$, $p = 0.597$). The negative correlation in the public sector implies that AEWs with low position had higher job performance than

those with higher job rank. This might be influenced by the fact that AEWs with high rank perform most of administration work rather than activities related to agricultural extension teaching (FAO, 2008).

The results also showed that job performance was 71.7%, 17.0% and 11.3% for the AGROs, AFOs and PAOs, respectively, in the public sector. These results demonstrate that the biggest proportion of work force of AEWs under the public sector at Handeni District were AGROs. As no AEWs from the private sector with the job rank higher than AFO, it is not surprising to see that these results support earlier report by Rivera and Alex (2004), who also indicated that in many developing countries the farmer's sources of agricultural information depend to a large extent on agricultural extension services offered free by the government AEWs.

Table 19: Distribution of AEWs according to their job rank and job performance

Job rank	Job performance															
	Public sector								Private sector							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
AFO[1]	1	11.1	5	55.6	3	33.3	9	17.0	1	5.3	8	42.1	0	0	19	100
AGRO[2]	3	7.9	22	57.9	13	34.2	38	71.7	-	-	-	-	-	-	-	-
PAO[3]	2	33.3	2	33.3	2	33.3	6	11.3	-	-	-	-	-	-	-	-
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100.0**	**1**	**5.3**	**8**	**42.1**	**0**	**0**	**19**	**100**

$\chi 2=3.358$, df=4; p= 0.472,r=-0.073, p=0.597.[1] AFO = Agricultural Field Officer, [2] AGRO = Agricultural Officer and [3]PAO = Principal Agricultural Officer. – = no officer

4.4 Relationship Between Level of Logistic Support and Job Performance of AEWs

In measuring the level of logistic support each AEW indicated through a checklist those items of logistic support which were available to him or her in the course of doing his or her day to day extension work. The results showed that only 30.2% of extension workers the public sector had government housing (Table 20).

In Handeni District, priority for housing is given to teachers and rural medical officers. In fact this argument supports FAO (2005) report which shows that AEWs are always the last to be considered if there is any government privilege or opportunity because the impact of their work usually takes a long time compared to other employees from other sectors such as education and health. The results also show that in the private sector only 52.6% of AEWs had houses and the remaining 47.4% of AEWs had not been provided with housing.

The results also showed that the level of other logistic support such as agricultural tools, agricultural equipments, literature, stationery, motocycles, bicycles and vehicles was low in both public and private organizations (Table 20). Low levels of logistic support affect the job performance of AEWs. This is similar to the study by Kimaro *et al*. (2010) who found that there was low logistic support such as inadequate residential and office accommodation to the AEWs. Since the level of logistic support assessed in this study was generally low with exception of inputs (81.1%) and support for demonstration plots (98.1%) in public sector, and furniture (84.2%) and inputs (57.9%) for the private sector, it is most likely that, the work enthusiasm and willingness to increase job performance of AEWs at Handeni District could be low.

Table 20: Items of Logistic support available to AEWs

Types of items	Public sector (n=53)		Private sector (n=19)		Total (n = 72)	
	Having		Having		Having	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Housing	16	30.2	10	52.6	26	36.1
Bicycle	14	26.4	3	15.8	17	23.6
Motorcycle	12	22.6	5	26.3	17	23.6
Vehicle	0	0	0	0	0	0
Office space	17	32.1	6	31.6	23	31.9
Furniture	8	15.1	16	84.2	24	33.3
Stationery	6	11.3	4	21.1	10	13.9
Literature	7	13.2	2	10.5	9	12.5
Inputs	43	81.1	11	57.9	54	75.0
Agric. tools	10	18.9	1	5.3	13	18.1
Agric. equipments	8	15.1	1	5.3	9	12.5
Demonstration plots	52	98.1	15	78.9	67	93.1

The results also showed that the smallest proportions of AEWs whether from private or public sectors possessed very few items of logistic support (Table 20). For instance, none of the AEWs at Handeni District had vehicles and also less than half of the AEWs whether from the public or private sectors had housing (36.1%), furniture (33.3%), office space (31.9%), motorcycle (23.6%) and other items (with exceptions of inputs and demonstration plots) of logistic support as shown in Table 20. Such results strongly portray that there is low level of logistic support available to the AEWs at Handeni District.

The results for Chi-square tests indicate that, despite the differences between working experience of AEWs and job performance there was significant influence ($\chi 2 = 17.325$, df = 6 ; p = 0.008 and $\chi 2 = 0.386$, df = 2 ; p = 0.825) of the level of logistic support and job performance for employee working in the public and private sectors, respectively (Table 21). The correlation (r = 0.142, p = 0.030) confirmed existence of the relationship between the level of logistic support and job performance of the public AEWs.

The positive significant correlation implies that AEWs receiving more logistic support have high job performance. These results strongly demonstrate that the level of logistic support is a predictor of job performance of the AEWs working in public institutions in Handeni District.

Table 21: Distribution of AEWs according to the level of logistic support

Items of logistic support (out of 12 items shown in Table 14)	Job performances															
	Public sector								Private sector							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
None	1	1.9	0	0.0	0	0.0	1	1.9	-	-	-	-	-	-	-	-
1 – 4	1	1.9	23	43.4	13	24.5	37	69.8	1	5.3	7	36.8	8	42.1	16	84.2
5- 8	2	3.7	5	9.4	4	7.5	11	20.8	1	5.3	1	5.3	1	5.3	3	15.8
9 - 12	0	0.0	1	1.9	3	5.7	4	7.5	-	-	-	-	-	-	-	-
Total	4	7.5	29	54.7	20	37.7	53	100	2	10.5	8	42.1	9	47.4	19	100
$\chi 2$ =17.325, df=6 ; p= 0.008	r = 0.142, p = 0.030		$\chi 2$ = 0.386, df=2 ; p = 0.825		r = 0.140, p = 0.567, - = absent											

4.5 Relationship Between the Volume of Work and Job Performance of AEWs

Three categorized volume of work index namely low (1 to 3), medium (4), high (5 to7), volume of work variables namely numbers of villages covered by extension workers and number of households served by extension workers per month in the village and their relationship to the job performance of AEWs were assessed. The results indicate that about 20.8% and 60.4% of AEWs with low and medium volume of work in the public sector had low and medium job performance compared to 5.3% and 84.2% of AEWs with low and medium volume in the private sector who had low and medium job performance, respectively (Table 22). The high proportion of AEWs with low volume of work in the public sector might be due to the feeling of high job security by some AEWs and lack of incentives for high levels of job performance and/or sanctions for poor job performance in the public sector. As a result many of them only carry out routine extension assignments, as defined by senior-level managers, not by the farmers being served (FAO, 2008).

Table 22: Distribution of AEWs according to the volume of work

Volume of work	Job performance															
	Public								Private							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Low	1	9.1	10	90.9	0	0.0	11	20.8	1	100	0	0.0	0	0.0	1	5.3
Medium	2	6.3	17	53.1	13	40.6	32	60.4	0	0.0	8	50.0	8	50.0	16	84.2
High	3	30.0	2	20.0	5	50.0	10	18.9	0	0.0	0	0.0	2	100	2	10.5
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**

$\chi 2$ =13.619, df =4 ; p = 0.009 r =0.431, p= 0.001 $\chi 2$ = 20.90, df = 4 ; p = 0.000 r = 0.567, p = 0.011

The results showed that 1 (19.1%) and 10 (90.9%) AEWs with low volume of work had low and medium job performance, respectively and none of them had high job performance in the public sector. The results also show that 2 (6.3%), 17 (53.1%) and 13

(40.6%) AEW with medium volume of work had low, medium and high job performance, while 3 (30%), 2 (20.0%) and 5 (50%) AEWs with high volume of work had low, medium and high job performance, respectively (Table 22). In the private sector, only one AEW with low volume of work was assessed and unfortunately he/she had low job performance, and 8 (50%) and 8 (50%) AEWs with medium volume of work had medium and high job performance, respectively, while 2 (100%) AEWs with high volume of work had high job performance.

Using chi-square results, it appeared that there was significant influence of volume of work of AEWs on the job performance ($\chi2$ =13.619, df = 4; p = 0.009 and $\chi2$ = 20.90, df = 4; p = 0.000 for the AEWs working on the public and private sectors, respectively). The correlation confirms association between volume of the work and job performance (r = 0.431, p = 0.001 and r = 0.567, p = 0.011 for AEWs working in the public and private sectors, respectively). The positive correlation indicates that AEWs who volunteer to perform more of their activities have high job performance but also based on the linear relationship observed, it is likely that the tendency to have high job performance increases with AEWs who tend to accomplish most of their duties. For instance in this study, the AEWs with high volume of work in the private sector also had high job performance and those with low volume of work seemed to have low job performance.

4.6 Relationship between Perception of Job Satisfaction and Job Performance of AEWs

In assessing items of perceptions of job satisfaction (Appendix 1), the results show that 34.0% of the AEWs from the public sector had positive perception on the job satisfaction compared with 21.1% in the private sector (Table 23). One explanation might be the fact that these extension agents are assured of their job security. Extension agents who are

satisfied positively with their job are more likely to work more hours on farmers' plots (Meagan *et al.,* 2005).

The relationship between perception of job satisfaction and job performance of AEWs working in the public sector was significant at one percent level ($\chi 2 = 19.119$, df = 4; p = 0.001). The frequency distribution and positive correlation (r = 0.431, p = 0.001) indicated that people with positive perception on the job satisfaction have high job performance but also based on the linear relationship the tendency to have high job performance increases with positive job satisfaction. For example, in the public sector none of AEWs with positive perception on job performance had low job performance. These results are similar to the study conducted by Khalil *et al*. (2008) who reported that there is a positive relationship between job satisfaction and extension workers' job performance.

The results also showed that most (73.7%) of the AEWs working in the private sector had a negative perception on their job satisfaction compared to those under the public sector (Table 23). These results support the study by Scott *et al.* (2006) who reported that in the public sector there was higher percentage of AEWs who were satisfied with their jobs than those who were not satisfied probably due to high job security in the public sector. In this study however the results showed no significant influence of job satisfaction on the job performance for the AEWs working with private institutions ($\chi 2 = 8.228$, df = 4; p = 0.084).

Table 23: Relationship between perception of job satisfaction and job performance of AEWs

Job satisfaction	Job performance															
	Public								Private							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Negative	6	35.3	7	41.2	4	23.5	17	32.1	0	0.0	5	35.7	9	64.3	14	73.7
Neutral	0	0.0	14	77.8	4	22.2	18	34.0	0	0.0	0	0.0	1	100	1	5.3
Positive	0	0.0	8	44.4	10	55.6	18	34.0	1	25.0	3	75.0	0	0.0	4	21.1
Total	**6**	**11.3**	**29**	**54.7**	**18**	**34.0**	**53**	**100**	**1**	**5.3**	**8**	**42.1**	**10**	**52.6**	**19**	**100**

$\chi 2 = 19.119$, df=4; p = 0.001 r = 0.431, p = 0.001 $\chi 2 = 8.228$, df = 4; p = 0.084 r = -0.568, p = 0.001

4.7 Relationship Between Job Knowledge and Job Performance of AEWs

The job knowledge was measured by assesing the technical recommendations applicable in the AEWs areas of work for maize and sorghum production since the crops were the main staple food for people in the study area. The responses were graded as 1= very knowledgeable, 2 = knowlegeble and 3 = not knowledgeable (Mwandry, 1992) and the total score ranging between 0 and 46 were categorized as very knowledgeable (more than 23), knowledgeable (23) and not knowledgeable (less than 23). Using the described procedure, the results indicated that about 64.2% of AEWs were very knowlegeable, 24.5% were knowlegeable and 11.3% were not knowlegeable in the public sector, while 52.6%, 31.6% and 15.8% in the private organization were very knowlegeable, knowlegeable and not knoledgeable, respectively (Table 24).

These results demonstrated that the job knowledge of AEWs in the public sector was higher than those in private sector. Also the proportion of AEWs who were not knowledgeable in the public sector was lower than those in the private sector. However, due to the significance of the assessed crops being main food crop in the study area, 11.3% and 15.8% of AEWs in the public and the private sectors, respectively were not knowlegeable (Table 24). This could be due to lack of in-sevice training as stated by

Mwandry (1992) and FAO (2008), who reported that lack of in-service training for AEWs weakens the knowledge on the job performance. Chi-square test showed that there was significant relationship ($\chi 2 = 16.924$, df = 4; $p = 0.002$ and $\chi 2 = 9.726$, df = 4; $p = 0.045$) between job knowledge and job performance of AEWs in the public and private sectors, respectively. The existence of a significant positive correlation ($r = 0.503$, $p = 0.000$ in the public and $r = -0.504$, $p = 0.028$) indicated that the higher the job knowledge the higher the job performance and vice versa.

Table 24: Relationship between job knowledge and job performance of AEWs

Knowledge	Job performances															
	Public sector								Private sector							
	Low		Medium		High		Total		Low		Medium		High		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Not knowledgeable	3	50.0	3	50.0	0	0.0	6	11.3	1	33.3	1	33.3	1	33.3	3	15.8
Knowledgeable	3	23.1	7	53.8	3	23.1	13	24.5	0	0.0	5	71.4	2	28.6	7	36.8
Very knowledgeable	0	0.0	19	55.9	15	44.1	34	64.2	0	0.0	2	22.2	7	77.8	9	47.4
Total	6	11.3	29	54.7	18	34.0	53	100	1	5.3	8	42.1	10	52.6	19	100

$\chi 2$ =16.924, df =4; p= 0.002 r = 0.503, p = 0.000 $\chi 2$ = 9.726, df = 4; p = 0.045 r = -0.504, p = 0.028

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Most public AEWs are based in the villages and had high frequencies of visiting farmers thus seemed to be closer to farmers in providing agricultural information on weekly and daily basis compared to private sector where the majority of AEWs visited farmers monthly and less on weekly and daily basis. However private sector staff seemed to have higher proportions of establishing demonstration plots possibly due to dwindling budgets in the public sector.

The study revealed the level of education was the only personal factor of AEWs which was related to job performance of the AEWs in the public sector. The AEWs with low level of education such as those with Certificate qualifications seemed to have higher job performance compared with those with higher level of education. In the private sector, no AEW had Certificate qualification, however those with high education level such as Diplomas and Degrees seemed to have high job performance

The study also revealed that there was lower level of logistic support to the AEWs in Handeni District. It appears that, the level of logistic support had significant influence on the job performance of AEWs working in the public sector. AEWs receiving high level of logistic support had higher job performance than those receiving low levels of logistic support.

This study also shows that there was higher proportion of AEWs with low volume of work in the public sector compared to those working in the private sector. The study

showed that the volume of work had a significant influence of AEWs on job performance. The higher the volume of work the higher the job performance, for instance in this study the AEWs with high volume of work in the private sector also had high job performance and those with low volume of work seemed to have low job performance.

This study also indicates that most of the AEWs working in the private sector had negative perception on the job satisfaction. In the public sector there was significant relationship between the perceptions of AEWs and job performance. The AEWs with positive perception on the job satisfaction had higher job performance compared with those with a negative perception.

The study also revealed that the AEWs working in the public sector were more knowledgeable than those working in the private sector. The AEWs who are more knowledgeable had higher job performance.

5.2 Recommendations

Based on the conclusions above, it is recommended as follows:

(i) There is need for the government to provide more logistic support such as housing, inputs and funds to establish demonstration plots to newly employed AEWs in the public sector to improve the whole process of knowledge transfer to farmers and thus increse the job perfomance since they are closer to farmers than those from the private sector.

(ii) There is need for the government to provide more and direct support to the AEWs who are at the village level because most of them had high job performance regardless of their qualification. In fact, it is not the education level that will

determine the level of high job perfomance at the village level but rather support such inputs to establsh demonstration plots, transport to facilitate and allow the AEW at village levels to reach more farmers and serve a high proportion of farmers at a time.

(iii) The private organizations should employ competent AEWs but also facilitate them to get on the job training to empower them with new knowledge and skills

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APPENDICES

Appendix 1: Perception of Agricultural extension workers on job performance

Item of Perception	Number of Agricultural extension workers (%)									
	Public organization (n= 53)					Private organization (n = 19)				
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
I feel satisfied with the work I do	3.8	11.3	0	77.3	7.5	5.3	5.3	0	84.2	5.2
My supervisor visits me frequently	13.2	17	3.8	58.5	7.5	0	15.8	0	84.2	0
My salary is paid without delay	0	24.5	3.8	64.2	7.5	0	10.2	10.5	68.4	10.5
I would like to change to another job	5.7	54.7	3.8	34	1.9	0	68.4	5.3	26.3	0
My salary is enough	39.6	47.2	3.8	5.7	3.8	47.4	31.6	5.3	15.8	0
I have total confidence with farmers	7.5	11.3	5.7	62.3	13.2	5.3	10.5	5.3	73.7	5.3
No impact of my job in this village	9.4	39.6	7.5	39.6	3.8	5.3	52.6	5.3	31.6	5.3
My supervisor ignored me	0	5.7	5.7	20.8	11.3	0	68.4	0	21.1	10.5
Promotions are limited	5.7	49.1	0	30.2	15.1	5.3	73.7	0	15.8	5.3
My job is a source of frustration	9.4	49.1	5.7	32.1	3.8	5.3	68.4	0	26.3	0
My work allows me to contribute ideas	3.8	15.1	5.7	49.1	20.8	0	21.1	5.3	10.5	10.5
My salary is lower compared with others	1.9	39.6	3.8	41.5	13.2	0	68.4	0	31.6	0

Appendix 2: Questionnaire for Agriculture Extension Workers

Introduction

The following questions aim at collecting information about factors affecting job performance of agricultural extension workers. Such information may be useful in strengthening the agricultural extension system in Handeni district. Your view expressed in this form will be treated as" CONFIDENTIAL"

2. Background information

Date……...

(a)What is your name?.....

(b)What is name of this village?.....

(c)How old are you?.....

(d) Sex: please indicate by a tick (v) 1…….(male) , 2…….(female)

(e) Marital status: please indicate by a tick (v) 1….(single) , 2….(married), 3….(divorced)

(f) Please indicate by a tick (v) the level of your formal education.

(i) Standard four…… ( )

(ii) Standard seven……. ( )

(iii) Form four…….…… ( )

(iv) Form six……..……. ( )

(v) University…… .( )

(g) Please indicate by a tick (v) your area of specialization

(i) Crops ……. ( )

(ii) Livestock…….…… ( )

(iii) Nutrition……... ( )

(iv) Land use…… ( )

(h) How long have you worked as agricultural extension worker?..... (Years)

(i) How many village do you serve?.....

(j) How many families are in each village?

	Name of village	Numbe of households
1		
2		
3		
4		
5		
6		
7		
8		

(k) How long have you worked in this village/ward/district as an agricultural extension worker?.....(years)

(l) Name of organization (1) Public [ ], (2) Private [ ] (specify)……

3. Logistic support

Please indicate by 'Y' for yes and 'N' for no for those types of logistic support mentioned

	Item	Y/N	Degree of satisfaction			
			Very unsatisfied	unsatisfied	Satisfied	Very satisfied
i	Housing					
ii	Bicycle					
iii	Motorbike					
iv	Vehicle					
v	Office space					
vi	Adequate office furniture					
vii	Stationary					
viii	Literature					
ix	inputs (maize /sorghum seeds/pesticides					
x	Equipments (knapsack sprayers, tapemeasures)					
xi	Tools (hand hoes, bush knives, rakes and watering canes)					
xii	Demonstrationplots					

4 **Job performances**

(a) How many demonstration plots are in your village/ward? (1) 0 [ ], (2) 1 [ ], (3) 2 [ ], (4) >2 [ ], (5) other [ ] (specify)……

(b) How many times do you visit farmers (1) once per day [ ], (2) once per week [ ], (3) once per month [ ], (4) once per year [ ], (5) other [ ] (specify)……

(c) Please put a tick (v) where appropriate. What is the proportion of farmers do you usually serve per month in your village/ward? (1) 0-10% [ ], (2) >10-25% [ ], (3) >25-50% [ ], (4) > 50% [ ]

5. Knowledge of Technical Recommendations

What are the technical recommendations for maize and sorghum crops respectively in this area?

A. Maize crop

(a) Time of land preparation……..……

(b) Seed

(i)Types of seed……

(ii)Seed rate per hectare……

(iii)Seed rate per hole……

(c)Spacing

(i)Spacing for pure stand……..

(ii)Spacing for mixed (intercropping)…….

d) Planting

i) Planting dates

e) Fertilizer application

i) Types of fertilizers……..

ii)Time of application for basal fertilizers …….

iii)Time for application for top dressing fertilizers……..

iv) Application rate of basal fertilizers per hectare…….

v) Application rate of top dressing fertilizers per hectare…….

f) Weeding

i)Time of weeding……

ii)Number of weeding…….

g)Thinning

i) Time of thinning…….

ii) Plants(s) per hole after thinning…….

h) Insecticides Application on Plants

i)Types of insecticides……

ii)Time of application…….

iii) Against which insect(s)…….

iv)Application rate per hectare……

v)Number of applications……

B. Sorghum Crop

a) Time of land preparation……

b) Seed

i) Types of seed……

ii) Seed rate per hectare…….

iii) Seed rate per hole……

c) Spacing

i) Spacing for pure stand…….

ii) Spacing for mixed (intercropping)……..

d) Planting

i) Planting dates……

e) Fertilizer Application

i)Types of fertilizers……

ii) Time of application for basal fertilizers…….

iii)Time of application for top dressing fertilizers……...

iv) Application rate of basal fertilizers per hectare……..

v)Application rate of top dressing fertilizers per hectare…….

f) Weeding

i) Time of weeding……

ii) Number of weeding…….

g) Thinning

i)Time of thinning…….

ii) Plant(s) per hole after thinning…….

h) Insecticides Application on plants…….

i)Types of insecticides……..

ii)Time of application……

iii)Against which insect(s)…….

iv Application rate per hectare…….

v) Number of application……..

i) Insecticides during storage

i)Types of insecticides during storage……..

ii) Time of application……..

iii) Application rate per bag……

iv) Against which insect(s)……

6 Training level

(a) Please indicate by tick (v) the level of professional you attained.

i) Certificate…….( )

ii) Diploma……( )

iii)Degree…….. ( )

(b) What rank do you currently have? ……..

(c) Have you ever been promoted? Y/N……(put 'Y' for yes and 'N' for no).

If yes when were you promoted to your current rank?.....(years ago)

(d) Please indicate the number, duration, place and content of each in-service training programme you have attended during the last 2 calendar years, that is 2010 and 2011 respectively.

i) 2010 calendar year

Name of course	Duration of course	Dates	place
……	…….	…….	……
…….	…….	……..	…….
……..	…….	…….	…….

ii) 2011 calendar year

Name of course/	Duration of course	Dates	place
……	…….	…….	……
…….	…….	……..	…….
……..	…….	…….	…….

7. Job satisfaction

The purpose of these statements is to help us to understand how you feel about some aspects of your job, what things you are satisfied with and what thing you are not satisfied with. Please tick (v) the responses below that best describe your feelings about each of the statement.

No.	Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	I feel satisfied with the work I do					
2	My District extension officer frequently visit me and guides me as what to do					
4	I am always paid my salary without delay					
5	If possible I would like to change to another job					
6	My salary is enough to support me and my family					
7	I have the total confidence of the farmers in this village					
8	There is no impact of my work in this village because of factors beyond my control					
9	My immediate supervisors have ignored me and left me to operate on my own					
10	Opportunities for promotion are limited in this organization					
11	I feel that my job is a source frustration					
12	My job allows me to contribute ideas and suggestions to various committees at village and ward levels					
13	Compared to others with similar qualifications my salary is low					
14	My chances for promotion are not affected by how well I perform my job					
15	The farmers and those I work with respect my job					
16	I have nothing to extend to farmers in terms of new technological packages					
17	I feel proud to be working in this organization					
18	I have not been regularly informed of research recommendations on matters related to my field of duties for example the crop I work on(maize/ sorghum)					
19	Most farmers practice what I recommend					
20	I feel that I am doing too much work					
21	I am always paid my night duty allowances when I travel					