INDICATORS OF QUALITY MANAGEMENT PRACTICES IN
STATE CORPORATIONS WITHIN THE AGRICULTURE SECTOR
IN KENYA

(Case of selected ISO certified firms in the Agriculture sector)

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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This research project has been submitted for examination with my approval as the head of the Department

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Sign Date

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DEDICATION

I wish to dedicate this research project to my family. What I am today, and the small steps that I have taken in my life, it is all because of them. They have been a profound influence towards my intellectual, professional and personal development. My father Mutunga, my mother Agnes, my sisters Ann, Tabitha and Charity, brothers Jeremiah and Nzioka. My mentors Mr. & Mrs. Mugachia, Mr. & Mrs. Kirui who have enriched me at every step of my life. They inspired me to strive for excellence. Whereas I struggled to maintain balance at every step of my life, their unconditional love and support made me handle life’s challenges with a greater resilience. Thank you for being there with me. Special credit goes to my dad Mutunga, for his visionary thinking and for serving as an inspiration at every step of my life.

Thank you for all your love, support and guidance
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Finally I wish to thank all those who either directly or indirectly helped me in the accomplishment of this task.
ABSTRACT

The agriculture sector is getting competitive every day. In order to be successful Quality Management (QM) practices ought to be the integral part of any organization’s strategic management. The agriculture sector contributes to 26% of the gross domestic product and supports industries while ensuring food security in the country. ISO certification in state Corporations came as a requirement through the office of the prime minister in ensuring the improved performance and service delivery to Kenyan citizens. The purpose of this study was to establish how Total Quality Management (TQM) practices are employed as key indicators of quality management. The selected parastatals are ISO 9001; 2008 certified and are head quartered in Nairobi. The study was guided by the following objectives: To investigate indicators of quality management practices in the selected state corporations, to determine the extent to which top management commitment indicates quality management practices in selected state corporations in Kenya, to establish extend of continuous improvement of products and services to quality management practices in selected state corporations in Kenya and to find out the level of customer orientation to quality management practices in selected state corporations in Kenya among other factors. A descriptive research design was utilized in this study. The sample comprised four state corporations within the agriculture sector representing the four basic functions of the ministry of agriculture. Human resource staff, more so those dealing with quality management system from the selected corporations constituted the target population. Stratified random sampling was used to sample 58 respondents of the selected state corporations. A questionnaire was used to collect data through drop and pick method. Data was analyzed using descriptive statistical techniques. From the findings one can conclude that for successful TQM implementation an organization require top management commitment, customer orientation, continuous improvement and adoption of process approach. It is imperative that all corporations within the Agricultural Sector embrace quality management practices if Agriculture is to continue to be the backbone of our economy. Agricultural Corporations need to ensure total visible top management commitment to quality, embracing customer orientation in quality issues, adoption of process approach in implementation of quality practices and ensuring existence and maintenance of continuous improvement practices for products and services. These have been identified as key indicators of quality management in corporations in the Agriculture sector as evidenced in the findings of this study. The findings of the study indicate that there are a number of issues to be addressed and suggestions for further research. Managers in Agricultural Parastatals should improve their communication with their staff bringing enthusiasm in implementation of QMS as well as continuous training on quality issues. Further area of research among others to include in the population and samples other organizations within the East African Community.
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LIST OF ABREVIATIONS AND ACRONYMS

ADC - Agricultural Development Corporation
AFC - Agricultural Finance Corporation
ASK - Agriculture Society of Kenya
ASPS - The Agricultural Sector Programme Support
CBK - Coffee Boards of Kenya
CDA - Cotton Development Authority
CRF - Coffee Research Foundation
CSC - Chemelil Sugar Company
HCDA - Horticultural Crops Development Authority
ISO - International standardization Organization
KAPP - the Kenya Agricultural Productivity programme
KARI - Kenya Agricultural Research Institute
KCDA - Kenya Coconut Development Authority
KEBS - Kenya Bureau of Standards
KEPHIS - Kenya Plant Health Inspectorate Service
KSB - Kenya Sugar Board
KSC - Kenya Seed Company
KSRF - Kenya Sugar Research Foundation
MOA - Ministry of Agriculture
NCPB - National Cereals and Produce Board
NSC - Nzoia Sugar Company
NTZDC - Nyayo Tea Zones Development Corporation
PBK - Pyrethrum Board of Kenya
PCPB - Pest Control Products Board
QC - Quality Control
QM - Quality Management
QMS - Quality management system
SNSC - South Nyanza Sugar Company Ltd
TBK - Tea Board of Kenya
TQC - Total Quality Control
TQM - Total Quality Management
TRF - Tea Research Foundation
DEFINITION OF OPERATIONAL TERMS

**Quality;** Innate excellence both absolute and universally recognizable, a mark of uncompromising standards and high achievement. (Garvin, 1988, p. 39)

**Quality management system;** is a management technique used to communicate to employees what is required to produce the desired quality of products and services and to influence employee actions to complete tasks according to the quality specifications. It establishes vision to employees, builds motivation, sets standards and goals to employees. Additionally fights resistance to change in organisations and helps direct the corporate culture.

**Quality management practices;** these are set of approaches embodied in Total Quality Management concept of quality management described first by the quality gurus (Hackman and Wageman, 1995).

**Total Quality Management;** Total quality management (TQM) is an organization-wide process-oriented philosophy that requires changes not only in production, but also in decision-making processes, employee development, and employee participation and involvement (Abdullah et al., 2009; Mehra et al., 2001).

**Parastatals/ State Corporations;** A government-owned corporation, state-owned company, state-owned entity, state enterprise, publicly owned corporation, government business enterprise, commercial government agency, public sector undertaking or parastatal is a legal entity created by a government to undertake commercial activities on behalf of an owner government. For the purpose of this study these two will be used interchangeably.
CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The background of this study sought to explore background to quality management practices and background to the study setting the ministry of agriculture and its parastatals. The chapter has various sections including background to the study, statement of the problem and research objectives. In addition to this it has sections on research questions, significance of the study and finally the scope of the study.

1.1.1 Background to Quality management practices

Quality management practices have been investigated extensively by various researchers (Kaynak, 2003). Although a plethora of practices have been described, similarities among practices can be discerned. The distinct generic practices proposed in quality management literature are: top management commitment and support, organization for quality, employee training, employee participation, supplier quality management, customer focus, continuous support, and improvement of quality system, information and analysis, and use of statistical quality techniques (Kaynak, 2003). The above generic practices are further grouped into three main categories according to the classification of Flynn et al. (1995a), namely: management practice: issued from the top management; infrastructure practices: intended to support core practices; and core practices: based on tools and techniques specifically related to quality.

The implementation of quality management techniques enables organizations to improve internal efficiencies, which is considered as a prerequisite to become competitive in global marketplace (Lambert and Ouedraogo, (2008), Stading and Vokurka, (2003). Quality management practices have been built on the concept of total quality management (TQM) which has become a world-wide topic in the twenty-first century guiding quality management practices in organisations. Having its roots partly in the USA and partly in Japan, it was primarily adopted by some Japanese companies in the decades immediately after World War II. With the greater successes of Japanese companies during the 1980s,
companies all over the world found that it was necessary to have good quality management practices in order to stay competitive (Lagrosen, 2002).

The last decade has witnessed a considerable research surveying manufacturing quality practices in several countries or regions. Documenting quality practices and total quality management (TQM) implementation in the USA (Roethlein et al., 2002), India (Motwani et al.), China (Lau et al., 2004), Australia (Terziovski et al., 1999), Singapore (Yong and Wilkinson, 2001), Malaysia (Eng and Yusof, 2003); Scotland (Masson and Raeside, 1999), Germany (Zink and Schildknecht, 1990), Turkey (Ozgur et al., 2002), and Spain (Martinez-Lorente et al., 1998), represents some efforts in this direction. Other studies examined differences between organizations and nations in terms of specific quality management practices. In particular, quality practices in several countries were benchmarked against those of the USA. Similarly, Zhao et al. (1995) benchmarked quality practices in India, China and Mexico and Raghunathan et al. (1997) compared the quality management practices in the USA, India, and China.

In Africa most countries have adopted quality management practices in both manufacturing and service sectors but differences occur in the manner in which TQM is applied. Sousa-Poza and colleagues (Souza-Poza et al., 2000) assess the application of TQM in USA, Switzerland and South Africa to investigate the relationship between national culture and the implementation of TQM. Their results show that in each country, several distinct relationships between the dimensions of TQM implementation and national culture exist. They therefore imply that the application of TQM should take into account different characteristics of national cultures.

In Kenya quality management practices have been widely adopted in both the private and public sector by the official certifying body Kenya bureau of standards among other international certifying bodies. Kenya Bureau of Standards (KEBS) was established in July 1974 to providing Standardization and Conformity Assessment services that consistently meet its customers’ requirements. KEBS provides the necessary resources towards the effective implementation and continual improvement of the Quality Management System that complies with ISO 9001:2008. (Kebs 2008). The government has been in the fore front in promoting adoption of quality management practices both in
the private and public sector. In the public sector it is mandatory for all public institutions to adopt quality management practices and participate in performance contracting. This will ensure that the government gives Kenyan citizens quality basic services. This was done to improve efficiencies in these organizations. In the private sector, the government is the largest consumer of private company commodities and therefore they should adopt quality management practices as a requirement in winning supplies to the government. These efforts are geared to ensuring quality service to Kenyan citizens.

Quality management practices as a management approach of an organization is centered on quality, based on the participation of all its members and aiming at long term success. This is achieved through customer satisfaction and benefits to all members of the organization and to society. In other words, Total Quality Management which guides quality management practices is a philosophy for managing an organization in a way, which enables it to meet stakeholders’ needs and expectations efficiently and effectively without compromising ethical values (ISO 9001:2008). Quality Management practices have been widely implemented throughout the world. Many firms have arrived at the conclusion that effective quality management practices implementation can improve their competitive abilities and provide strategic advantages in the marketplace (Anderson, Fornell, & Lehmann, 1994).

Some of the common differentiators between success and failure of quality management practices include commitment, knowledge and expertise to guide improvement. Longenecker and Scazzero (1993) indicated that achieving high product quality and pursuing successful TQM implementation are highly dependent on top management support. The ISO 9000 family of standards represents an international consensus on good quality management practices. It consists of standards and guidelines relating to quality management systems and related supporting standards. ISO 9001:2008 is the standard that provides a set of standardized requirements for a quality management system, regardless of what the user organization does, its size, or whether it is in the private, or public sector. It is the only standard in the family against which organizations can be certified – although certification is not a compulsory requirement of the standard. (ISO standard 2007) .TQM provides a framework for implementing effective quality and productivity initiatives that
can increase the profitability and competitiveness of organizations (Deming, 1992). Thus this study therefore seeks to investigate indicators of quality management practices including top management commitment among other factors.

1.1.2 Ministry of Agriculture and its Parastatals

The ministry of agriculture is a government institution charged with the promotion of sustainable and competitive agriculture through the provision of support services and basic inputs. The agriculture sector comprises of six subsectors, industrial crops, food crops, horticulture, livestock fisheries and forestry. It employs such factors of production as land water and farmer institutions. In Kenya the growth of the national economy is highly correlated to growth and development in agriculture thus its importance. The ministry of agriculture and its parastatals concerns its self with the food subsector. Features of agricultural services include agricultural research, agricultural extension training and information services, marketing, agricultural credit and inputs, pest and disease control and statutory boards and development authorities. For the government to deliver services to the Kenyan farmers various parastatals have been mandated to perform specific services.

There are 24 parastatals in the ministry of agriculture namely; Agricultural Finance Corporation (AFC), Pest Control Products Board (PCPB), Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Service (KEPHIS), Cotton Development Authority (CDA), Agriculture Society of Kenya (ASK), Kenya Sugar Research Foundation (KSRF), Pyrethrum Board of Kenya (PBK), Kenya Seed Company (KSC), National Cereals and Produce Board (NCPB), Kenya Sugar Board (KSB), Coffee Research Foundation (CRF), Nyayo Tea Zones Development Corporation (NTZDC), Agricultural Development Corporation (ADC), The Kenya Agricultural Productivity programme (KAPP), The Agricultural Sector Programme Support (ASPS), Horticultural Crops Development Authority (HCDA), Tea Board of Kenya (TBK), Tea Research Foundation (TRF), South Nyanza Sugar Company Ltd (SNSC), Nzoia Sugar Company (NSC), Chemelil Sugar Company (CSC), Kenya Coconut Development Authority (KCDA). Kenya’s economy is largely agriculture based. The sector directly supports about 80% of the population and contributes 26% of the GDP, and 60% of the export earnings.
there is need to enhance factors affecting quality management practices within the sector who in the recent past largely adopted quality management systems.

Agriculture Sector in Kenya has to achieve the quality standards in order to be competitive in future open markets (while aiming to enter in the EU countries). A large number of organizations both large and small in the Agriculture sector suffer for lack of information in the field of quality management and they need theoretical and practical training in this field (MOA, 2004). Based on the fact that agriculture and food industry sector is the largest contributor in the Kenyan GDP, 26% of GDP in 2008 (MOA 2009), governmental policies in Kenya aim further development of this sector.

Following a directive by the president in 2010 as he unveiled the public sector’s performance contract results that all ministries and public institutions must be ISO certified by 2012 accelerated a drive that is set to fundamentally alter the nation’s corporate landscape as well as its public sector performance Republic of Kenya 2008-2012 Statehouse strategic plan (Revised) . Since the first moves for ISO certification in the public sector in 2005, 127 private and public institutions have achieved certification (KEBS 2012 certified firms on ISO 9001:2008 Quality Management systems). There are 24 state corporations in the ministry of agriculture and out of these 13 are certified. (KEBS 2012.) . The Kenya Bureau of Standards Certification Body (KEBS) is one of the leading Certification bodies in the East and Central African Region. It is an organization established by an Act of parliament, The Standards Act, Cap 496 of the laws of Kenya in 1974. It started its certification operations in August 2002 and since has been in the forefront in certification on different quality management systems in Kenya as well as ensuring continuous improvement of QMS in certified organizations through periodical audits and re-certification.

Quality management practises enshrined in the implementation of ISO 9001: 2008 is an enhancement to the traditional way of doing business. It is a proven technique to guarantee survival in world class competition. Only by changing the actions of management will the culture and actions of an entire organization be transformed. If quality management practices are well adopted, as opposed to complying with a requirement in the ministry of agriculture parastatals, then the functions of the government through these institutions will
be effectively undertaken ensuring food security and economic growth in Kenya.

Parastatals in the Agriculture sector are tasked with the responsibility of offering quality basic inputs and services Kenyan citizens. This is part of efforts by the government to ensure food security in the country. State Corporation’s successful implementation of ISO 9001:2008 quality management system will be depended on certain factors. Research has been done on quality management practices in service industry in Kenya as in higher education a case of University of Nairobi and TQM practices in Kenya Secondary schools (Ngware 2006) and Effects of Total Quality Management implementation on business performance in service institutions, case of Kenya Wildlife Service’s -International Journal of Research Studies in Management 2012 April. No empirical research has been conducted dealing with TQM practices and their effects on overall business performance in Kenya Agricultural service sector. It is against this background that the purpose of this study will investigate indicators of quality management practices parastatals within in the agriculture sector and help in identifying problem areas and possible remedies.

1.2 Statement of Problem

It is important for quality management system to be implemented by firms in the Agriculture sector to meet their quality management standards in order to enhance customer satisfaction and attain food sufficiency. Parastatals in the ministry of agriculture play a very central and indispensable role in the effective delivery of basic inputs and key services to the functioning of the government and overall running of the country. In 2004 the government introduced result based management (RBM) to ensure transformation of the public sector to be more focused and responsive to the needs of those it serves (Kenya Government session paper, 2006). The adoption of RBM required a paradigm shift in government and called for transformation of public service from a passive, inward looking bureaucracy to one which is proactive, outward looking and result oriented; one that seeks customer satisfaction and value for money. The aspect of performance contracting followed in public institutions to instil the culture of results orientation. Counting the gains achieved, these are the same values and ideals underpinning the ISO quality management system.
Trade is a crucial driver of growth (Stern, 2003). For Kenya to achieve the double-digit economic growth envisaged in Vision 2030, Kenya must be able to respond to local and global market demands. Kenya, just like many African countries, is confronted by challenges in improving its capacity to meet production and quality standards which are Obligatory to access foreign markets, especially the European Union which is one of Kenya's biggest trading partners. Cognizant of the importance of system certification in growth and development (especially ISO 9001:2008), the Government of Kenya issued a directive (in 2010) that all public agencies should begin the process of ISO 9001:2008 certification and ensure that they are fully certified by 2012. Kenya’s Prime Minister noted that the government of Kenya sees the process of ISO certification to Quality Management Systems as central to enhancing the performance of public servants and restoring public confidence in the civil service. He further noted that standards are a useful intervention for tackling shortcomings in the public service delivery that have, in the past, constrained Kenya’s quest for development. He compared ISO9001:2008 certification to a mustard seed that will mushroom into a culture of quality and efficiency in government business (Prime ministers speech during Kenya’s Ministry of State for Planning, National Development and Vision 2030 ISO 9001: 2008 certification. This poses a dilemma are public institutions simply complying or practicing to the requirements of the quality management system acquired in their institutions.

Quality management practices in the Agricultural sector still needs improvements. According to ISO 9001:2008 the standard that provides a set of standardized requirements for a quality management system. Kenya, ministry of agriculture and its parastatals has to surmount challenge of quality management in order to achieve sustainable double-digit growth in its economy as envisaged in the economic blueprint (Kenya Vision, 2030). Some key indicators of quality management practices include; Customer focus, Involvement of people, Process approach to Management Systems approach to management Continual improvement Factual approach to decision making, Mutual beneficial supplier among others. It is by this background that the study seeks to examine some of these factors.
1.3: Objectives of the Study

The main objective of this study was to investigate indicators of quality management practices in selected Agricultural state Corporations in Kenya.

1.3.1 Specific Objectives

i. To determine the extent to which top management commitment indicates quality management practices.

ii. To establish effects of continuous improvement of products and services to quality management.

iii. To find out the relationship between customer orientation and quality management practices.

iv. To establish the extend of the process approach to total quality management implementation.

1.4: Research Questions

The study also sought information to answer the following questions;

i. To what extend does top management commitment indicate quality management practices in selected agricultural state corporations in Kenya?

ii. How does continuous improvement of services and products indicate quality management practices in selected agricultural state corporations in Kenya?

iii. What is the relationship between customer orientation and quality management practices of selected agricultural state corporations in Kenya?

iv. To what extend does process approach to TQM implementation indicate quality management practices in selected agricultural state corporations in Kenya?
1.5: Significance of the Study

This study will benefit selected state corporations in the ministry of agriculture top management who will use it to understand issues in the implementation of ISO 9001:2008 quality management system. The study will also benefit the other non-certified state corporations in the Ministry of Agriculture who will use it as lessons for their implementation when certified. State Corporation stakeholders will also use the finding to understand factors influencing quality management practices. The staff in charge of quality management and all staff in general in the selected parastatals will use it to understand their role in quality management and to come up with strategies for better the implementation of the quality management system. Interaction with the staff during the study will help them value importance of their involvement to quality management practices which is a key pillar to effective quality management.

1.6: Scope of the Study

The scope of the study was the 24 parastatals in the ministry of agriculture in Kenya but main focus was the 4 selected ISO certified firms. It targeted human resource and staff dealing with quality management at different levels in the selected parastatals.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction to Literature Review

The existing literature globally has shown that research has been done on TQM practices in the manufacturing sector. Having its roots partly in the USA and partly in Japan, it was primarily adopted by some Japanese companies in the decades immediately after World War II. With the greater successes of Japanese companies during the 1980s, companies all over the world found that it was necessary to have good quality management practices in order to stay competitive (Lagrosen, 2002). Total quality management is an enhancement to the traditional way of doing business. It is a proven technique to guarantee survival in world class competition. Only by changing the actions of management will the culture and actions of an entire organization be transformed.

The existing literature has showed that research has been done on TQM practices in service sector; Kenya higher education, Factors Affecting TQM Processes in State Corporation for Customer Satisfaction, and TQM practices in Kenyan secondary schools. Little or no empirical research has been conducted dealing with TQM practices and their effects on overall business performance in Agricultural firms. Kenya’s economy is largely agriculture based. The sector directly supports about 80% of the population and contributes 26% of the GDP, and 60% of the export earnings there is need to enhance factors affecting quality management practices within the sector who in the recent past largely adopted quality management systems.

Agriculture Sector in Kenya has to achieve the quality standards in order to be competitive in future open markets (while aiming to enter in the EU countries). A large number of organizations both large and small in the Agriculture sector suffer for lack of information in the field of quality management and they need theoretical and practical training in this field (MOA, 2004). Based on the fact that agriculture and food industry sector is the largest contributor in the Kenyan GDP, 26% of GDP in 2008 (MOA 2009), governmental policies in Kenya aim further development of this sector.
2.2 Past Studies Done In the Area / Theoretical and Empirical Reviews

2.2.1 Quality Management Practices

A major boost to the growth of TQM is the promotion of quality award models in many countries and the success of quality programs such as Six Sigma, quality function deployment, and quality circle. Of the widely accepted international quality initiatives are ISO 9000 certification standards, ISO 14000 certification standards, Six Sigma, and the Malcolm Baldrige National Quality Award (MBNQA). This study focuses on the ISO 9000 certification standards because it has had the most outstanding impact and its award criteria have been widely accepted by Kenyan industries and public sector organizations. In addition, ISO 9000 has been adopted widely both by manufacturing, education and service sectors in Kenya (Kenya Bureau of Standards.2008).

Quality management practices are enshrined in an international standard which are drafted within rules given by ISO directives which is a worldwide federation of national standard bodies (ISO member bodies). The principles are derived from the collective experience and knowledge of the international experts who participate in ISO Technical Committee ISO/TC 176, *Quality Management and quality assurance*, which is responsible for developing and maintaining the ISO 9000 standards. Quality management practices addresses systemic change as they seek an organization to establish, document, implement and maintain quality management system and continually improve its effectiveness in accordance with the requirements of the international standard (ISO 9001; 2008).

Quality authorities like Joseph Juran and Edward Deming have put several approaches to improve company performance. These approaches are embodied in a set of quality management practices, known as TQM. Total quality management became popular in the 1980s and was widely adopted both in manufacturing and service sector TQM is a consideration of the views of the quality groups recognizing that poor quality is expensive in terms of cash and market share and that good quality provides a tool for competition. TQM first took its roots in improving quality of physical products, however, subsequent developments emphasized on organizational transformations-especially in bringing about a cultural change, in improving employee morale and in facilitating an empowering
working climate for attaining excellent human performance. TQM focuses on the integration and coordination of all activities in a work process and aims at continuous improvement in quality (Kenya institute of management 2009, Total Quality Management).

TQM has been defined in a variety of ways by different authors. Mohanty and Lakhe (2002) defined TQM as a quest for excellence, creating the right attitudes and controls to make prevention of defects possible and optimize customer satisfaction by increased efficiency and effectiveness. Oakland (1989) defines TQM as an approach to improving the effectiveness and flexibility of a business as a whole. It is essentially a way of organizing and involving the whole organization, every department, every activity and every single person at every level.

Total quality management is a broad, including whole organization’s efforts to improve the quality of products and services, applicable to all businesses. It is a method by which management and employees can become involved in the continuous enhancement of the production process of goods and services. It is a combination of quality and management tools which is aimed at increasing business and reducing losses due to inefficient and wasteful practices.

Quality management is focused not only on product or service quality, but also the ways to achieve it. Quality management therefore uses quality assurance and control of processes as well as products to attain more constant/consistent quality. The principles of quality management practices according to ISO 9001:2008 include applying the principles to improve their organizations’ performance; Customer Focus/orientation, Leadership, Involvement of, process approach, System approach to management, continual improvement, Factual approach to decision making, and Mutually beneficial supplier relationships. These are highly influenced by many factors in an organization. An organization has to acquire certification by ISO accredited firm to implement quality practices. Creech (1994) identified the five pillars of quality management practices as shown in Figure 6.2, which he argued provide the strong foundation upon which the system must rest. He proposed that a holistic, humanistic management system is required that blends these principles in to every aspect of the organization.
2.2.2 Models/Theories in Quality Management

Most “quality management models” to date have been largely “experience-based”. For example, Deming’s famous chain reaction model and Juan’s trilogy model are validated by the gurus’ own observations and experience in the industry. Such “experience-based” models have laid the cornerstone for some more “theory-driven” approaches to quality management, usually encompassing theories from other related disciplines such as motivational theories and group dynamics.

Some of the theories include; the deming theory. W Edwards Deming placed great importance and responsibility on management, at the individual and company level, believing management to be responsible for 94% of quality problems. His fourteen point plan is a complete philosophy of management, which can be applied to small or large organizations in the public, private or service sectors. Deming also encouraged a
systematic approach to problem solving and promoted the widely known Plan, Do, Check, Act (PDCA) cycle.

Philip Crosby is another person credited with starting the TQM movement. He made the point, much like Deming, that if you spend money on quality, it is money that is well spent. Crosby based on four absolutes of quality management and his own list of fourteen steps to quality improvement. He defined quality as adherence to requirements, prevention is the best way to ensure quality, zero Defects (mistakes) is the performance standard for quality and quality is measured by the price of nonconformity.

Joseph Juran is responsible for what has become known as the "Quality Trilogy." The quality trilogy is made up of quality planning, quality improvement, and quality control. If a quality improvement project is to be successful, then all quality improvement actions must be carefully planned out and controlled. Juran believed there were ten steps to quality improvement.

Creator of the last theory, Dr. Kaoru Isikawa is often known for his namesake diagram, but he also developed a theory of how companies should handle their quality improvement projects. Ishikawa takes a look at quality from a human standpoint. He points out that there are seven basic tools for quality improvement. These tools are:

Pareto Analysis which helps to identify the big problems in a process, Cause and Effect diagrams which help to get to the root cause of problems, stratification which analyzes how the information that has been collected fits together, check Sheets which looks at how often a problem occurs, histograms which monitor variation scatter Charts which demonstrate relationships between a variety of factors and Process Control Charts which helps to determine what variations to focus upon.

Dale et al. (1994, pp. 10-13) have identified eight similar key elements of TQM: Leadership of the chief executive officer; organization tools and techniques, training, feedback and change. Similar key ingredients have been suggested by Talley (1991, pp. 31-40) after identifying the common threads of Crosby, Deming and Juran. They are: management leadership and commitment, strategy, training, participative problem solving,
measurement, statistical process control, continuous company-wide improvement and customer satisfaction. It is therefore possible to draw up a comprehensive framework of TQM by fitting them into the four-variable model. Figure 2.2 depicts this comprehensive framework.

Figure 2.2 A comprehensive framework for Total Quality Management

**Quality Climate**
(1) Top management obsession for quality; (2) Vision; (3) culture change; (4) long term commitment; & (5) unity of purpose

**Quality Process**
(1) Quality planning; (2) Leadership; (3) Empowering people; (4) Communication; (5) training and education; (6) Measurement

**Quality Methods**
(1) Scientific approach; (2) Problem solving tools and techniques; (3) Statistical process Control; (4) Teamwork and involvement

**Quality Results**
(1) Measurement and feedback; (2) Continuous evaluation; (3) Internal and external customer satisfaction; (4) Continuous improvement

*Source: Carlos Noronha, 1999*
2.2.3 Top Management Commitment

The management commitment is very important for the successful implementation of quality management practices in an organization. According to Hackman and Wagenman (1995) quality is viewed as ultimately and inescapably the responsibility of top management because top management create the organizations systems that determine how products and services are produced, the quality improvement process must begin with management’s own commitment to TQM. Pheny and Teo (2003) also observed that top management must communicate TQM to the entire organization to create awareness, interest, desire and action. They should provide the vision of where the organization is going with its quality efforts and create a cultural change within the organization. Mohanty and Lakhe (2002) noted that top management should demonstrate commitment to TQM by; Becoming the first set of recipients of training in the philosophies and methods of TQM, imparting training to others, establishing customer satisfaction as their basic policy and determining the long term goals and establishing TQM vision for the future and personally communicating.

Additionally top management should generating enthusiasm for TQM activities in enforcing code of conduct, providing opportunities to subordinates to grow in their area of work, delegating authority to subordinates to make them more responsible, incorporating TQM programmes in the organizations overall strategy, reorganize employees for quality achievements and demonstrating by both words and actions that quality is number one operating priority of the organization.

Quality management is a new culture and a way of thinking, hence, without training such changes cannot be achieved. Training is the process of developing, changing and reinforcing job related behaviours. Oakland (1993) argues that employees, including supervisors are to be won over, not by compulsion but by training, leadership and recognition. Thus the fundamental to quality improvement is the availability of adequate supply of people who are educated in the philosophy and technical aspects of quality. Crosby (1979) recognizes the need for quality awareness to be raised among employees through education. His emphasis was on developing a quality culture within the organization so that the right climate exists.
Similar ideas were promoted by Deming through his 2 of his 14 points which were devoted to training. He emphasizes that management should institute modern methods of job related training, which should be an ongoing exercise from the time an employee is hired and continuous throughout their time in the company. Point 13 underscores the need to institute education and retraining programme to keep pace with the changing needs of the customers.

Introducing TQM requires awareness training to help develop appropriate attitudes and values relating to quality and the skills and techniques of quality improvement including team work which needs to be driven from top management. Other aspects of training include leadership, communication, and problem solving analyzing and interpreting data, meeting customer requirements, process analysis and mistake proofing.

2.2.4 Continuous Improvement of Service and Products

The idea of continuous improvement is a cornerstone of the Deming philosophy as practiced in Japanese companies for many years. Quality should not be portrayed as a programme with a definite end-point, but as a process. Kaizen is a way of thinking, working and behaving, embedded in the philosophy and values of the organization. It should be lived rather than imposed or tolerated, at all levels. Continual improvement of the organization’s overall performance should be a permanent objective of the organization: Key benefits include Performance advantage through improved organizational capabilities, Alignment of improvement activities at all levels to an organization’s strategic intent, Flexibility to react quickly to opportunities.

Applying the principle of continual improvement typically leads to employing a consistent organization-wide approach to continual improvement of the organization’s performance and providing people with training in the methods and tools to continual improvement. Also helps an organization in making continual improvement of products, processes and systems on objectives for individual in the organization, establishing goals to guide, and measures to track continual improvement while recognizing and acknowledging improvements.
Continuous improvement of service and products involves Processes Planning, Product Design, Process Design, Production & Service, Assessment & Action, and Resource Procurement. Action is the feedback mechanism for evaluation of compliance for external and internal satisfaction. Resource Procurement supports all of the processes by obtaining the resources (materials, suppliers, equipment, personnel, outside services, etc.) required for achieving the planned results of the processes.

2.2.5 Customer Orientation

Customer orientation is very important in the Agriculture sector. This is because customers who are farmers have specific needs to be addressed at any given time. Service providers including parastatals need to have processes focused at meeting farmers’ expectations. Farmers today are very enlightened and their expectations are not any less than that of other customers of industrial goods and services.

The only value a company will ever create is the value that comes from customers- the ones you have now and the ones will have in the future. Businesses succeed by getting, keeping and growing customers. Customers are the only reason we built factories, hire employees, schedule meetings, lay fibre optic lines, or engage in any business activity, without customers, there is no business (Don Peppers and Martha Rogers). To create satisfied customers, the organization needs to identify customer needs, design the production and service systems to meet those needs and measure the results as the basis for improvement. In the ministry of agriculture the customers are farmers who have various needs and especially inputs for food production knowledge to improve their processes as well as financial access.

There are two distinct types of customers i.e. external and internal. Internal customers are within the company-the colleagues working together for delivering a service or product for the external customer. I will however, remain restricted to the external customers here. An external customer may be an individual or an enterprise that hires or purchases the product(s) or service(s) from another person or business in exchange of money. To capture customers, a business must try to find out what people want, how much and how often they will buy and how their post-purchase satisfaction will be ensured; the relation of a
process versus its customer.

The process is defined as a set of interconnected activities that result in a product or a service to be offered to a customer. Thus, their relation is of critical importance. The result of one activity (the process) directly affects the other entity (the customer). For example, all the customer complaints are analogous to process variation. If variation that is non-conformance to the quality standards occurs, it will ultimately affect the quality of the end product or service. Therefore it’s important to keep a strong check on the processes.

Customer satisfaction is not an objective statistics but more of a feeling or attitude. If a customer is happy with a product or a service it has hired or purchase they will pay their bills promptly, which greatly improves cash flow—the lifeblood of any organization. Customers that are satisfied will increase in number, buy more, and buy more frequently.

Many companies approach customer satisfaction in a narrow way by confining quality considerations to the product alone. Many organizations also still focus more on processes and products from an internal perspective, rather than taking the perspective of the external customer. Whereas, service connected with the product are frequently overlooked, such as packaging, timely and accurate shipping and ability to meet deadline matters. Customers define quality in terms of their overall experience with the company.

Developing key indicators that drive customer satisfaction and collecting data regarding perception of quality received by customers are the basic steps in measuring customer satisfaction. Some of the key Indicators for physical products are reliability, aesthetics, adaptability, usability, functionality and appropriateness. Additionally indicators customers have for services include friendliness/courteousness of employees, safety/risk of service, billing/invoicing procedure, responsiveness to requests, appearance of physical facilities, approachability of the service provider, willingness to listen to customer, honesty and an ability to communicate in clear language.

Evans, James R. (2008) describes some leading generic customer oriented practices that lead to profitability and market share as clearly defining key customer groups and markets, considering competitors and other potential customers, and segment their customers
accordingly. Additionally, understanding both near-term and long term customer needs and expectations (the voice of the customer) and use systematic processes for listening and learning from customers are some of the key approaches by organizations focused on customers. Building relationships with customers through commitments that promote trust and confidence; provide easy accessibility to people and information; set effective service standards; train customer- contact employees and effectively follow up on products, services and transactions was identified among others.

He further identified effective complain management processes by which customers can easily comment, complain and receive prompt resolution of their concerns, measurement of customer satisfaction compare the results relative to competitors and use the information to evaluate and improve internal processes as ways to retain and attract more customers.

Figure 2.3; Customer- supplier model

![Customer-supplier model diagram](source: 2008 Evans, James The management and control of quality)

In the figure 2.3 every process receives inputs from suppliers and creates outputs for customers. The feedback loops suggests that suppliers must also be considered as customers. They need appropriate information about requirements they must meet. The model can be applied at the organisation level, process level and the performer level.

The natural customer- supplier link ages among individuals, departments and functions build up the chain of customers through an organisation that connects every individual and function to the external customers and consumers thus characterizing the organisations.
value chain.

The primary concern of Management of certified parastatals in the ministry of Agriculture Kenya is the provision of quality products and services to its customers. To accomplish these goals, the management is dedicated to satisfying the customer’s and stakeholder expectation and requirements through setting up customer internal control systems which capture and monitor the requirements specified by the customer or requirements which are not stated by the customer but necessary for specified or intended use are fulfilled to the satisfaction of their customers. (Quality policy of respective state corporations)

2.2.6 The Process Approach to TQM Implementation

Process is defined by Davenport and Short (1990) as a set of logically related activities performed to achieve a set of defined business outcomes. The process approach is a more holistic business approach to auditing, compared to the more traditional clause-based approach. It recognizes that while organizations are aligned by functional departments, usually including a “top down” hierarchy of reporting and responsibilities (organizational chart), those departments and functions come together to perform the work required – providing activities that form processes. By better understanding this “horizontal” interaction of the groups within your organization, you can ensure that all of their functions create real value for the customer.

Processes describe how work is performed and evaluated to the customer’s and organization’s expectations, including: Inputs, how many and from where, outputs, how many and where to. An evaluation criterion is based on whether the process is working effectively for the business and competent personnel to run the processes. Category 6 of the 2006 Malcolm Baldrige National Quality criteria for performance Excellence is process management. Creation processes, examines how an organization identifies and manages its key processes for creating customer value and achieving business success and growth. This includes how an organization identifies its key value creation processes and incorporates customer and supplier input in to determining its key process requirements; how processes are designed to meet these requirements; and how new technology, organizational learning, cycle time, productivity, cost control, and other efficiency and
effectiveness factors are designed in to processes.

In the Agriculture sector involves identifying farmers’ needs and managing processes that create farmer value. These include processes for acquiring farm inputs, training and market access. Most agricultural products are bulky and perishable therefore require processes that reduce loss to the farmer enabling maximum gain.

Support processes and operational planning calls particularly on how processes are designed to meet appropriate internal and external customer requirements and how they are controlled and improved. It also addresses how an organization ensures that adequate financial resources are available to support operations and new business investments, and how they are controlled and improved. It also addresses how an organization ensures that adequate financial resources are available to support operations and new business investments, how financial risks are assessed and how continuity of operations is ensured in the event of an emergency.

May aspects of ISO 9001:2008 deal with process management activities the entire standard are focused on an organizations ability to understand, define, and document its processes. The standard also addresses the management of inputs and outputs for design and development activities and use of systematic reviews to evaluate the ability to meet requirements, identify any problems, and processes necessary actions; purchasing processes; control of production and service including measurement and process validation; control of monitoring and measuring devices used in evaluation conformity; analysis and improvement; monitoring and measurement of quality management processes; and continual improvement ,including preventive and corrective action. The standard requires that an organization use its quality policy, objectives audit results, data analysis, corrective and preventive actions and management reviews to continually improve its quality management systems effectiveness. (Evans, James R; 2008).

An audit will show you if a process is not performing “up to par” and if that is the case, the organization should focus efforts to correct any issues. Management review is the key for actions and prevention measures. Conducting frequently reviews, follow-up and quality audit is very critical to the success of TQM programme. The review and follow-up
should involve top management and reference should be made based on the quality policy developed by the organization.

Figure 2.4; Model implementation process

Source; *TQM Implementation Process KIM TQM, 2009*

A customized process approach for one of the certified parastatals in the ministry of
Agriculture in Kenya – ADC is as shown below;

Figure 2.4: ADC Process interaction

Source: ADC quality manual 2011

2.3 Critical Reviews

Other variables that were not covered in the study included; Involvement of people, Systems approach to management, factual approach to decision and mutual beneficial
supplier among others. These also contribute to good quality management practices which lead to high business performance and customer satisfaction.

2.4 Summary of Gaps filled by Study

The existing literature had showed that research had been done on TQM practices in Kenya higher education, factors affecting TQM Processes in State Corporation for Customer Satisfaction, and TQM practices in Kenyan secondary schools and TQM practices and their effects on overall business performance in Kenya Service firms case of Kenya wild life service. By this study the researcher sought to interrogate indicators of Quality Management practices in Kenyan Agricultural public institutions thus contributing towards filling the gap.

2.5 The Conceptual Framework

The conceptual framework sought to describe four of the eight principles of Total Quality Management in which quality management practices are embedded. Top management commitment, continuous improvement of products and services, customer orientation and the process approach. The dependent variable is quality management practices. Thus the study sought to interrogate these as illustrated in the figure 2.5 below.
Quality management practices are as a result of a process based quality management system implementation in organisations that have been certified. According to the international standards ISO 9001; 2008 it requires process linkage and involvement of the customers as they play a significant role in defining requirements as inputs. Additionally, Planning, Doing, Checking and Acting should be applied to all processes. (ISO 2008). Planning involves establishment of objectives and processes necessary to deliver results in accordance with customer requirements and the organisational policies. Equally doing
involves implementation of the process while checking involves monitoring and measuring processes and product against policies, objectives and requirements for the product and reporting the results and finally acting which is taking action to continuously improve performance.

ISO quality management system emphasizes the process approach which requires understanding and meeting requirements, the need to consider processes in terms of added value. Additionally it emphasizes obtaining of results of process performance, effectiveness as well as continual improvement of processes based on objective measurement. Requirements for a quality management system ISO require an organisation to demonstrate ability to consistently provide product that meets customer and applicable statutory and regulatory requirements. Additionally aims to enhance customer satisfaction through effective application of the system including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory requirements. (International organisation of standardization 2008).

Measures of quality management practices by an organisation include customer satisfaction by use of customer satisfaction index. (ISO 2008) This is one of the measures of performance of the quality management system. The organisation should monitor information relating to customer perception as to whether the organisation meet customer requirements this can be through customer satisfaction surveys customer data on delivered products quality or opinion surveys, lost business analysis and reports.

Internal audit is the other measure (ISO 2008). The organisation should conduct internal audits at planned intervals to determine whether the quality management system conforms as planned and whether it is effectively implemented and maintained.

Monitoring measurement of process (ISO 2008). The organisation should apply suitable methods for monitoring and where applicable, measurement of the quality of management process e.g. calibration of measuring equipments. The methods should demonstrate the ability of the process to achieve planned results. When planned results are not achieved, correction and corrective action should be taken as appropriate.
Monitoring and measurement of products (ISO 2008). The organisation should monitor and measure the characteristics of the product to verify that product requirements are met. This must be carried out at appropriate stages and evidence of conformity to accepted criteria maintained. The Independed variables represent the generic principles under which the practices are based.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This section of the research presents the design of the study, particularly the research methods and techniques used, the reasons for the choice of the subjects, the manner of determining the sample size, the instruments used and their validation, and data analyses scheme which includes the application of statistical tools for treatment of data arising from the study.

3.2 Research Design

The research design that was adopted was descriptive and aimed at investigating indicators of quality management practices in selected state corporations in the agriculture sector. Events were recorded, described, interpreted, analyzed and compared/contrasted. Quantitative technique was also used since the expected information from the field involved factual elements that would be presented using descriptive statistics.

3.3 Target Population

The target population of this study was the staff dealing with quality management system in state corporations that are under ministry of agriculture. Four parastatals were purposively selected based on their current implementation of a quality management system (ISO 9001; 2008) under the ministry of Agriculture and are also head quartered in Nairobi where the target population is stationed. These corporations undertake their mandate in the four main areas of service delivery by the ministry of agriculture to the Kenyan citizens. These include; provision of inputs, research, regulation and provision of agricultural credit executed by ADC, KARI, CBK and AFC respectively. The total number of staff involved in quality management system (QMS) was as shown in the table 3.1 below;
Table 3.1 Target Population

<table>
<thead>
<tr>
<th>Parastatal</th>
<th>Number in QMS</th>
<th>Population size</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADC</td>
<td>25</td>
<td>$\frac{25}{114} \times 100$</td>
<td>22.7</td>
</tr>
<tr>
<td>AFC</td>
<td>25</td>
<td>$\frac{25}{114} \times 100$</td>
<td>22.7</td>
</tr>
<tr>
<td>CBK</td>
<td>24</td>
<td>$\frac{20}{114} \times 100$</td>
<td>18.1</td>
</tr>
<tr>
<td>KARI</td>
<td>42</td>
<td>$\frac{40}{114} \times 100$</td>
<td>36.3</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.4 Sampling and Sampling Procedures

The sample design was determined before data was collected as well as laid down the number of items to be included in the sample. Factors such as expenses, time and accessibility frequently prevent researchers from gaining information from the whole population. Therefore the researcher obtained data from a smaller group or subset of the total population in such a way that the knowledge gained was representative of the total population under study. From the above total population of 116, a sample rate of 0.5 was obtained using stratified random sampling technique. Simple random sampling was also used to pick items from each stratum.
### Table 3.2 Sample Size

<table>
<thead>
<tr>
<th>Parastatal</th>
<th>Population Size</th>
<th>Sample Rate</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADC</td>
<td>25</td>
<td>0.5</td>
<td>13</td>
</tr>
<tr>
<td>AFC</td>
<td>25</td>
<td>0.5</td>
<td>13</td>
</tr>
<tr>
<td>CBK</td>
<td>24</td>
<td>0.5</td>
<td>12</td>
</tr>
<tr>
<td>KARI</td>
<td>42</td>
<td>0.5</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
<td><strong>0.5</strong></td>
<td><strong>58</strong></td>
</tr>
</tbody>
</table>

### 3.5 Validity and Reliability of the Research Instruments

This sub-section presents details on how validity and reliability of research instruments used for this study were tested.

#### 3.5.1 Validity of the Research Instruments

The questionnaires to the respondents were designed to capture their independent views on qualities and features of their Parastatal. Validity concerns whether the instrument measures what it is supposed to measure or it is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. Mugenda and Mugenda (2003) notes that validity has to do with how accurate the data obtained in the study represents the variables of the study and is a true reflection of the variables. It is only then that inferences based in such data would be accurate and meaningful. To ascertain validity of the questionnaire the researcher consulted a statistician for further improvements to make criticism and comments on the same. His comments were incorporated in the questionnaires before the final administration of the instruments on the
participants of the study. The researcher conducted a questionnaire testing with free interaction with the respondents. The friendly atmosphere enabled the researcher to discover some short-comings in the research instruments and, therefore, made necessary adjustments before using them for the actual study. Responses to the test indicated to the researcher how well the variables of interest were represented for meaningful data, enabling appropriate adjustments to be made.

3.5.2 Reliability of the Research Instruments

A test-retest technique was conducted. A measure is considered reliable if a research’s finding on the same test given twice is similar. Reliability ensures that there is precision with which data is collected. If the same results are gained time after time, no matter how many times you conduct a piece of research, then that the data collected is reliable (Mugenda & Mugenda, 2003) To ensure the reliability of the questionnaire, a test was carried out in one of the parastatals which was outside the sample population in Nairobi. The research instruments were administered to the test group twice after a given interval and the results were compared. Cronbach’s coefficient alpha of 0.71 was obtained implying that the research instruments were reliable and therefore the researcher adopted them.

3.6 Data Collection Procedures

The data collection method used was a questionnaire. Permission to collect data was sought from the human resource manager of the respective corporations after an introductory conversation. The researcher was allowed to interact with the respondents in these organisations during data collection. The researcher also sent a formal letter to the Parastatal asking them for full cooperation with the researcher. A covering letter from the university was attached to the questionnaire, which included a brief description of the research proposal and assurance about confidentiality of the information obtained from the respondents. Questionnaires were physically given to the respondents in the selected parastatals for data collection by drop and pick method. The questionnaires were checked for completeness and consistency of information at the end of every field data collection day and before storage.
3.7 Data Sources and Instruments

The research instrument was a questionnaire. The field survey was conducted in four state corporations within Nairobi. A total of 70 structured questionnaires were distributed to the selected state corporation within the ministry of Agriculture. Information on quality management practices were obtained by the use of 30 statements of TQM set of practices on the structured questionnaire based on KEBS proposed TQM principles. Quality management practices, top management commitment, Customer focus, Process approach to management and continual improvement of products and services were examined. The questions were a mix of open and closed statements in issues related to the study.

The secondary data for this study was gathered from existing published works i.e. current TQM Journals and books, Kenyatta University library, corporations’ Strategic Plans, corporations’ Annual Report and ISO Implementation handbooks (quality manual and quality procedures. The secondary data was however not used in the analysis but have been used in the introduction and literature review sections of the study.

3.8 Data Analysis and Interpretation

Data analysis was based on the research questions designed at the beginning of the research. Frequency tables, percentages and means were used to analyse the data. Responses in the questionnaires were tabulated, coded and processed by use of a computer Analysis was done using statistical package for social science (SPSS). The data was tabulated by making logical interpretation, conclusion and recommendation. Descriptive statistics was computed for presenting and analyzing the data. A summary sheet was used to tally responses from participants before analysis. Proper fields (categories or themes of data) were created to describe all variables in the study, by use of descriptive statistics. Data was presented in the form of frequency distribution tables, graphs and that facilitated description and explanation of the study findings. The responses on open-ended questions were reported by descriptive narrative. The results of the study were compared with literature review to establish the indicators of quality management practices in state corporations in the Agriculture sector.
CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 General Overview of Respondents

The data for this study was collected within the month of March and April 2013 using questionnaires. In total, 70 questionnaires were distributed to the various respondents in the four (4) selected certified state corporations. Of these 58 questionnaires were successfully completed and returned to the researcher by respondents giving a response rate of 83%. According to Mugenda and Mugenda (1999) a 50% response rate is adequate, 60% good and above 70% rated very good. This implies that basing on this assertion; the response rate in this case of 83% considered substantially sufficient for the study. Analysis of the profiles of sample respondents was based on demographic characteristics of the respondents in terms of number of years of service, gender and level of education.

4.1.1 Gender of Respondents

Table 4.1 shows that of the 58 respondents, the majority of the respondents were male (54%) and female 46%.

Table 4.1 Gender of Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>54%</td>
<td>30</td>
</tr>
<tr>
<td>Female</td>
<td>46%</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)

This implies good representation of either gender in quality teams in the selected parastatals in the agriculture sector.
4.1.2 Level of Education

Majority of the respondents have university as the highest level of education as shown in figure 4.1.

![Highest Education Level](image)

**Figure 4.1: Highest Education Level**

This implies that staff handling quality matters (99%) in the selected parastatals, have a higher understanding of their quality management systems.

4.1.3 Length of Service

Most of the respondents have been in the place of work for between 0-5 years (40%) and over 15 years (30%) as depicted in figure 4.2

![Years Served](image)

**Figure 4.2: Years of Service**

This implies that the majority of the staff involved in quality issues in ADC, AFC, CBK
and KARI have been with the organisation for from 0-5 years. This indicates greater need for great effort for quality training in these corporations.

4.2 Quality Management Practices

The study findings depict a high level of understanding and application of quality management practices in the four state corporations. In table 4.2 the respondents indicated their agreement that quality management (93%) was being practiced in their organizations. This implies that ADC, AFC, CBK, and KARI have employed tools of total quality management thus executing the recommended practises as observed by the respondents in the respective corporations.

Table 4.2: Knowledge that Quality Management being practiced in the Organization

<table>
<thead>
<tr>
<th>Views on whether Quality Management being practiced in the Organization</th>
<th>Findings</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>93%</td>
<td>54</td>
</tr>
<tr>
<td>No</td>
<td>7%</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)

Majority of the respondents indicated that quality management was being practiced to a great extent (60%) within their organizations as compared to a low extent (9%) as shown in figure 4.3
This implies that the staff in these organisations agree to a great extent that quality management practices including change of procedures, conducting of management reviews, benchmarking, staff involvement, management reviews and certification respectively have been put in place by the organization for implementation of TQM.

The respondents further indicated that internal audits were being conducted (96%), monitoring and measurement of quality management being executed (95%) and monitoring of characteristics of products being done (90%). This is illustrated in table 4.3

**Table 4.3: Measurement and Monitoring of Quality Management Practices**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Audits being conducted</td>
<td>96%</td>
<td>4%</td>
</tr>
<tr>
<td>Monitoring and Measurement of Quality Processes</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>Monitoring and Measurement of Product Characteristics</td>
<td>90%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)
This implies that internal audits to review quality management system in ensuring continued application effectiveness and implementation in line with the needs of the respective corporations is being done.

Majority of the respondents (93%) in responding to what can be done to improve quality management practices in their organisations suggested continuous training of staff to build capacity for quality management as well as regular sensitization on the importance of QMS. Further respondents suggested strengthening of communication process between managers and staff on quality management implementation.

4.3 Top Management Commitment

The study also sought to determine the views of the respondents in relation to top management commitment on quality management practices. The findings indicate that majority of respondents agreed to a large extent (40%) and to a moderate extent (36%) that top management communicated vision and mission relating to quality management system as shown in figure 4.4.

Figure 4.4: Creation and Sustinance of Mission and Vision on Quality Management System
The respondents further indicated that top management were committed to quality issues (91%) and this influenced quality management practices (93%) in the organization. They further agreed that enough resources were committed by top management (60%) for implementation of quality issues. This is illustrated in table 4.6.

### Table 4.3: Top Management Commitment

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management commitment to quality issues</td>
<td>91%</td>
<td>9%</td>
</tr>
<tr>
<td>Influence on quality management practices</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Commitment of enough resources to implement quality issues</td>
<td>60%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)

This implies that top management commitment to QMS was visible and this affected the quality practices in the state corporations. This had an impact on the all employees involved in implementation of the quality. This indicates that top management commitment goes a long way in creating enthusiasm for total quality management activities enforcing code of conduct, providing opportunities to subordinates to grow in their area of work. Therefore increased need in delegating authority to subordinates to make them more responsible, incorporating TQM programmes in the respective corporations overall strategy, recognizing employees for quality achievements and demonstrating by both words and actions that quality is number one operating priority in the respective corporations.

Further allocation of adequate resources will determine how effectiveness of the QMS and continued re-certifications in these corporations.
4.4 Continuous Improvement of Products

The study also sought to determine the views of the respondents in relation to continuous improvement of products within their organizations. The findings indicate that majority of respondents agreed that their organizations had continuous improvement policies, conducted performance review for its products and services, had research teams and had improvement programs as shown in table 4.4.

Table 4.4: Continuous Improvement of Products

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence of continuous Improvement policies</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td>Conduct of performance reviews for products and services</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Existence of research teams for innovative solutions for products and services</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Improvement Programs for products and services</td>
<td>70%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)

From the findings implies that the selected state corporations conduct performance for their products and services towards improving their quality. However in the area of existence of research teams for innovative solutions, respondents were conservative this indicates need to strengthen this area for improvement of products and services.

4.5 Customer Orientation

The respondents were also asked to rate their organizations in relation to customer orientation.
The findings indicate that majority of respondents agreed to a large extent (38%) and moderate extent (48%) that their organizations had established and understood current and future needs as shown in figure 4.5.

**Figure 4.5: Current and Future Customer needs**
The implication of this is that state corporations in the agriculture sector had considerably improved to focus on the customer as opposed to the non customer oriented approach before the corporations adopted quality management system.

The respondents also indicated that their organizations communicates and balances the needs and expectations to a moderate extent (50%) of all interested parties as depicted in figure 4.6.

**Figure 4.6: Organization Communication to interested Parties**
This implies that these organisations communicates and balances the needs and
expectations of internal & external customers’, suppliers and other stakeholders respectively but perhaps can be done better.

The survey findings also indicated that the respondents agreed that management measured customer satisfaction through surveys as depicted in figure 4.7.

**Figure 4.7: Measurement of Customer Satisfaction through Surveys**

A further analysis of the findings indicates that the respondents confirm that management responses to complaints are done as illustrated in figure 4.8.

**Figure 4.8: Management Responses to Customer Complaints**
Finally in relation to level of service, majority of the respondents are satisfied with the level of service delivery to customers in their respective organizations as shown in figure 4.9.

![Chart: Level of Satisfaction with service delivery to customer](image)

**Figure 4.9: Level of Satisfaction with service delivery to customers**

This implies that with ISO certification the employees in these organisations are to a large extent satisfied with the level of service delivery to the customer. This further implies that customers in turn are experiencing satisfaction in service delivery with organisations implementing a quality management system which is tested through customer satisfaction surveys in the respective corporations.

### 4.6 Process Approach

The respondents were also asked to rate their organizations in relation to process approach. The findings indicate that majority of the respondents (90%) agree that organization approach defines activities necessary to obtain desired results.

The respondents (73%) also confirm that organizations evaluate risks and impacts of customers, suppliers and other stakeholders.
Respondents (73%) also agreed that their organizations analyse and measure capabilities of their activities. This is shown in table 4.8.

Table 4.5: Process Approach

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization process approach defines results</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Organization evaluates risks, consequences and impacts</td>
<td>73%</td>
<td>27%</td>
</tr>
<tr>
<td>Organization analyses and measures capabilities of key activities</td>
<td>73%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: Author (Field data 2013)

The findings of the study also indicate that the respondents agree to a moderate extent and to a large extent that their organizations perform improvements to existing processes as illustrated in figure 4.10.

Figure 4.10: Performance of Improvement to existing processes
50% of the respondents agreed to a moderate extent that the organisations performed improvements to existing processes. The implications of the findings is that there is need for corporations in the agriculture sector to continuously improve existing processes through implementation of recommendations by certifying body through correction of areas of non conformities raised and revision of processes to improve efficiency and pursuing re-certification
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of findings, conclusions, recommendations and suggestions for further studies based on the data analysis.

5.2 Summary of Findings

This study was aimed at identifying indicators of quality management practices of state corporations within the Agriculture sector in Kenya and based on the findings the following can be concluded:

Top Management Commitment and Quality Management Practices

On whether top management commitment influence quality management practices, most respondent (93%) agree it affects quality management practices to a large extent. Based on the findings of this study we can conclude that in order for an organization to successfully implement quality management system, the top management must create, share and sustain quality management targets and values. The top management must also demonstrate visibly commitment to quality issues since this influences success of the quality management practices. The study findings also conclude that top management must commit sufficient resources for successful implementation of quality issues. These findings are similar to those done in Malaysia in the electrical industry by Yousof in 2003. The implications of these findings are especially to the other non certified parastetals in the ministry of agriculture of expectations of implementation of a quality management system in their organisations.

Effect of Continuous Improvement of Products on Quality Management

On whether continuous improvement of products indicate quality management practices, majority of the respondents (81%) agree to existence of continuous improvement policies and performance reviews for products and services (90%) which indicate quality
management practices in these corporations. Abdullah, M.M.B., Uli, J., & Tar, J.J. (2009) in their study on the relationship of performance with soft factors and quality improvement turnover noted that continuous improvement of products led to overall improvement in quality and satisfaction by customers. This study corroborates the same and also proposes the need to have policies on continuous improvement, continued performance review of products and services backed with sustainable improvement programmes leads to high quality products and services. This ensures continued loyalty and high customer satisfaction and service delivery. It is therefore imperative that public sector organizations which aim at improving their service delivery initiate sustainable continuous improvement processes to guarantee quality and high service levels.

Relationship between Quality Management Practices and Customer Orientation

On whether there was customer orientation in as an indicator of quality management practices in the respective corporations, (48%) agreed that organisation to a large extent established and understood current and future needs of the customer. (50%) of the respondents also agreed to a large extend that organisation communicated and balanced needs of all interested parties. On responses to customer complaints most respondents (45%) agreed that the response was done to a moderate extent. In overall there was a relationship between customer orientation and quality management practices.

The study findings also conclude that for a successful quality management, customer orientation practices must be embedded within the organization. These findings are similar to those by Lehmann, D. R. (1994) on Customer satisfaction, market share, and profitability in Sweden. The study findings indicate that for successful quality management practice an organization needs to establish a process of understanding current and future needs of its clients, ensure efficient management response to customer complaints and a consistent tracking and measuring of customer satisfaction through surveys.
Effect of the process approach to total quality management implementation

On whether extent of process approach affected quality management practices, majority of the respondents (90%) agreed that the corporation’s process approach defines results and analyses and measured capabilities of key activities. Additionally half of the respondents agreed that organisation performed improvements to existing processes. This indicates that process approach affects quality management practices positively.

The study findings support the view that adoption of the process approach has a positive effect on total quality management implementation. The study findings emphasise the need to systematically define activities necessary to achieve desired results, the need for organizations to evaluate risks, consequences and impacts of activities on suppliers and customers. The study concludes that for successful TQM implementation it is necessary for an organization to continuously perform improvements to existing processes.

5.3 Conclusions

In many countries and many cultures the issue of quality management has been firmly on the agenda of public corporations for quite some time. In Kenya it has especially been instilled by the government in its public institutions in efforts to deliver quality services to its citizens. Service delivery for the masses and a growing climate of increased accountability are frequently cited as rationales for a greater emphasis on quality (Lehmann, D. R. 1994). Other environmental forces include the greater expectations and diversity of citizens as consumers, their demand for increased flexibility in provision, and increasing levels of competition within and across national borders (Lehmann, D. R. 1994). The role of Agriculture in stimulating national economic growth exacerbates the need to ensure quality within the Agricultural Corporations. These forces demand that quality assurance processes are both rigorous and transparent, and that quality enhancement initiatives are firmly embedded in any quality management programme.

Kenya’s economy is largely agriculture based. The sector directly supports about 80% of the population and contributes 26% of the GDP, and 60% of the export earnings there is
need to enhance indicators of quality management practices within the sector who in the recent past largely adopted quality management systems. Agriculture Sector in Kenya has to achieve the quality standards in order to be competitive in future open markets (while aiming to enter in the EU countries). A large number of organizations both large and small in the Agriculture sector suffer for lack of information in the field of quality management and they need theoretical and practical training in this field (MOA, 2004).

We can therefore conclude that based on the findings of this study, it is imperative that all corporations within the Agricultural Sector embrace quality management practices if Agriculture is to continue to be the backbone of our economy. Agricultural Corporations need to ensure total visible top management commitment to quality, embracing customer orientation in quality issues, adoption of process approach in implementation of quality practices and ensuring existence and maintenance of continuous improvement practices for products and services. These have been identified as key indicators of quality management in corporations as evidenced in the findings of this study.

5.4 Recommendations

Though individual organizations in Kenya can benefit from the study’s findings, practical implications resulting from this study are of particular relevance to the Government and the public sector in general who wish to improve their service delivery through implementation of quality management practices. The following recommendations were made:

The Corporations within the Agricultural Sector need to focus on the identified factors namely; top management commitment, continuous improvement of products and services, customer orientation and adoption of process approach in successful implementation of quality management practices as expected by the parent ministry acting on behalf of the government.

The study also recommends continued capacity building for all Public Corporations on quality management practices in matching their respective environments for improvement.
This is in line with our vision 2030 which aims to transform Kenya into a newly industrialising, “middle-income country providing a high quality life to all its citizens by the year 2030”. The Government endeavours to offer quality service delivery to all citizens and consumers of our products both locally and internationally through its established public institutions. Thus the need to improve quality management practices. Equally adoption of the quality culture in these parastatals will lead to increased access of export market thus growing the country’s economy to double digit as envisaged in the blue print.

Customer orientation too is an area which requires a lot of improvement in order to completely break out from public service delivery by public institutions which is passive, to one which is proactive, outward looking, result oriented and one which seeks customer satisfaction as well as value for money.

Provision of basic inputs in the agriculture sector is very significant to growth of Kenya’s economy. This is because in Kenya, the growth of the national economy is highly correlated to growth and development in agriculture thus its importance. Adoption of quality culture in all features of agricultural services including; agricultural research, agricultural extension, training and information services, marketing, agricultural credit and inputs, pest and disease control as well as statutory and development authorities play a pivotal role in moving the agriculture sector to the desired level in supporting the Kenyan farmer and all other stake holders. Thus the much needed effective implementation of quality management systems in these institutions.

5.5 Suggestions for further Studies

The results of this study suggest a variety of implications for future research. First, indicators used in the study are limited to TQM though there exists a variety of other quality management practices. Future study may explore other quality management practices which will provide a rich research base for researchers to compare the outcome with the results of this study. Additionally these quality management practices can be compared in their extent of implementation in private and public sectors.
Secondly, it is further suggested that future researchers accommodate major differentiating factors, including economic, other sectors of the economy, cross border corporations instead of drawing conclusions from the findings of studies conducted in contrasting environments.

In the spirit of promoting regional integration it is also recommended that future studies include in the population and samples other organizations within the East African Community.
REFERENCES


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Pheny & Teo (2003). *TQM*


Republic of Kenya (2008-2012). *Statehouse strategic plan (Revised)*


Senge (1990) *Learning Organizations*


# APPENDIX 1: Parastatals in the Ministry of Agriculture

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agricultural Development Corporation</td>
</tr>
<tr>
<td>2</td>
<td>Agricultural Finance Corporation</td>
</tr>
<tr>
<td>3</td>
<td>Agriculture Society of Kenya</td>
</tr>
<tr>
<td>4</td>
<td>Chemelil Sugar Company</td>
</tr>
<tr>
<td>5</td>
<td>Coffee Research Foundation</td>
</tr>
<tr>
<td>6</td>
<td>Cotton Development Authority</td>
</tr>
<tr>
<td>7</td>
<td>Horticultural Crops Development Authority</td>
</tr>
<tr>
<td>8</td>
<td>Kenya Agricultural Research Institute</td>
</tr>
<tr>
<td>9</td>
<td>Kenya Plant Health Inspectorate Service</td>
</tr>
<tr>
<td>10</td>
<td>Pest Control Products Board</td>
</tr>
<tr>
<td>11</td>
<td>South Nyanza Sugar Company Ltd</td>
</tr>
<tr>
<td>12</td>
<td>Tea Board of Kenya</td>
</tr>
<tr>
<td>13</td>
<td>Kenya Coconut Development Authority</td>
</tr>
<tr>
<td>14</td>
<td>Kenya Sugar Board</td>
</tr>
<tr>
<td>15</td>
<td>Kenya Sugar Research Foundation</td>
</tr>
<tr>
<td>16</td>
<td>Pyrethrum Board of Kenya</td>
</tr>
<tr>
<td>17</td>
<td>Kenya Seed Company</td>
</tr>
<tr>
<td>18</td>
<td>National Cereals and Produce Board</td>
</tr>
<tr>
<td>19</td>
<td>Coffee Board of Kenya</td>
</tr>
<tr>
<td>20</td>
<td>Nyayo Tea Zones Development Corporation</td>
</tr>
<tr>
<td>21</td>
<td>Nzoia Sugar Company</td>
</tr>
<tr>
<td>22</td>
<td>The Kenya Agricultural Productivity programme (KAPP)</td>
</tr>
<tr>
<td>23</td>
<td>The Agricultural Sector Programme Support (ASPS)</td>
</tr>
<tr>
<td>24</td>
<td>Tea Research Foundation</td>
</tr>
</tbody>
</table>

Source: (MOA 2008)
APPENDIX 2: INTRODUCTION LETTER

Dear Respondent,

This questionnaire is designed to gather information on ‘Indicators of quality management practices of state corporations within the Agriculture sector in Kenya’. The study is being carried out in partial fulfilment for Requirements of the degree of Master of Business Administration in the Department of Business, Kenyatta University.

The information in this questionnaire will be treated with confidentiality and will only be used for the purpose of this research. Your contribution in facilitating the same will be highly appreciated.

Thank you in advance,

Sincerely,

Catherine K. Mutunga

Kalcath01@gmail.com
APPENDIX 3: QUESTIONARE

SECTION A

GENERAL REVIEW

Please indicate your;

1. Gender
   Male □   Female □

2. Position

3. Department

4. Years served;  0-5 years □  5-10 years □  10-15 years □  over 15 years □

5. Highest education;  Primary □  Secondary □  Collage □  University □

SECTION B: QUALITY MANAGEMENT PRACTICES

Please rate the following regarding your organization

6. Do you think quality management is being practiced in your organization?

   YES □   NO □
7. If yes to what extent

A  Very great extent
B  Great extent
C  Sometimes good/bad
D  To a low extent
E  To a very low extent

8. If no explain why

9. Does the organisation conduct planned internal audits to determine conformity and effectiveness of quality management system?

YES ------------ NO----------

10. Does the organisation monitor and measure quality management processes to achieve planned results

YES ------------ NO----------

11. Does the organisation monitor and measure characteristics of its product to verify requirements

YES ------------ NO----------

12. What do you think can be done to improve quality management practices in the organization

SECTION C: TOP MANAGEMENT COMMITMENT

Provide a response to show the extent to which you agree with the following commitment regarding your organization
13. Does the top management create and sustain clear visions, goals, targets and shared values as concern quality management system?

<table>
<thead>
<tr>
<th>Items</th>
<th>Not at all</th>
<th>less extent</th>
<th>Moderate extent</th>
<th>Large extent</th>
<th>Very great extent</th>
</tr>
</thead>
</table>

14. Is there top management commitment to quality issues in the organization?

YES -------------- NO-------------

15. Does this influence quality management practices in the organization?

YES -------------- NO-------------

16. If yes to what extend?

A   Very great extent
B   Great extent
C   Sometimes good/bad
D   To a low extent
E   To a very low extent

17. Has the top management committed enough resources for implementation of quality issues?

YES -------------- NO-------------

60
SECTION D: CONTINOUS IMPROVEMENT OF PRODUCTS

Please rate the following regarding your organization

18. Does the organization have continual improvement policies?
   Yes-------------------------No--------------------------

19. Does the organisation conduct performance review for its products and services?
   Yes-------------------------No--------------------------

20. Does the organisation have Research teams for innovative solutions for its products and services?
   Yes-------------------------No--------------------------

21. Does the organisation have improvement programs for its products and services?
   Yes-------------------------No--------------------------

SECTION E: CUSTOMER ORIENTATION

Provide a response to show the extent to which you agree with the following qualities regarding your organization.

<table>
<thead>
<tr>
<th>Items</th>
<th>Not at all extent</th>
<th>less extent</th>
<th>Moderate extent</th>
<th>Large extent</th>
<th>Very great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Organization establishes and understands current and future</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
customer needs.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Organization ensures that it communicates and balances the needs and expectations of all interested parties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Management measures customer satisfaction through surveys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Are management responses to customers’ complaints done</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Are you satisfied with the level of service delivery to customer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION F: PROCESS APPROACH**

Please rate the following regarding your organization

27. Does the organization process approach systematically define the activities necessary to achieve/obtain desired results

   Yes-------------------------No-------------------------

28. Does the organisation evaluate risks, consequences and impacts of activities on customers, suppliers and other stakeholders

   Yes-------------------------No-------------------------

62
29. Does the organization Analyse and measure capabilities of key activities

Yes-------------------------No-----------------------------

30. Does the organisation perform improvements to existing processes? (Tick most appropriate)

<table>
<thead>
<tr>
<th>Not at all</th>
<th>less extent</th>
<th>Moderate extent</th>
<th>Large extent</th>
<th>Very great extent</th>
</tr>
</thead>
</table>