

**QUALITY MANAGEMENT SYSTEM PRACTICES AND CHALLENGES IN
ETHIOPIAN SUGAR INDUSTRY: THE CASE OF METAHARA SUGAR FACTORY**



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June 2022

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DECLARATION

I, declare that the thesis entitled “**Quality management system practices and challenges in Ethiopian Sugar Industry: the case of Metahara Sugar Factory**” is my original work. This thesis has not been presented for any other university and it is not submitted for any other and that all sources of materials used for the thesis have been duly acknowledged.

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CONFIRMATION SHEET

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List of Acronyms

ISO	International Organization for Standardization
QMS	Quality Management System
KIM	Kenya Institute of Management
EQA	Ethiopian Quality assurance
GMP	Good Management Practice
QM	Quality Management
QA	Quality Assurance
QC	Quality Control
MSF	Metahara Sugar Factory
Qt	Quintals
Ha	Hectare
M	Meters
ESG	Environmental, Social and Governance

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ABSTRACT

Quality is a widely used concept that has become one of the primary agenda in most manufacturing and service providing organizations. Therefore, this research was aimed at Practices of Quality Management System and identifies challenges to implement Quality management System in Metahara Sugar Factory. Descriptive type of research was used and Both primary and secondary data sources were used for the study. The study gathered information from 333 Metahara Sugar factory employees. A self-administered questionnaire was used to collect primary data from Metahara Sugar Factory employees, and secondary was gathered from recorded data of sugar Factory. The collected data was analyzed using SPSS21. The findings revealed that QMS practices are lacking leadership viewpoints, customer focus, and process approach. The practice was at its pinnacle during the deployment of the Quality Management System and is currently declining. As a result, output and productivity are declining. However, the factory's has good relationship with the community, employees, and other stakeholders. Employee initiatives for improvement, motivation, understanding of quality policy, applications, and understanding of Quality goals are core values in the factory. The primary challenging elements of quality management system practices in industries are outdated technology, lack of input for production, competent human resources, financial resources, senior management commitment, government backing, a lack of quality audits, and security challenges are bottleneck for Quality management system practice in the industry. Encouraging best practices of the factory and avoiding those hurdles can reduce backing quality management practice and important for rehabilitation of QMS or introducing new system like ESG are very crucial for existence of industry, thus place the industry in a more acceptable and competent position, making the nation proud.

Keywords: QMS, practice, challenges, MSF

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Quality management system (QMS) is a formal system that includes documenting the structure, responsibilities and processes required to achieve effective quality management. In addition, quality management is defined by American Society for Quality as follows: “The application of a quality management system in managing a process to achieve maximum customer satisfaction at the lowest overall cost to the organization while continuing to improve the process” (ASQ, 2013).

An effective quality management system focuses on systematically developing and communicating a customer-focused mission, strategies and action plans; listening and responding to the customers’ needs and expectations; empowering employees to continuously improve and increase their satisfaction with their work processes and environment; and gathering and analyzing key indicators to improve organizational and process results (Daniel A 2010).

QMS is a continuing process of improvement involving all aspects of the business. The wider aim of QMS is to prevent mistakes before they happen. The three phases of QMS are as Quality Planning, Quality Control and Quality Assurance (ASQ, 2013). It is a process to follow in reducing errors in work. The keys to continuous improvement are commitment and teamwork. This commitment must start with the chief executive officer and filter throughout the entire organization. Quality Management System will not work without a total commitment and involvement from top management(ASQ, 2013).

Manager, in all areas of the company, must provide employees with the proper training, tools, equipment, and work place environment to accomplish the assigned task. Quality Management Systems (QMS) is defined as a set of coordinated activities to direct and control an organization in order to improve effectiveness and efficiency of its performance (Kenya Institute of Management [KIM], 2009).

It is a process oriented approach that focuses on identification and interactions of various activities that translate inputs into outputs, and the management of these processes to produce desired outcome. Advantage of process approach is the ongoing control that it provides over the linkage between individual processes which emphasizes the importance of understanding and meeting requirements, the need to consider processes in terms of added value, obtaining results of process performance and effectiveness and finally continual improvement of processes based on objective measurement (Kenya Institute of Management [KIM], 2009).

According to Osman (2016) the most important barriers facing QMS in an organization are insufficient resources allocation, lack of management commitment, lack employee's commitment and factors related to organization's internal systems such as inherited deficiencies in planning and preparatory phase, the nature and complexity of the project, lack of a total change in organizational focus and also lack of new strategies that produced improving in operational processes at all levels. According to Hussein *et al* (2017) the seven identified factors are lack of awareness, resistance to change, the existence of accreditation, commitment of top management, time management, and resource availability. The implementation of QMS is greatly influenced by resource availability, staff training, top management skills, and information technology (Ogany, 2017)

The Ethiopian manufacturing industries are currently becoming ISO certified and tried to implement ISO 9000 quality management system. The number of organization being certified is increasing as compared to few years ago even if the number is still very small. But, the achievements obtained by being certified in the country are very low or almost no achievements have been seen (Negalign A 2011). This is because of ineffective implementation of the system (Negalign A 2011)

To bring better achievement in quality and productivity, different quality management practices have been undertaken in the company. These are development and implementation of ISO 9001:2008 quality management system in 2008, kaizen 2015/2016 and implementation of Environmental management System (EMS) in 2008. (Annual performance report of Metahara Sugar factory).

Ethiopian Sugar industry need to implement Quality to boost productivity and enhance customer satisfaction for production of sugar and ethanol. As of Metahara Quality management system was implemented but could not precede because of many challenges. At time of implementation the production was boosted and daily sugar production was exceeds 450 Tone /days.

Nobody has pointed out the discrepancy between Metahara's quality management practices and its best years, which may serve as examples for the rest of the sugar business. This implies that the sugar sector cannot afford to maintain a quality system, which explains why output and productivity are declining yearly.

1.2 Statement of the problem

Nowadays, the importance of quality management (QM) in sugar manufacturing industries has become well known as a result of the companies are working in a changeable and competitive environment. This has required manufacturing companies shifting from implementing the existing traditional management systems such as result based management system and management by objectives to improve management systems which include kaizen, ISO management systems, food safety management systems and award based management systems. As a result, the number of food manufacturing industries certified for ISO 9000 based management systems have shown increased trend yearafter-year worldwide including in Ethiopia (Mesfin, 2018).

Quality Management System aims to achieve continual improvement for an organization over the long term by focusing on customer expectation and needs while addressing the needs of all other interested parties (ES ISO 9004, 2009). Birhanu (2013) in his study asses the quality management practice in Ethiopian manufacturing and service industries based on the Ethiopian Quality Award (EQA). The result justifies that quality will be the future challenge of competitiveness

The overall contribution of the manufacturing industry to the national economy during the period 2006/2007 to 2010/2011 was a total of 35% of the national economy (CSA, 2019). Out of this 35% contribution, 33% of the value added, was contributed from food manufacturing industries as indicated by the same source.

As shown in previous discussions, Metahara Sugar factory implement ISO 9001 2008 and kaizen in 2015/16 and get certified. Additionally, the company implement the ISO 14001:2004 environmental management system, which is registered with the International Organization for Standardization (ISO).

The enterprise has also built a Quality Management System (ISO 9001:2000) into its processes that will ensure the capability of the enterprise to deliver quality products, services to its customers and manage environmental matters as an integral part of its business activities (Desta A 2014). Beginning with the introduction of the Kaizen management techniques at the Metahara Sugar Factory, Ethiopia, and the overall performance of the company may be considered remarkable and from the outset the sugar plantation area has a panoramic view. In pursuing Kaizen standards, the Metahara Sugar Factory has achieved a nationwide average sugarcane crop yield of 126.93 tons per hectare (Desta A2014) over those periods production of Factory boosted to 130,000 tone/year with high Quality of Sugar. Many study Quality related issue Ermiyas, 2009; Shewit,2009; Marta, 2010), (Jelalo, 2009; Birhane,2010), construction industry (Samson, 2008; Wondifraw,2009; Alemnew, 2010), manufacturing industry (Haben,2008; Netsanet, 2008; Mesafint, 2008; Birhan, 2008; Tessema, 2008; Dagne, 2009; Yitagesu, 2009) but lack of studies in Ethiopia to show the challenges of quality management practices in sugar industry

This study was filling the gap by examining practice of quality management system in Ethiopian Sugar industry, Metahara Sugar Factory and Challenge faced during implementation and ahead of it. In the light of above discussion, this study tried to answer the following research questions:

1.3 Research Question

1. What are the quality management practices is employed in Metahara Sugar factory?
2. What are major challenges of Quality Management System at Metahara Sugar Factory?

1.4 Research Objectives

1.4.1 General Objective:

The general objective of this study was to assess the practices of QMS and explore challenges in implementing

QMS in Metahara Sugar factory.

1.4.2 Specific Objectives

1. To assess practices of quality management system in Metahara Sugar Factory
2. To identify major Challenges of implementing the quality management system in

Metahara Sugar Factory

1.5 Significance of the Study

The findings of this study will be significant for sugar industry at all in order to enhance probability of increasing opportunity to identify their system. Particularly it enables Metahara Sugar management and employee to know good Practice of QMS and challenges it faced during its implementation. This enhance the view of employee good practices of Quality Management System increase Sugar production volumes, Sugar Quality, Ethanol Production, Molasses etc. It will enable management to find out the extent to which the anticipated results have been realized. It will also enable management assess the level of return on investment (ROI) to the company since QMS implementation requires a lot of capital outlay in terms of finances, human resource training, development of infrastructure and conducive work environment. It will also enable Management to now challenge that is bottleneck for quality implementation. It is worth noting that this study will not only benefit Metahara Sugar but will also assist other companies in the sugar industry in realizing the impact of quality management systems in their organizational performance with a view to improving efficiency, effectiveness and improved organizational performance by reducing challenge that may face QMS implementation.

Other researchers interested in the problem under this study will also benefit, as the research will lay a platform on which further research on the topic can be undertaken less strenuously since the more needed direction and insight is in the foundation of this study.

1.6 Scope of the Study

There are about 9 Sugar Company in Ethiopia, currently working in the country. Only two of them have implemented the ISO QMS. Out of which Metahara was used as target populations for the study

Conceptually ,the scope of the study was delimited to Quality Management System Practice and Challenge in Ethiopia Sugar Corporation focusing at Metahara Sugar estate without focusing other sugar estate due to time and budget constraints.

Furthermore, the variables covered by this study were focused different variables that affect quality practice such as external factors; technological factors and organizational behavior or cultural factors that affects the quality' practice and challenge faced during implementation will be covered.

1.7 Limitation study

Like many other social science research studies, this one had some limitations. There were several restrictions that a researcher had to deal with, including while gathering primary data. For instance, surveys that respondents completed but did not immediately return. The fairness of the respondents on the date of appointment and certain managers' lack of interest in providing quality-related data that is kept a factory secret prevents them from disclosing information about factory quality data.

1.8 Operational Definition

	Meaning
Quality	Conformance to requirements (PBBOK 7 th edition)
Quality Control (QC)	A part of quality management focused on fulfilling quality requirements' A corrective tool focused on the quality of output. Example: Validation/software testing, inspection, peer reviews. (PBBOK 7 th edition)
Quality Assurance (QA)	A part of quality management focused on providing confidence that quality requirements will be fulfilled' A managerial tool focused on the process of quality Example: Verification activities, process checklists, project audits and methodology and standards development. (PBBOK 7 th edition)
Quality Management	Management activities and functions involved in determination of quality policy and its implementation through means such as quality planning, quality assurance and quality control) (PBBOK 7 th edition)
Quality Management System	A system comprised of quality planning and quality improvement activities, the establishment of a set of quality policies and objectives that will act as guidelines within an organization, and QA and QC. (PBBOK 7 th edition)
Quality management system practice	a set of policies, processes and procedures used by an organization to ensure that it can fulfill the tasks required to achieve its objectives.

1.9. Organization of paper

The study was present in five chapters. The first chapter presented the introduction part stating the study background, statement of the problem, research objectives, the research question, significance and scope of the study, limitation of study, and organization of the study. The Second chapter deals with review of related literature, theoretical and empirical evidence and developing theoretical framework of the study. Third chapter deals with research design and methodology. Chapter four represents the research findings and its results, and the last chapter includes the summary, conclusions and recommendation drawn from this study. Finally, different appendixes were attached to the research paper.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter deals with to review the literature on the major concepts in this Proposal Quality Management System Practice, Challenge, and quality performance. For each concept, this review will begin with a brief discussion of the conceptual origins, definitions, and measures. This is followed by an overview of research, previous definitions, and major researchers who frame current understanding. It cover theoretical review of quality management system.

2.2 Theoretical Review

2.2.1 The Deming Quality Theory

Deming's theory of quality management rests upon fourteen points of management, the systematic approach to problem solving, the Shewart Cycle (Plan-Do-Check-Act), system of profound knowledge and psychology knowledge. Deming's system of profound knowledge consists of four main areas: systems appreciation which is an understanding of the way that companies processes and systems work, variation knowledge which is an understanding of the variation occurring and the causes of variation, knowledge theory which is an understanding of what can be and psychology knowledge which is an understanding of the human nature (Deming, 1986). According to KIM (2009), the adoption and action on the fourteen points of management are a signal that management intends to stay in business.

Deming's fourteen points to management include: constancy of purpose towards improvement of product and service, adopt a new philosophy for economic stability, cease dependence on mass inspection to achieve quality, end the practice of awarding business on the basis of price, improve constantly and forever the system of production and service, institute modern methods of job related training, institute modern methods of leadership, drive out fear, breakdown barriers between departments and individuals, eliminate the use of slogans, posters and exhortations, eliminate numerical quotas, work standards and management by objective or numerical goals, remove barriers that rob workers of the right to pride in workmanship, institute educational and retraining programmes and take action to accomplish the transformation. The Plan-Do-Check-Act (Cycle) is created for continuous improvement.

The Planstage entails identifying and recognizing opportunities for improvement in respect to customer satisfaction. The Do stage involves implementing the course of action that is intended to satisfy the customer needs. Check stage will involve auditing the do stage to confirm the performance of the system vis- a- vis customer satisfaction. Act stage entails making a decision regarding the implementation (ISO 9001:2008 (E) International Standard).

2.2.2 Juran Trilogy Theory

Joseph Juran developed the idea of quality trilogy: quality planning, quality improvement and quality control. According to Juran, quality planning involves all the affected parties related to the products and services and provides a road map consisting of the following steps: identify who your customers are, determine the needs of these customers, translate those needs into common language, develop a product that can respond to those needs, optimize the product features so as to meet customer needs. Quality improvement involves developing a process which is able to produce the product and optimize the process. Quality control involves developing processes that can produce the product under operating conditions and transferring the process to operation (Juran, 1992).

2.2.3 Feigenbaum

Theory Feigenbaum sees quality control as a business and believes that quality is the single most important force leading to organizational success and growth. He emphasized the administrative view point and considered human relations as a basic issue in quality control activities. Feigenbaum stressed that quality does not mean best but best for customers and selling price.

Quality control represents four steps namely setting quality standards, appraising conformance to these standards, acting when standards are exceeded and planning for improvement in the standards (KIM, 2009).

2.2.4 Crosby's Approach to QM

Crosby as cited in Zhang identified a number of important principles and practices for a successful quality improvement program, which include, for example, management participation, management responsibility for quality, employee recognition, education, reduction of the cost of quality (prevention costs, appraisal costs, and failure costs), emphasis on prevention rather than

after-the-event inspection, doing things right the first time, and zero defects. Crosby claimed that mistakes are caused by two reasons: Lack of knowledge and lack of attention.

Education and training can eliminate the first cause and a personal commitment to excellence (zero defects) and attention to detail will cure the second (Zhang, 2000). Crosby's approach focuses on doing things right for the first time and every time. There's no place in his philosophy for differing levels of quality or categories of quality. He stresses out that the way to manage quality is by prevention not detection and testing. And according to him, as quality an increase, costs decrease thus quality doesn't cost. To implement his quality improvement process, Crosby delineates a 14 point step approach consisting of activities that are the responsibilities of management, but also involve workers (Suarez, 1992).He also stresses out that key to quality improvement is to change the thinking of top managers to get them not to accept mistakes and defects, as this would in turn reduce work expectations and standards in their jobs. Understanding, commitment, and communication are all essential. Crosby presented the quality management maturity grid, which can be used by firms to evaluate their quality management maturity. The five stages are: Uncertainty, awakening, enlightenment, wisdom and certainty (Zhang, 2000).

2.3 Empirical Review

2.3.1 Quality Management System and ISO Standards

2.3.1.1 Quality Management System

Quality management system (QMS) is a formal system that includes documenting the structure, responsibilities and processes required to achieve effective quality management. In addition, quality management is defined by American Society for Quality as follows: "The application of a quality management system in managing a process to achieve maximum customer satisfaction at the lowest overall cost to the organization while continuing to improve the process" (ASQ, 2013a).

The concept of quality management systems has existed for many decades. In the 1930s, Walter Shewhart at Bell Laboratories inspired the use of statistics to identify 'best practice' in the USA.

This discovery has evolved over many years into control charts and in the US was adopted by

manufacturing industries before 1950. During World War II in the 1940s, quality control charts and statistical techniques were deployed to monitor production process and evaluate quality respectively (Gooff, 2001). In the 1950s and 1960s, W. Edwards Deming and Joseph Juran saw the importance of pursuing perfection by applying quality principles and techniques to processes and management of organizations.

With the U.S dominating world manufacturing, there was no practical interest in quality practices. Deming and Juran were invited to Japan to lecture on statistical quality control (Gooff, 2001). In the 1970s and 1980s, many U.S companies lost market share to foreign competition. Foreign manufacturing companies were producing lower priced products and better quality. As the West continued to add luxury to products in order to sell at higher prices and increased profits, the East was busy adding quality to products in order to produce items better and cheaper (Gooff, 2001).

In order to increase quality awareness, the ISO family standards and Malcolm Baldrige National Quality Award were established in 1987. Implementing a QMS for Pharmaceuticals industry does not guarantee perfect projects, but provides a framework for consistently maximizing the quality of the overall company activities. This framework should include provisions for training and qualification of specific Pharmaceutical procedures, audits and corrective actions. Incorporating these elements at an early stage of these processes will help to ensure company's quality objectives are consistently met.

According to (ISO 9001, 2015) the implementation of a QMS implies planning, defining, verifying, and updating processes and procedures. This is defined in the (ISO 9001, 2015) norm as the "plan-do-check-act." It encourages a change of attitude from a reactive to a proactive attitude. Planning and prevention gain ground to replace the daily solving of unexpected urgent problems. (Griffith & Watson, 2004), described that, there are different QMS that Pharmaceuticals company use including Investors in People (IIP), ISO 9000, EFQM, custom designed systems and or third party certifications. According to Hakim and others (2006) QMS is defined as "all activities of the overall management function that determine the quality policy,

objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system”.

To ensure the continually improvement of QMS, it is essential that the top management to give their full support and commitment especially to the development and implementation. This indicates that quality should be managed in ways that which are clearly identified, well documented and efficiently planned, implemented and controlled. ISO 9001:2015 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. Without satisfied customers, an organization is in threat. To keep customers satisfied, the organization needs to meet their requirements.

The ISO 9001:2015 standard provides a tried and tested framework for taking a systematic approach to managing the organization's processes so that they consistently turn out product that satisfies customers' expectations. The international standard for quality management (ISO 9001, 2015) adopts a number of management principles that can be used by top management to guide their organizations towards improved performance such as: customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision making and relationship management(ISO 9001, 2015). According to Crawford (2002), the overall aim of quality management is to satisfy the customer, conform to requirements, ensure fitness for purpose, and to ensure the product for use. Project model looks at quality management as set of activities or tasks that are required to ensure the project satisfies all the needs for which it was undertaken based on documented in the state of work and includes a focus on quality management from the perspective of product, processes, and the people needed to make quality an effective and efficient aspect of successful project completion.

QMS is implemented through the ISO (the International Organization for Standardization) 9001 concept which represents an international consensus on good management practices for a systematic and generic application of principles and practices based on quality. It is a written standard that defines basic elements of quality management systems that organizations should use to ensure that their products and/or services meet or exceed customer expectations and is

applicable to any organization regardless of its size whether in the public or private sector (KIM, 2009).

According to Business Dictionary (2011), performance is defined as the degree to which a given task has been accomplished measured against preset known standards of accuracy, completeness, cost and speed. For the purpose of this study, the term organizational performance will be used to refer to the degree to which the firm has attained its set objectives and targets with respect to the following variables: Financial performance based on costs of production and profitability, Market share levels determined by sugar sales and Sugar production volumes based on tons of cane crushed per day (tcd).

Sousa and Voss (2002) mentioned that quality practices are the observable facet of QM, and it is through them that managers work to realize organizational improvements. The quality practices of an organization are defined as the actions and procedures undertaken by a company or organization to ensure the delivery of high-quality service or product. Quality tools and quality

2.3.1.2 ISO 9000 standard

According to the 9000 store.com, the ISO 9000 arrangement was made by the international organization for standardization (ISO), as worldwide prerequisites and rules for quality administration frameworks. It was initially presented in 1987 and over a long time has built up itself within the worldwide economy having been embraced in over 178 nations with over one factoryion enlistments (The 9000 store.com). The ISO 9000 standards offer companies the capability to develop and implement an effective and dynamic quality system, with a focus on continuous improvement and adaptation, as long as the companies show then necessary willingness and commitment to exploit it (Williams, 1997). Each of the three sets concentrates on a different quality area.

ISO 9001 is the most wide-ranging, for it specifies the various operating requirements in such areas as product design and development, production, installation, and servicing.

ISO 9002 is concerned with quality assurance at the production and installation stages.

ISO9003 covers testing and inspections. As Karapetrovic, Rajamani, and willborn noted, "if the minimum requirements are met [for the above operating areas], a registrar accredited by national accreditation institution issues a certificate of compliance and the organization's quality system

becomes ISO 9001, 9002, or 9003 registered. "It is worth noting that certification is handed out for individual quality systems, not companies; this means that one company may hold more than one ISO 9000 registration. In addition to ISO 9000, two related quality standards emerged in American industries in the late 1990s. ISO 14000, also known as the Environmental Management Systems Standards, is intended to combine environmental management systems with the ISO 9000 quality system.

The second system, QS9000 is an adaptation of ISO 9000 to meet the specific needs of the "big three" American automobile manufacturers Ford, General Motors, and Daimler Chrysler. Both systems were expected to have a substantial impact on U.S. companies. ISO 9000 is a family of standards and within that family, ISO 9001 is the only standard an organization can be certified to and that has requirements an organization must follow in order to be compliant. The intention of ISO 9001:2015 is to help an organization consistently meet customer satisfaction, address risks and opportunities and meet business objectives. If done right, implementing ISO 9001 QMS (Quality Management System) will result in many other benefits for your organization.

The entire series of ISO 9000 consists of the following standards, which represent an international consensus on good quality management practices (Behaman, 2016)

(a) **ISO 9000:2015**, Quality management systems – Fundamentals and vocabulary. This Standard describes the fundamentals of quality management systems and specifies the terminology used in ISO (WHM2013).

(b) **ISO 9001:2015**, Quality Management Systems – is the new standard, it determines the requirements an organization must provide in their quality system for ISO 9001:2015 certification. It is the only standard in the ISO family against which organizations can be certified (or registered) through a third-party audit process.

(c) **ISO 9004:2009** It is a quality management approach for the sustained success of an organization. This Standard focuses on achieving sustainable success in today's complex, demanding and ever-changing environment by meeting the needs and expectations of customers and other stakeholders (WHM2013). An interesting facet of this Standard is that it promotes self-assessment as an important tool, which enables ongoing review of the level of maturity attained

by the QMS. However, it should be noted that the self-assessment tool is not a substitute for a thirdparty audit process, which is fundamental to ISO 9001 (WHM2013).

(D) **ISO 19011:2018**this is the third edition and the first and the second were ISO 19011:2002 and ISO 19011:2011 respectively. This international standard provides guidance for internal and external audits of management systems. Effective audits ensure that an implemented QMS meets the requirement specified in ISO 9001(Behaman, 2016).

2.4. Quality Management system principles

According to Chemin de Blandonnet & Vernier (2015) One of the definitions of a “principle” is that it is a basic belief, theory or rule that has a major influence on the way in which something is done. “Quality management principles” are a set of fundamental beliefs, norms, rules and values that are accepted as true and can be used as a basis for quality management. The QMPs can be used as a foundation to guide an organization’s performance improvement.

They were developed and updated by international experts of ISO/TC 176, which is responsible for developing and maintaining ISO’s quality management standards.

2.4.1 Customer focus

The primary focus of quality management is to meet customer requirements and to strive to exceed customer expectations. Rationale Sustained success is achieved when an organization attracts and retains the confidence of customers and other interested parties. Every aspect of customer interaction provides an opportunity to create more value for the customer. Understanding current and future needs of customers and other interested parties contributes to sustained success of the organization. (Chemin de Blandonnet&Vernier 2015)

Organizations that consistently satisfy their customers enjoy higher retention levels and greater profitability due to increased customers’ loyalty, Wicks & Roethlein, (2009, p.83)

It is important to understand and measure customer’s expectations in order to identify any gaps in delivering services with quality that could ensure satisfaction, Negi, (2009). Perceptions of customers are based solely on what they receive from the service encounter (Douglas & Connor, 2003, p.167). Organizations need to have policies for the "customer gratitude" (Palmatier et al., 2009) to have long-term relationship with customers. the process of improvement of these organizations may occur faster than those do not acquire any feedback from customers (Voss et

al., 2004). Thus, it is critical for organizations to encourage feedback from customers. customer feedback is an often-overlooked factor in explaining the relationship between service quality and customer satisfaction” (Voss et al., 2004:212).

In the contemporary business environment, customers are considered to be the central element of all marketing actions, and customer relationship management (CRM) has become a priority for firms marketing strategy (Karakostas et al., 2005).

Academics and practitioners proclaimed that a customer relations is necessary for firms to survive and be successful in contemporary business environment (Heinrich, 2005). Business firms, regardless of the size of their organization, as a whole, are spending billions of dollars each year on CRM systems or applications (Ngai, 2005;Zablah et al., 2004).

2.4.2 Leadership

Leadership is one of the eight quality management principles and is vital for successful implementation of a quality management system. Without effective and efficient leadership it will be extremely unlikely that any programme will be implemented satisfactorily. Leaders establish unity of purpose and direction for an organization, create and maintain the internal environment in which people can become fully involved, enable people to follow the path to achievement of organizational objectives, develop a vision and mission of their company, align and coordinate the peoples’ efforts with organizational goals and common purpose and strategy. Effective leaders establish values that are important to the organization these values form a central part of the organization’s culture. (Jarmila ŠALGOVIČOVÁ, Matej BÍLÝ 2009)

leadership means “vision, cheerleading, enthusiasm, love, trust, verve, passion, obsession, consistency, the use of symbols, paying attention as illustrated by the content of one’s calendar, out and out drama (and the management thereof), creating heroes at all levels, coaching, effectively wandering around, and numerous other things.” (Dent, 2006, p. 6)

The leadership principles could lead effectively towards inspiring, encouraging and recognizing people’s contribution, which is very important in achieving sustainable success (ISO, 2009).

According to Northouse (2009), leadership is the search for order, stability and consistency in the organization. Thus, leadership is understood as influencing individuals and groups that seek common organizational goals. All these are the actions of the manager to achieve the goal with

the help of employees (Lipinskienė, 2012). Yahaya & Ebrahim (2016), argues that leadership style has a significant impact on the work of an organization's employees to anticipate their productivity and effectiveness

2.4.3 Engagement of people

The international standard ISO 9004:2009 characterised this principle as: “People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit”.

The key benefits identified in this quality standard include motivation, commitment and inclusion of people within an institution, and their innovativeness and creativity in the implementation of its objectives. Vital benefits were also identified in the domain of personal responsibility, underlining that people are responsible for their own performance and that they are ready to participate and contribute to continual improvements. The standard notes that the application of people inclusion principle leads to people understanding their role and importance of its contribution and role in organization, identifying limitations to their performance, and accepting problems not only as just being their own problems but also taking responsibility for tackling them, valuing their own performance against their personal and general objectives, and to actively strive for increasing own competence, knowledge and experience. In addition to the aforesaid, the standard dealing with sustained success states that the application of this principle shows free exchange of knowledge and experience among people, and open discussion on problems and issues (ISO, 2009).

Cooper-Thomas, Paterson, Stadler, and Saks (2014) establishing that high levels of expectations and frequent performance reviews can increase employee participation and cooperation. The scarcity of resources has lead organizations to think more about reducing costs and increasing productivity and efficiency. Reduced variation in processes can reduce cost over time as it relates to process improvement (Emrouznejad, Anouze, & Thanassoulis, 2010); however, an organization must continue to incorporate processes that enhance employee engagement.

The main focus of employee engagement is the alignment of the employee with the organizational goals and to go beyond what is expected (Menguc, Auh, Fisher, & Haddad, 2013). Anitha (2014) suggested employee engagement reflects two essential elements: (a) willingness to contribute to organizational success and (b) a positive and energized employee who is at a

motivational state (Eldor & Harpaz, 2015). Karanges, Johnston, Beatson, and Lings (2015) defined engagement as the extent in which employees are willing to commit both emotionally and rationally within their organization, how long they are willing to stay as a result of that commitment, and how dedicated they are to their work.

Awareness of quality makes people demand the minimum standards of service they use to prove that the organizations providing these services can be trusted for quality. To answer these challenges, organizations implement a Quality Management System (QMS).

The application of the QMS confirms that the fulfillment of product or service requirements can be affected either directly or indirectly by the work of the executor (Prabowo, 2009). Semuel and Zulkarnain (2011) prove that the application of ISO 9001 QMS is able to significantly improve employee performance through a corporate quality culture as a mediation

2.4.4 Process approach

Ao Jing (2016) defined Process Approach as process management methods or process management. ISO9000 standardized the process management, and named it “process approach” in 2000. In the understanding and operation of QMS (Quality Management System) was systematically identification and management of the organization’s application processes. It was also elaborated specifically in “Any activity or group of activities that use resources to turn input into output can be thought of as a process. For an organization to function effectively, many interrelated and interacting processes must be identified and managed. In general, the output of one process will directly become the input of the next process. Systematically identifying and managing the processes of organization’s application, especially the interaction among the processes, is called ‘process approach.’” Process approach regarded customers as their management focus and it was guided by the customer demands. The organizations’ processes were generally divided into three categories: COP (Customer Oriented Process), MP (Management Process) and SP (Support Process). Xie Jianhua (2012) explained the three kinds of processes separately: COP is any process linked directly to organizations and customer interfaces. The inputs come directly from customers and the outputs go directly to customers, or to the process of increasing customers’ satisfaction level, such as product quoting, product designing, order processing, product manufacturing, customer feedback processing, etc. SP was a process supporting the operation of COP, examples of which included personnel training, facility

management, purchasing management, metering device management, document and records management, etc.

The process approach includes establishing the organization's processes to operate as an integrated and complete system. The application of a system of processes within an organization, together with the identification and interactions of these processes, and their management to produce the desired outcome, can be referred to as the "process approach" (ISO 9001:2008 clause 1) Consistent and predictable results are achieved more effectively and efficiently when activities

2.4.5 Improvement

Continual improvement is an important principle of total quality management and also new quality management principle involved to the revised ISO 9000 family of standards, which were officially released on 15th December 2000. It is an important part of the achievement and keeping of organization competitiveness and should be a permanent objective of the organization. Practical experience show that many companies are going out of business simply because they are not able to improve as quickly as their competitors. According to the definition continual improvement is recurring activity to increase the ability to fulfill requirements (ISO/FDIS 9000, 2000)

The organization shall continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review (ISO/FDIS 9001, 2000, clause 8.5.1).

Successful organizations have an ongoing focus on improvement. Improvement is essential for an organization to maintain current levels of performance, to react to changes in its internal and external conditions and to create new opportunities (ISO/FDIS 9000, 2000)

Continual improvement requires management support. Top management shall provide evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness. Continual improvement of the effectiveness of the quality management system must be included in the quality policy. Also management review which must be carried out at planned intervals must include the assessment of opportunities for

improvement and the need for changes to the quality management system, including quality policy and quality objectives (ISO/FDIS 9001, 2000, clauses 5.1, 5.3, 5.6.1).

Sustained success cannot be recorded without constant improvements. Professor Hubert Rampersad (2010, p. 1), one of leading American experts in quality management, personal branding and leadership self-assuredly claims: “Organizations can only survive by continual quality improvement”

International standard ISO 9004:2009 characterizes this principle as follows: “Continual improvement of the organization’s overall performance should be a permanent objective of the organization”

The same standard defines three key benefits from this principle: - improving performance through improved organizational abilities, harmonizing improvement activities in all levels according to its strategic intentions and adjustability to quick reaction on possibilities. Application of constant improvement principle leads to the application of consistent approach in the entire organization and to its permanent improving of performances, providing training of people on methods and tools for permanent improving, and establishing constant improvements of products. Application of this principle also leads to improving processes and system as an objective of each individual in an organization, establishing guiding objectives, measures for monitoring constant improvements and recognizing and awarding the improvement (ISO, 2009).

2.4.6 Evidence based decision making

Quality of organization’s activities have to be confirmed by compliance with International standards of ISO 9000 series. In accord with standard ISO 9001:2015 [ISO 9001:2015] “the adoption of a quality management system (QMS) is a strategic decision for an organization that help to improve its overall performance and provide a sound basis for sustainable development initiatives” [ISO 9001:2015]. Implementation of a QMS brings to enhancement of competitive advantages – organization’s products and services comply both to normative requirements and to customer needs.

The application of this principle also leads to “analysing data and information using valid methods, and making decisions and taking action based on factual analysis, balanced with experience and intuition” (ISO, 2009).The international standard ISO 9004:2009 qualified this

quality management principle as follows: “Effective decisions are based on the analysis of data and information”. Key benefits of this principle defined by this standard are: informed decisions, an increased ability to demonstrate the effectiveness of past decisions through reference to factual records and increased ability to review, challenge and change opinions and decisions.

2.4.7 Relationship management

The international standard ISO 9004:2009 qualified this quality management principle as: “An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value” and Practice benefits of this principle identified by the standard include: increased ability to create value for both parties, flexibility and speed of joint responses to changing market or customer needs and expectations, and optimization of costs and resources.

This standard states that the application of the principle of mutually beneficial supplier relationships typically leads to establishing relationships that balance short-term gains with long-term considerations, pooling of expertise and resources with partners, identifying and selecting key suppliers, and clear and open communication. The application of this principle also leads to sharing information and future plans, establishing joint development and improvement activities, and to inspiring, encouraging and recognizing improvements and achievements by suppliers (ISO, 2009).

Other quality management system include like six sigma, lean manufacturing. Six sigma In 1995 the American company General Electric and its CEO Jack Welch develop their version of quality management system called Six Sigma. Six Sigma is based on statistical measurement and data analysis. The three main target areas in Six Sigma are: • Reducing defects • Reducing cycle time • Improving customer satisfaction ´ One might call Six Sigma just a combination of TQM and Statistical Process Control. Six Sigma starts first and foremost from the customer. The idea is to use statistical measures to analyses the process or product (Holpp and Pande, 2002, pp.7). There have been many process improvement models over the years but the most popular has been the Deming Wheel. Plan-Do-Check-Act wheel has been proven to be one of the most effective process development tools. Six Sigma relies on the slightly similar idea, Define-Measure-Analyze-Improve-Control (DMAIC) (Cavanagh, et al., 2000, pp.37).

There are numerous of techniques and tools using the lean manufacturing but the main idea is always the same: to make the processes waste-free. William Levinson and Raymond Rerick have identified seven different types of waste (Levinson and Rerick, 2002, pp.38): 1) Overproduction 2) Waiting, time in queue 3) Transportation 4) Non-value-adding processes 5) Inventory 6) Motion 7) Costs of quality: scrap, rework and inspection

In order to achieve sustained success, organizations manage their relationships with interested parties, which affect organization's performances. It is more likely that the sustained success will be achieved when an organization manages relationships with its interested parties so as to optimize their impact on its performance(Radoica Luburić 2015)

Elimination of waste includes removing non-value adding activities that include removing unnecessary wastes caused by accumulating unnecessary equipment, materials or people.

In the art of sugar production, wastes accumulate as a result of 1) overproduction, 2) waiting time, 3) transportation, 4)lack of inventory control, 5) over processing, 6) inefficient motion, and 5) production of defective materials. This can be explained in the storage house is clean because unnecessary inventory is not stored. The company has designed and modified local rubber-tired carts that haul cane to the factorys. Though the transportation system is relatively effective, the motion of workers seems be excessive because the structure of the building is not designed for the Kaizen process. For example, since current operating systems are outdated there appears to be leakage of oil and other excessive nutrients. If not controlled, such wastage may seep into ground water and contribute to greenhouse-gas emission.(Desta A 2014)

The 5S approach provides standardization for the maintenance of good housekeeping and fosters an increase in quality and productivity. According to Juhari et al (2011) the 5S techniques incorporate: a) sorting (SEIRI)or gathering the spare part materials available in the company's store houses, organize things well, and label the items as —Necessary, —Critical, —Most important, —Not needed now, throw what all is —Useless. Items which are critical and most important are kept at a safe place; b) setting all (SEITON) or organizing the functional spare parts in a pleasing atmosphere so that workers don't have to waste their precious time searching for items or important documents; c) shining (SEISO, spreading the clean products in a clean workstation and all items are stored in cabinets and drawers.

In addition, the necessary documents are kept in proper folders and files; d) standardizing (SEIKETSU-SEIKETSU) or consistently setting certain standard rules and policies to ensure superior quality; and e) sustaining improvement or self-discipline (SHITSUKE) using the Six Sigma targets to reduce variations and increase quality and safety, and employees need to respect organization's policies and adhere to rules and regulations (Desta et al, 2014).

To make decisions and minimize variations in the products, the workers were trained to work in teams given that the top managers have a genuine desire to achieve quality through empowering all the employees. The company leverages the employees' suggestions for improvement in production. Management's support of an employees' reward system or incentives for the most productive workers are still to be incorporated. It might be better to give money reward rather than honor, for best worker

The sugar production trend has been moving to a just-in-time process to minimize inventory, lead-time, setup time, workload, and maintenance time. More particularly, these steps are done effectively in the store and in the health care units. For example, it takes less than three minutes for the storage master to identify a spare part from the store. Also, in the factory's health care system, it takes less than two minutes for the technician to identify the file of a patient even though the factory is not yet equipped with adequate computers. Productivity Measures: As discussed above, the main reason the company implemented the Kaizen technique was to increase the overall productivity of sugar production (Desta 2014).

2.5 Quality Management system practices

The quality practices of an organization (which take place within a quality culture or context) are defined as the actions and procedures undertaken by a company or organization to ensure the delivery of a high quality service or product. Sousa and Voss, (2002) mention that "practices are the observable facet of QM, and it is through them that managers work to realize organizational improvements.

PMI PMBOK breaks the practice of quality management into three processes: **Quality Planning (QP), Quality Assurance (QA) and Quality Control (QC)**. Overarching these three processes is the concept of continuous improvement by planning, doing, checking, and acting to improvements project quality.

Sousa and Voss, (2002) mentioned that quality management practices have a significant and strong impact on quality (internal process and product) and operational performance.

2.5.1 Quality planning

QP involve identifying which organizational and /or regulatory quality standard are relevant to the project and how to satisfy them. The process outline the rules that define the quality needs of the project. The required standards for the project products or service and how it will be confirmed that the planned requirements are provided in the projects final product. Some examples are Cost benefit Analysis, Benchmarking, Quality metrics and Measure

Cost benefit Analysis: it is process of comparing the various costs associated with investments with the benefits that it proposes to return in order to choose the best or most appropriate option.

While the idea is simple, the analysis can be quite complex often involving the use of mathematical calculations such as time value of Money Formula, Monetary values may also be assigned to less tangible effects such as risk, agency, goals, prospect of regulatory changes, etc. and benchmarking is a point of reference for measurement which is usually recognized as an industry best practice.

Benchmarking is the process of evaluating and comparing projects performance against an identified benchmark with the purpose of continuously measuring and improving project efficiency With the goal of improving project performance.

Formal document that encompasses both QA and QC procedures that address key aspects of assessing project quality standard. It is developed in the planning phase of project ad focuses on process used to plan, implement, document, and asses the project level of quality. The plan define the project policies, objectives, principles, responsibility, and accountability, as it relates to project quality and outlines how the project team will implement, perform and measure those policies. The detail of the QMP will vary depending on needs of the individual project,

Quality metrics are parameters or ways quantatively assessing projects levels of quality, along with the processes to carry out such measurement. Metrics outline the standard that work will be measured against and are often unique to each project and /or product. Quality metrics are defined in the planning phase of the project and then measured through tout the projects life to track and assess the projects level of conformity to its established quality baseline.

When identifying metrics by which to measure project quality against, an established standard is identified and then used to establish a quality baseline for each defined quality metric. This baseline is then used as a barometer to measure overall project quality throughout the projects life. Sources of quality baseline information include: **Acceptance Criteria**

Acceptance Criteria are pre- established minimum standards or requirements that a project or product must meet before deliverables are accepted.

Acceptance Criteria are defined in the planning phase of the project and then tracked throughout the projects life to ensure the projects conformity to establish quality. Acceptance criteria can b included functionality, requirements, performance measure, essential conditions, regulatory condition etc.

2.5.2 Quality Assurance

PMI PMBOK defines QA as the application of planned, systematic activities, to ensure that the project will employ all processes needed to meet requirements. QA provides the confidence that project quality is in fact being met and has been achieved. These action and the metrics used to measure them are defined in the project QMP. It is the responsibility of the project manager and the project team to ensure the diligent execution of the QMP and to assure the project is performing according to the standards defined within that plan. An example of a QA is Quality audits- quality audits are used as an approach to determine whether project activities comply with the projects quality policies, processes, and /or procedure and whether the appropriate controls are being applied. Quality audits are typically performed at defined project intervals (at the end of project phase,iteration,month etc). And are geared toward determining if project quality complies with the quality metrics and measure defined in the quality Management plan.

2.5.3 Quality control

QC is an interactive process that should be performed throughout the projects life and involves monitoring and controlling project results to determine whether they comply with defined quality standards outlined in the QMP and then identifying ways to eliminate causes of unsatisfactory results. To more easily manage quality within a project, especially large complex projects, it is a common practice to define quality measurement thresholds that identify when and what corrective action may be needed to eliminate causes of unsatisfactory project performance.

Practice of QC focuses on areas like Prevention, Inspection, Tolerance, Acceptance decision, Rework, Requirements and Best Practices

Document, Solicit feedback, be proactive, Iterative, Track Trends, Review, Analysis.

Act quickly, Archive Quality Disseminate Quality, Continuous Improvement, Triple Constraints (PMBOK 7th edition).

2.6 Challenges of QMS Practices

QM practitioners claim that if a company's culture is not conducive to total quality, the culture must be changed before a total quality programme can be implemented. There appears to be a multitude of reasons why companies fail in their effort to implement a quality management system.

However two common problems appear to be a lack of strategic planning and a lack of appropriate culture supportive of QM programs (Sebastianelli and Tamimi, 2003). The study of Liu (1998) and Rahim and Whelan (1994) showed lack of top management and lack of training as the main barriers for QM implementation.

The barriers to implementing QM will show up in all sectors- both manufacturing and service. Therefore, it is important for all organizations to understand and avoid these barriers both before and during QM implementation (Tamimi and Sabastianelli, 1998).

SIegan and Fazel (2000) have listed 16 obstacles which companies have reported when implementing QM. I he actual route to achieving the all pervasiveness of quality throughout organizations has however been many and varied. The centrality of integration across the whole organization as a core element of QM continues to be stressed (Manglesdorf, 1999).

Further, beyond the boundaries of any organization, other writers emphasize the importance of developing integration of quality management across the whole supply chain (Levy et al, 1995; Kuei et al, 2001; Casadesus and de Castro 2005).

The importance of linking strategy and approaches to quality management has been another important theme in the quality literature (Chapman et al, 1997; Lenard and Me Adam, 2002; Kelemcn, 2003; Foster, 2007). Various barriers to successful quality initiative implementation are also identified in the literature, like lack of commitment of upper level management (Soltani

et al, 2005), ineffective leadership and lack of employee involvement (Warwood and Roberts, 2004), together with inadequate human resources development, inadequate resources for QM, lack of key elements like leadership, planning for quality and customer focus (Sebastianeli and Tamimi, 2003).

The need for an appropriate culture continues to be an underlying principle in the quality literature (Gallear and Ghobadian. 2004). Despite the best efforts to senior Executives, major change initiatives often fail. Those failures have at least one common root. Executives and employees see change differently. For senior managers, change means opportunity both for the business and for themselves. But for many employees, change is seen as disruptive and intrusive (Strebel, 1996).

When the concept of GMP becomes clear, the top management discerns how much of it is already practiced in the company and where that top management awareness and commitment to quality management practices to focus for further exercises, how much of it is manager driven and how much of it dependent on specialized tools. In their study of quality management practices, Raju and Taguchi (2005) found that the commonly experienced problems when implementing any quality improvement practice including GMP include organizational resistance to change, organizational culture bent on maintaining the status quo, lack of customer awareness on GMP, lack of adequate resource to implement and maintain a quality assurance system, and lack of support and commitment from senior management.

The congruence of purpose in the implementation of any quality improvement program should transcend the entire organization and even beyond. The top management has major shares of action and responsibilities to initiate and sustain improvement activities in the company. The span of quality management initiatives is not confined merely to activities within company.

It spreads beyond to outside agencies like 50 suppliers, distributors and customers. There should be an element of commonality in the company's approach and customer's viewpoint. Although the WFO good manufacturing practices guidelines are in public domain, many manufacturing companies have had extreme difficulties in implementation. The findings above are cited in (K.Subrahmanya, 2009)

Companies are constantly moving ahead towards improving the quality of overall activities so as to prosper and serve the market in a better way. But still there are challenges that halt the purpose of quality management:

1. Constraints imposed by quality culture: The lack of genuine quality culture poses threats in terms of resistance to change as it is reluctant to accept the techniques that make a variation in its present style of working.

2. Autocratic style of leadership: If autocratic style of leadership is adopted by the top management, it creates an environment of fear. Because of which employees may not contribute their 100% which degrades their productivity ultimately affecting the quality.

3. Lack of employee commitment: As employees are directly related with the production process, a lack of commitment on their part can render the whole process of quality management useless.

4. Improper Channel of communication: For getting the lucrative results of the plans it is necessary that all the information flow in the organization at right time and in right manner. But loop holes in the communication channel act as a barrier in achieving the quality results.

5. Quality certifications-viewed as bureaucratic exercise: Some companies treat quality certification as bureaucratic exercise that enables them to conform to the client requirements or contractual obligations and getting competitive edge in the market.

6. Problems in identifying customer needs: Companies often fail in identifying the needs of customers may be because of inaccurate data, improper survey, and wrong interpretation of facts etc. This may result in supply of unwanted product to the customer and hence defeat the main objective that is customer satisfaction. (Monika Dahiya and Deepika Bhatia 2013) (International Journal of Engineering Research & Technology (IJERT) Vol. 2 Issue 3, March – 2013)

7 top management, input problems etc.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Profile of the study company

Ethiopian Sugarcane plantations are expanding with current area coverage of 98,986 hectares and production of 400,000 tons of sugar and 25,388 m³ of ethanol per annum (Esayas, 2014). The new sugar factories planned to have ethanol cogeneration facilities thereby increasing the production of sugar and co-products. Accordingly, when all projects are completed the annual sugar production will be boosted to 3.9-4.17 factory ion tons, ethanol production will be 181 factoryion liters and the factories will contribute 709 Mega Watt electric power to the national grid (Esayas, 2014).

The establishments date of Metahara Sugar Factory goes back as 1965, the time when the dutch company , named as Hangler Vond Amesterdam(H,V,A) had surveyed the area for future sisal development. The increasing demand for sugar in Ethiopia and the sustainability of the land and climate climate for sugar cane cultivation urged H.V.A to extend the sugar industry to Metahara plain. As result in july 1965 an agreement was signed between the Ethiopia Government and the Dutch company(H.V.A) under which the company acquired a concession of 11000 hectaresof land. Subsequent to the signing of the agreement, sugar cane cultivation was started 1966.

The factory started producing plantation white sugar on the 9th of November 1969.with an initial crushing capacity of 1700 tons of cane perday (TCD). Since then , the factory had undergone successive phases of expansions. The first expansion was made in 1973 to raise the crushing capacity of factory to2450 TCD. The enterprise was nationalized in 1975 and organized under Ethiopian sugar corporation. Then the second, and the third expansion took place in 1976 and in 1981, wich raised crushing capacity to 3000 and 5000 TCD respectively.

The company currently has a total concession area of 14733 hectares out of which about 10300 hecatares covered with cane (annual reports of MSF 2006)

The site is located 200 km from Addis Ababa in the Southeast direction. It is situated at 8° 53' N latitude and 39° 52' E longitude at an altitude of 950 meters above sea level (Fig. 1). The area has a semiarid climatic condition (Abera *et al.*, 2016).

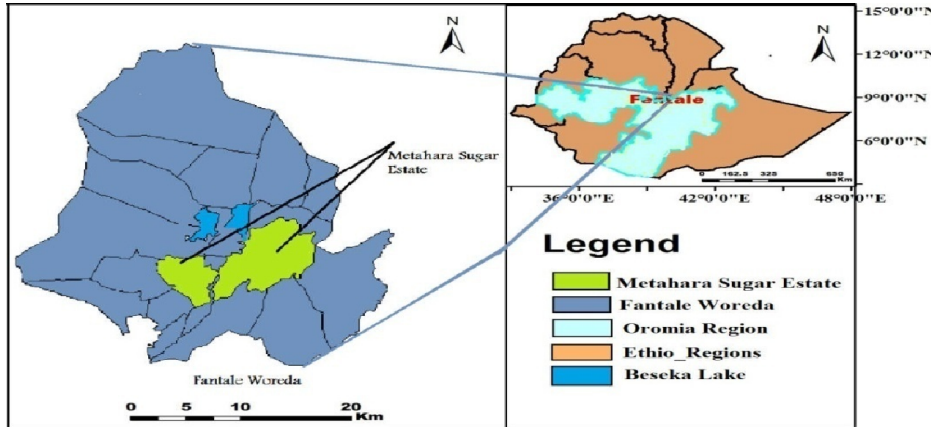


Figure 3.1. Location map of the study site, Metahara Sugar Estate

3.2 Research Design

Since the objective of this study was to describe the practices and challenges involved in the implementation of ISO QMS, the study is a descriptive type of research. This is to obtain information to systematically describe a Quality management system practice, situation, and challenges exist in metahara Sugar factory. It can be quantitative data as a means to reconstruct the ‘what is’ of a topic and describing the situation systematically. It gives researcher the ability to look at whatever is being studied in so many various aspects and can provide a bigger overview.

3.3 Data Sources

Both primary and secondary data sources were used for the study. Data was collected from primary and secondary sources. Primary data was collected from employees of Metahara Sugar factory with respect to concerned department. Secondary were collected from documents including official documents, performance letter and reports,

3.4 Sample Size Determination and Sampling Technique

3.4.1. Population

The study is conducted at Metahara Sugar factory. The actual population of the research were selected from the company's department related to quality activity held especially during implementation in Metahara Sugar Factory.

quality departments, production department, agricultural departments, material planning and inventory departments, Human Resource departments, sales departments, Technical departments and Building and Construction Departments using simple random.

3.4.2. Sample Size Determination

The sample size for this study is determined by using the simplified formula of (Yemane, 1967). Which is developed to calculate sample sizes? Currently at Metahara Sugar factory 2653 Employees are present, of this 2000 Employees are Population for the study.

Since the population under study is considered to be finite, the following formula is employed to calculate the sample size (Yemane 1967).

$$n = \frac{N}{1 + Ne^2} \quad n = \text{sample size} \quad N = \text{population}$$

e level of precision = 0.05

$$n = \frac{2000}{1 + 2000(0.05^2)} = 333$$

3.4.3. Sampling Technique

. The research instrument used is a well-structured self-administered questionnaire distributed to people at various levels in the organization. Data obtained from the questionnaire was analyzed and the findings evaluated using mean, frequency standard deviation and other statistical tools.

Factory operation , Agricultural operation and service employees in the organization was included in the study, according to their stratum by staff attribution starting from the managerial position all the way to operations, and a sample size sufficient enough to represent the population was taken randomly for the questionnaire survey. Management members in these organizations are also included.

3.5 Data Collections Tools

A self-administered questionnaire designed for employees at all levels of the organization was employed to obtain primary data. The questionnaire was preferred in its ability to find large amount of sample and relatively easy to analyses and cost effective. The questionnaire was be designed using five levels Likert Scale (Cooper and Pamela, 2003) to obtain the required information. The Likert scale was preferred because it allows measuring the attitudes of the respondents in a scale of 1 to 5 (from the least to the most) as to how they disagree or agree, disapprove or approve the attributes or factors presented as questions. The Questionnaires were created in order to identify Quality Practice in terms of leadership, customer, improvement, process approach, fact decision making, people's engagement and challenges that hampered the implementation and exercise of quality management system practice in the industry. The distributed questionnaire collected by support of staff one by one for further analysis.

3.6 Data Analysis Method

The quantitative data was collected is checked by the researcher and entered into a data entry structure developed in SPSS (Statistical Package for Social Scientists) software. The quantitative parts of the questionnaire are coded based on a Code Book prepared based on the questionnaire. The data entered into SPSS was cleaned/edited by the researcher before any analysis is made. Data analysis is made by using SPSS version 21. The primary data collected was checked, filtered and entered for further statistical analysis with the latest version of SPSS-21 (IBM, 2010).

3.7 Reliability

Test Mainly survey method was the strategy of the research and the reliability of the scale which is how the collected data is free from random error was checked. Collected data is worthwhile only if they are recorded in accurate ways. For any measurement to be valid, it must first demonstrate reliability (Frey *et al*, 2002). Cronbach's alpha is a statistic.

It is generally used as a measure of internal consistency or reliability of a psychometric instrument. In order to be reliable, using SPSS result, the Cronbach's alpha should exceed the threshold of According to Mugenda (2003)

Reliability ensures the degree of consistency or stability is high and hence involve examining the research instrument several times for reliability in relevance, clarity and ambiguity of items.

In this study, the Cronbach alpha reliability coefficients for the pre-tested questionnaires was computed for all the variables of the study. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer the coefficient is to 1.0 the greater the internal consistency of the items hence the higher the reliability of the study instruments and vice versa.

Cronbach's Alpha	N Items
0.92	49

Pilot study is done and discussion with advisor about item including in the questionnaire. Based on comment amendment is done and use for thesis development.

3.7 Validity

A test is valid if it measures what it claims to measure. The research instruments were validated by exposing them to various departments and conducting a pilot study among the respondents who did not form part of the real study so as to detect any weaknesses on the data collection instruments and adjust them accordingly depending on the outcome of the pretesting.

3.8 Ethical Considerations

The researcher maintained scientific objectivity throughout the study, recognizing the limitations of competence. Every person involved in the study was entitled to the right of privacy and dignity of treatment, and no personal harm will be caused to subjects in the research. Information obtained will held in strict confidentiality by the researcher. All assistance, collaboration of others and sources from which information was drawn is acknowledged.

3.9 Dissemination of Result

The result of study will distributed for all department emphasized for quality management system at end of the study.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the data presentation, analysis and interpretation involved in the study. Accordingly, the descriptive research study was used to draw the results and findings regarding the Quality Management System Practice and Challenge were presented.

The company currently has about 2653 employees out of which are 2000 are which were taken as target population in the company. From the sample size computation we have observed a result of 333 samples to be collected that would represent the entire population. Out of the 333 questionnaires distributed all 333 of them were filled and returned which were made ready for the analysis. Demographic characteristics of the respondents, analyses and interpretation based on the data collected from the respondents of the study area are presented in this chapter. Moreover, 21 summarized results of the demographic profile of respondents and the response towards the items included in the questionnaire as well as descriptive statistics were described, analyzed and synthesized in tables, percentage and charts with the help of Statistical Package for Social Science (SPSS) Version 21.

4.2 Demographic Characteristics of the Respondents

Demographic characteristics including: gender, age, current and educational background are summarized using frequencies and percentages.

Table 4.1 Gender

	Frequency	Percentage	Valid Percent
Female	64	19.2	19.2
Male	269	80.2	80.2
Total	333	100	100

The following table is the demographic characteristics of the study participants presenting such as gender, age, educational background, and work experiences, each participants in Metahara Sugar Factory illustrated as above table.

According to the above table 4.2, of the 333 total respondents 64 (19.2%) and 269 (80.2%) were female and male participants respectively. This indicates that, the most dominants of the study were male than female respondents.

Table 4.1 Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 24	15	4.5	4.5	4.5
	25-35	157	47.1	47.1	51.7
	36-45	96	28.8	28.8	80.5
	46- 55	52	15.6	15.6	96.1
	>55	13	3.9	3.9	100.0
	Total	333	100.0	100.0	

Demographic characteristics including: gender, age, current educational background, and response towards all variables are summarized using frequencies and percentages.

According to the above table 4.3, whose age below 24 is 15 (4.5%) ,between 25-35 years were 157 (47.1%), between 36-45 is 96 (28.8%) between 46-55 52(15.6%) and above 55 years were 13 (3.9%) the most study participants of the total respondents, this means that, at the study area engaged the youngest and energetic employees. From this information one can understand as, relatively speaking the most study participants than for thesis their ages ranged between 25-35 years, and 36-45 years were 157(47.1%) and 96(28.8%) respectively. This shows that, respondents were fallen on energetic age, which is good on the quality of this study in providing information

Table 4. 2Educational Level of Respondent

Respondent education level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		18	5.4	5.4	5.4
	certificate/diploma	76	22.8	22.8	28.2
	Degree	233	70.0	70.0	98.2
	masters and above	6	1.8	1.8	100.0
	Total	333	100.0	100.0	

As above table 4.3, the educational qualification each respondent, the majority of the study respondents were holding bachelor degree which accounted 244 (73.3%), whereas 83 (41.8%) were participants who were certificate/diploma , but a few respondents 6(1.8) were Masters degree and above which implies that the majority of respondents were almost all are above first degree holder. Surely the educational level of the employees positively affects the organization in implementing QMS quickly and effectively. Educated employees are quick to receive new ideas and incorporate and implement them as well. This in return benefits the organization in terms of return on investment and higher profitability in short period of time. Furthermore, these employees are active in understanding the benefits of QMS at all levels of the organization and endeavor more to come up on how to improve and also anticipate and predict customers need effortlessly.

4.2 Analysis on Quality Management System practices

The primary goal of the research was to look into the sugar plants' quality management techniques. The quality management practices that were investigated were classified according to quality principles. This refers to the factory's quality practices in terms of leadership, customer interest, staff engagement, stakeholder relations, quality system improvement, and statistical quality methodologies. Using a 5-point Likert scale questionnaire, the researchers investigated whether these quality management strategies were utilized in the firms. The respondents were asked to rate how strongly they agreed, agreed, neutrally disagreed, and severely disagreed with the assertions. The following scores were assigned to the responses: Strongly agree received a score of 5, agree received a score of 4, and neutral received a score of 0.

4.2.1. Leadership practices

Leadership and Management commitment are the active ingredients of QMS program implementation and practice which is necessary to demonstrate the level of leadership and management commitment to the country. According to Northouse (2009), leadership is the search for order, stability and consistency in the organization. Thus, leadership is understood as influencing individuals and groups that seek common organizational goals.

Table4. 3Quality management system Practice from leadership perspective

SN	Items	Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	My organization has clear quality policy	frequency	130	137	54	10	2
		Percent	39	41.1	16.2	3	0.6
2	Top management actively engages in setting quality policy and objectives in conjunction with business goals.	frequency	51	111	72	93	6
		Percent	15.3	33.3	21.6	27.9	1.8
3	Quality policy and objectives are communicated to all employees from the very beginning down the hierarch.	frequency	31	145	71	79	7
		Percent	9.3	43.5	21.3	23.7	2.1
4	Top management demonstrates organization-wide commitment to quality.	frequency	46	100	52	130	5
		Percent	13.8	30	15.6	39	1.5
5	Authorities and responsibilities are well defined and communicated down the hierarchy	frequency	67	107	70	81	8
		Percent	20.1	32.1	21	24.3	2.4
6	Management takes leading positions in guiding quality teams.	frequency	79	103	88	55	8
		Percent	23.7	30.9	26.4	16.5	2.4
7	Employees were provided with the necessary training on quality policy and objectives.	frequency	40	109	48	119	17
		Percent	12	32.7	14	35.7	5.1
8	Proportionate authority was delegated to act with accountability on planning and assurance	frequency	33	92	52	149	7
		Percent	9.9	27.6	15.6	44.7	2.1
9	Resources were sufficiently allocated for the Auditing of QMS	frequency	33	97	47	140	16
		Percent	9.9	4.1	14.1	42	4.8
10	Top management personally involved in QMS implementation, maintenance, improvement activity and outcome assessments.	frequency	37	112	27	148	9
		Percent	11.1	33.6	8.1	44.4	2.7
11	Top management makes prompt decisions on quality issues and engages in follow-up for their implementations.	frequency	28	95	38	149	23
		Percent	8.4	28.5	11.4	44.7	6.9

Source: Own computation based on data collected (SPSS result)

Pursuant to ISO 9001:2015 (ISO, 2015, p.3), top management is to demonstrate leadership and commitment with respect to customer focus by ensuring that: customer and applicable statutory and regulatory requirements are determined, understood and consistently met, the risks and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed, as well as the focus on enhancing customer satisfaction is maintained.

Leaders at all levels establish a unity of purpose and direction and create conditions in which people are engaged in achieving quality objectives of the organization. Creation of the unity of purpose, direction and engagement enable the organization to align its strategies, policies, processes and resources to achieve its objectives. Absence of this make the factory to loss full practice of quality management system.

As shown in the table above 4.4, the most common response from respondents about Quality policy and policy leadership in Sugar estate is "I agree," indicating that these indications of clear policy are good, and are expected to be the consequences of the QMS at Metahara Sugar Factory (MSF). Quality policy is at the heart of QMS, and its beneficial impact can be seen in the table above, suggesting that it may help to improve quality management practice and the long-term viability of the Quality vision (MSF). Top management's handling of the quality management system, on the other hand, is very inadequate, according to respondents. Poor training, ineffective delegation of a quality team, ineffective follow-up, a lack of preparation, and insufficient financial assistance

The study established that majority of the respondents believe that MSF has Quality policy and employees understand Quality policy with 39 % strongly agree, 41.1% agree and its objectives communicated to all employees 9.3% strongly agree and 43.5% agree. Top Management actively engages in setting quality policy and objectives in conjunction with business goals 33.3 %agree and 15.3% strongly agree. authority and responsibilities are well defined and communicated down the hierarchy 32.1% agree and 20.1 % strongly agree. Top Management takes leading position in guiding quality teams agree with 30.9% and strongly agree with 23.7%.

Employees were provided with the necessary training on quality policy and objectives agree with 32.7% and strongly agree with 12%.the organization has clear quality policy that its employees understand its objectives. Majority of respondent believes that top management has leading in QMS. Employees has understanding on quality management practice.

Top Management has demonstrate organization wide commitments to quality agree disagree with 39% ,Proportionate authority was delegated to act with accountability on planning and assurance disagree with 44.7% and, Resource were sufficiently allocated for the auditing of

QMS disagree with 42% and, Top Management personally involved in QMS implementation, maintenance, improvement activity and outcome assessments 44.4% disagree,

Top Management makes prompt decision on quality issue, engages in follow up for their implementation disagree with 44.7%. This means most respondents understand that top management has no commitment in demonstrating QMS, planning, control, allocating resources for QMS maintenance, improvement, assessing outcomes and taking corrective action, follow up for implementation and improvement. These findings contradict the total quality guru 51 theories by Edward Deming and Joseph Juran who argued that top management support and commitment is crucial for improved organizational QMS. However, the findings support the report contained in the Kenya Sugar Industry Strategic Plan, 2010-2014 that states that the sugar industry is currently riddled with weak corporate governance from top management. The findings show that in the case of Metehara Sugar Factory, top management commitment, leadership to quality management systems implementation, improvement should rehabilitate the system and make MSF proud of nation in sugar production as of ISO year 2003/2004.

4.2.2 Customer Perspective

Organization whose objective is to attain a sustained success should create opportunities for leadership and install it at all levels. Top management must show leadership and commitment to the quality management system by taking all that is necessary for its full effectiveness and efficiency. It has to show both leadership and commitment with regard to customer focus by ensuring that customer requirements and statutory and regulatory requirements are determined and met, that risks and opportunities that could affect the conformity of products and services, as well as enhance customer satisfaction are determined and addressed (ISO, 2015).

Table 4.4 Quality Management System in customer perspective.

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	My organization carries out market studies to determine its customer needs and wants.	frequency	58	83	37	133	22
		Percent	17.4	24.9	11.1	39.9	6.6
2	My organization plan, design, develops, produce, deliver and support goods and services to meet customer needs and expectations.	frequency	53	127	69	74	10
		Percent	15.9	38.1	20.7	22.2	3
3	Processes and activities of my organization are designed to increase customer satisfaction levels.	frequency	39	75	57	139	23
		Percent	11.7	22.5	17.1	41.7	6.9
4	My organization has a system for consistent tracking of complaints and procedures for all cases of complaints.	frequency	35	96	102	83	17
		Percent	10.5	28.8	30.6	24.9	5.1
5	Customer needs are reviewed regularly to meet changing customer preferences and expectations.	frequency	12	100	51	151	19
		Percent	3.6	30	15.3	45.3	5.7
6	My organization measures and monitors customer satisfaction regularly and take appropriate actions.	frequency	23	68	84	129	29
		Percent	6.9	20.4	25.2	38.7	8.7
7	My organization actively manages relationships with customers to achieve sustained success.	frequency	34	77	114	88	20
		Percent	10.2	23.1	34.2	26.4	6
8	My organization is committed to customer retention by ensuring quality products.	frequency	32	114	77	89	21
		Percent	9.6	34.2	23.1	26.7	6.3
9	Production is more aligned with customer requirements	frequency	30	95	62	120	26
		Percent	9	28.5	18.6	36	7.8
10	The organization is geared towards putting the customer first as opposed to before	frequency	38	85	81	106	23
		Percent	11.4	25.5	24.3	31.8	6.9
11	Customer complaints have reduced	frequency	27	76	83	122	25
		Percent	8.1	22.8	24.9	36.6	7.5

Source: Own computation based on data collected (SPSS result)

As the above table 4.5 indicates the most frequently given response by the respondents regarding the measurements of an improvement of customer service is “I disagree response” indicating that these indicators of customer services are poor supposed to be the outcomes of the decline of the QMS at Metahara Sugar Factory.

Again the likert scale value for the items of the organization carries out market studies to determine its customer needs and wants, Processes and activities of organization are designed to increase customer satisfaction levels; The organization has a system for consistent tracking of complaints and procedures for all cases of complaints. Customer needs are reviewed regularly to meet changing customer preferences and expectations.

According to the study, 39.9 percent of respondents are dissatisfied with the organization's use of market research to determine its customers' needs and desires. The organization's processes and activities are intended to increase customer satisfaction. 41.7% ,Customer needs are reviewed on a regular basis to meet changing customer preferences and expectations; 45.3%,the organization measures and monitors customer satisfaction on a regular basis and takes appropriate actions disagree with 38.7%, production is more aligned with customer requirements disagree with 36%, customer complaints have decreased disagree with 36.6%, The organization is geared toward putting the customer first, which 31.8 percent disagree with. Customer preferences are not investigated. As respondents indicate, customer loyalty, handling, and monitoring customer satisfaction are all lacking. This means they do not satisfy their customers in terms of production, sugar quality, service, and so on. These findings contradict with Wicks & Roethin, (2009, p.83) Organizations that consistently satisfy their customers enjoy higher retention levels and greater profitability due to increased customers' loyalty, this may due to reduction of customer based quality practice in the factory. On the other hand the respondent believes that organization plan, design, develops, produce, deliver and support goods and services to meet customer needs and expectations agree with 38.1% and strongly agree with 15.9%, 34.2% and 9.6% of the respondents further noted that organization is committed to customer retention by ensuring quality products.

As respondent indicate the organization plan to deliver quality sugar for customer and it is committed to retain customer in business.

This finding agree with (Karakostas et al., 2005) the contemporary business environment, customers are considered to be the central element of all marketing actions, and customer relationship management (CRM) has become a priority for firms marketing strategy. Therefore, even the implementation of ISO 9001:2008 QMS has resulted in a good benefit for the attainment of customer service objective , the response indicate that poor Quality Management practice is observed from customer perspective and thus good customer like coca company even reject to buy sugar from our organization.

Customer is king or queen for any business organization. Managing internal and external problems with respect to customer is vital for development of business and existence of company in growth and development way.

4.2.3 Peoples engagement

The ISO 9001:2015 statement reads: “Competent, empowered, and engaged people at all levels throughout the organization are essential to enhance its capability to create and deliver value”.

By engaging and empowering people at all levels, you encourage them to thrive. A thriving workforce adds value to their organization’s quality management. You can meet this goal by talking to your staff and affirming employees’ contributions to your business.

Top management should always bear in mind that full inclusion of employees and good selection of staff is the most important managerial decision. The application of this quality management principle and of the PDCA methodology for permanent improvements in reduced costs, improved customer retention and loyalty, heightened employee accountability, improved intellectual capital, optimized, effective and efficient processes, improved supply chain performance, enhanced organizational performance, credibility and sustainability (ISO, 2006).

Table 4.5 Quality Management System in Peoples engagement perspectives

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	Employees are made aware of the relevance of their activities and how they contribute to the achievement of the quality objectives of the organization.	frequency	41	151	74	53	14
		Percent	12.3	45.3	22.2	15.9	4.2
2	Employees take part in the formulation of strategic and operational plans	frequency	37	124	59	106	7
		Percent	11.1	37.2	17.7	31.8	2.1
3	All employees were trained for the work they perform before implementing the standard.	frequency	50	119	102	52	10
		Percent	15	35.7	30.6	15.6	3
4	Training on QMS was given periodically to fill gap in knowledge and skill of employees.	frequency	30	101	57	136	9
		Percent	9	30.3	17.1	40.8	2.7
5	There is open discussion and sharing of knowledge and experiences in the area of the QMS standard.	frequency	42	102	73	103	13
		Percent	12.6	30.6	21.9	30.9	3.9
6	Employees are encouraged to involve in improvement initiatives without fear.	frequency	22	110	94	103	4
		Percent	6.6	33	28.2	30.9	1.2
7	Employees are recognized for their contribution.	frequency	31	145	72	73	12
		Percent	9.3	37.8	27.9	19.5	5.4
8	Employees are empowered to make their own decisions as needed	frequency	31	126	93	65	18
		Percent	9.3	37.8	27.9	19.5	5.4
9	Surveys are conducted to assess employee's satisfaction, communication the results and take appropriate actions.	frequency	16	82	76	146	13
		Percent	4.8	24.6	22.8	43.8	3.9
10	Employees do their tasks efficiently with QMS quality initiatives implementation	frequency	20	114	53	127	19
		Percent	6	34.2	15.9	38.1	5.7

Source: Own computation based on data collected (SPSS result)

The motivation according to Fudge and Schlacter (1999) refers to the readiness of the individual to show a high level of determination in achieving organizational goals, which is in direct relation with the eagerness to meet the individual needs.

The key rule, according to Zahra (1999), is that it is necessary to stimulate those forms of employee behavior that contribute to the realization of the business strategy and the achievement of organizational goals. This means that motivation should be in a form to guide people to live the organizational culture, to accept and share the same pattern. Motivation cannot be directly measured, but conclusions can be drawn based on the behavior of employees, the degree of their commitment, perseverance, and work results. One of the most important indicators of motivation according to Tsai et al., (2007) is work success or work performance.

As the above table indicates the most frequently given response by the respondents regarding the Employees participation and engagement of peoples in Sugar estate “I agree response” indicating that these indicators of employees are good, supposed to be the outcomes of the of the QMS at Metahara Sugar Factory. Its positive effect is clearly seen on the above table which again may enhance quality management practice and sustainability of Quality vision in Metahara Sugar factory. On the other hand employee training, sharing of knowledge, implementation of quality management initiatives is very poor (disagree) as respondent indicate.

45.3% Respondent believe that Employees are made aware of the relevance of their activities and how they contribute to the achievement of the quality objectives of the organization, Employees take part in the formulation of strategic and operational plans agree with 37.2 % and strongly with 11.1%, All employees were trained for the work they perform before implementing the standard agree with 35.7% and strongly 15%, ,Employees are encouraged to involve in improvement initiatives without fear agree with 33%,Employees are recognized for their contribution agree 37.8% and 9.3% strongly agree, Employees are empowered to make their own decisions as needed agree 37.8%. The company is lucky to have such employee who knows what quality gives for them, family, and organization at all. Using this as good opportunity instrument they can reverse lagged practice and maintain its early certified quality practice, awarded kaizen implementations, good working culture, sustainable growth of production, establishments of incentives etc. The core value that MSF strives to maintain for its employees is encouraging labor for their work, motivating, empowering, and informing the employee to participate in the formulation of organizational strategy, operational plan (both on season and offseason plan), and budget preparation.

It means that each department has completed its plan, budget, action plan, risk assessment plan, and so on, and that they are responsible for everything in the organization. This finding agrees with (ISO, 2009) indicate that “People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization’s benefit”.

But many respondents dissatisfaction with 43.8% Surveys conducted to assess employee’s satisfaction, communication the results and take appropriate actions, Training on QMS was given periodically to fill gap in knowledge and skill of employees disagree with 40.8%, There is open discussion and sharing of knowledge and experiences in the area of the QMS standard disagree with 30.9%, Employees do their tasks efficiently with QMS quality initiatives implementation disagree with 38.1%.MSF Employees are aware of the standards, but there is a consistent lack of QMS training. As a result, the company's production capacity is reduced. Many quality activities are avoided at the factory due to a lack of input and the use of old and outdated machinery and technology. This has another impact on the quality of sugar production.

4.2.4 Relation Management perspectives

The application relation management leads to sharing information and future plans, establishing joint development and improvement activities, and to inspiring, encouraging and recognizing improvements and achievements by suppliers (ISO, 2009). The idea works on the theory that you need to have a good relationship with all interested parties. You need a good rapport with partners for them to supply you efficiently when activities overlap. By pooling information, expertise, and resources, you benefit all parties involved. A good relationship with suppliers results in an effective and efficient supply chain.

Table 4.6 Quality Management system Practice in Relation Management perspective

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	My organization determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization.	Frequency	36	129	66	79	23
		Percent	10.8	38.7	19.8	23.7	6.9
2	My organization determine and prioritize interested party relationships that need to be managed.	Frequency	30	119	85	81	18
		Percent	9	35.7	25.5	24.3	5.4
3	My organization uses quality as major criterion to choose suppliers for their products components.	Frequency	32	107	90	76	28
		Percent	9.6	32.1	27	22.8	8.4
4	Our organization prefers the suppliers to be QMS certified.	Frequency	36	139	73	55	30
		Percent	10.8	41.7	21.9	16.5	9
5	Suppliers give priority to our organization even when there is shortage of materials in the market.	Frequency	41	85	62	120	25
		Percent	12.3	25.5	18.6	36	7.5
6	There is sharing of information between my organization and suppliers for mutual benefits.	Frequency	55	101	86	65	26
		Percent	16.5	30.3	25.8	19.5	7.8
7	There are pre-established procedure to handle complaints with stakeholders..	Frequency	50	113	108	31	31
		Percent	15	33.9	32.4	9.3	9.3
8	My organization extends its good quality practices to its suppliers.	Frequency	32	78	73	118	32
		Percent	9.6	23.4	21.9	35.4	9.6
9	My organizations establish relationships with customers and suppliers that balance short-term gains with long-term considerations..	Frequency	20	99	64	127	23
		Percent	6	29.7	19.2	38.1	6.9
10	My organization's actions do not harm the society and have smooth relation as a result.	Frequency	48	97	82	73	33
		Percent	14.4	29.1	24.6	21.9	9.9

Source: Own computation based on data collected (SPSS result)

The organization determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization are 38.7% “I agree response” indicating that these indicators of factory has good relationship with his employee, stakeholder, neighboring community or society and its supplier etc. the factory use quality as criteria for selection of supplier in-order to increase quality maintenance in factory and to sustain standard in agricultural and field equipment services. Collecting quality tools or material is crucial in incremental of performance and productivity. Its positive effect is clearly seen on the above table which again may enhance quality management practice and sustainability of Quality vision in Metahara Sugar factory. On the other hand Suppliers give priority to our organization even when there is shortage of materials in the market, organization extends its good quality practices to its suppliers, organizations establish relationships with customers and suppliers that balance short-term gains with long-term considerations is very poor (disagree) as respondent indicate.

Quality management system is better with relationship management perspectives. Since factory give priority to solve issue with stakeholder, community, employees, most of respondent with agree response except Suppliers give priority to our organization even when there is shortage of materials in the market and organization extends its good quality practices to its suppliers. This may due to shortage of payment for supplier in frequent and exact time during handover of equipments. Effectiveness of Customer Relationship Management System on Service Delivery is very important to move your customer. The concept of customer relationship management evolved because it places emphasis on understanding customer needs and then solving problems or delivering benefits that create demonstrable customer value (Dowling, 2002).

Organization determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization agree with 38%. It mean the factory has good relation with suppliers, customers, employees, society. This makes the factory to enhance intangible resource for their valuable asset. Organization determines and prioritizes interested party relationships that need to be managed 35.7 % agree. As respondent of indicate on table 7 the factory managed relationship with interested party to grow and sustain its relation in long time base. Organization uses quality as major criterion to choose suppliers for their products components with 32.1 % agree response.

Most of respondent agree on the factory use quality as criteria for selection of suppliers. This make factory to be competent on for genuine tools, material and equipments for the factory.

Majority of the respondents believe that MSF determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization agree with 38.7% and 10.8 % strongly agree and determine and prioritize interested party relationships that need to be managed agree with 35.7%, There is sharing of information between MSF and suppliers for mutual benefits agree with 30.3% and 16.5% strongly agree, There are pre-established procedure to handle complaints with stakeholders agree with 33.9% , actions do not harm the society and have smooth relation as a result agree with 29.1%.

32.1%,41.7%,29.1% respondent further noted that MSF uses quality as major criterion to choose suppliers for their products components ,prefers the suppliers to be QMS certified and establish relationships with customers and suppliers that balance short-term gains with long-term considerations respectively. This indicates the company use QMS as one criteria for selection supplier for product component sulfur, calcium carbonate (factory chemicals) fertilizer, agricultural chemical etc. but respondent dissatisfaction with Suppliers give priority to MSF even when there is shortage of materials in the market disagree with 36%, extends its good quality practices to its suppliers disagree 35.4%, Generally quality management system in relation management in Metahara sugar factory has good implication. Strengthen its relation with society, customer, employees make to stand for better future and productive in all aspect.

This finding indicates that MSF has good relation with its supplier. The action, of company do not harm society rather benefit society as whole.MSF has good relationship with his employee, stakeholder, neighboring community or society and its supplier. This finding in agreement with The international standard ISO 9004:2009 qualified this quality management principle as: “An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value” and Practice benefits of this principle identified by the standard include: increased ability to create value for both parties, flexibility and speed of joint responses to changing market or customer needs and expectations, and optimization of costs and resources.

4.2.5 Improvement practices

Continual improvements have the integrative character of synergic acting. Continual improvements require the forecasting of demands and expectations of both users and relevant interested parties. According to (Zairi 2002) the culture of continuous improvement means better and better quality, lesser and lesser variation which results from process management practices that bring forth incremental improvements and innovations in products, services and processes.

Improving processes for preventing non-compliance, improving products and services in terms of meeting known and foreseen requests, and improving quality management system results. Improvement may be achieved reactively (e.g. using corrective measures), gradually (e.g. with continual improvement), by changing steps (e.g. with refractive steps), creatively (e.g., with innovations) or by re organization (e.g. transformation) (Radoica Luburić 2015)

Table 4.7 Quality Management System practice in improvement perspective

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	Sugar Production volumes have been increased	Frequency	35	37	88	110	63
		Percent	10.5	11.1	26.4	33	18.9
2	Machine utilization in terms of idle downtime is Reduced and Machine downtime has Reduced	frequency	33	80	60	118	42
		Percent	9.9	24	18	35.4	12.6
3	Production of cane per ha is improved	frequency	25	55	86	113	54
		Percent	7.5	16.5	25.8	33.9	16.2
4	Continual improvement projects are always promoted at all levels of the organization	frequency	25	57	52	150	49
		Percent	7.5	17.1	15.6	45	14.7
5	Employees at all levels are educated and trained on how to apply basic tools and methodologies to achieve improvement objectives.	frequency	26	95	78	106	28
		Percent	7.8	28.5	23.4	31.8	8.4
6	Employees are capable enough to successfully promote and complete improvement projects.	frequency	28	111	89	74	31
		Percent	8.4	33.3	26.7	22.2	9.3
7	Innovative ideas are encouraged and implemented for	frequency	42	97	47	116	31
		Percent	12.6	29.	14.1	34.8	9.3

	improvement.			1			
8	The internal audit system is consistently conducted as planned and was productive.	frequency	30	136	66	74	27
		Percent	9.6	40.8	19.8	22.2	8.1
9	Internal audits often come up with possible corrective actions or improvement proposals that fault finding.	frequency	23	118	78	86	28
		Percent	6.9	35.4	23.4	25.8	8.4
10	The quality manager ensures that the quality system is continually improved.	frequency	14	96	67	129	27
		Percent	4.2	28.8	20.1	38.7	8.1
11	Management takes corrective actions based on reviews and follows up for the implementation of actions.	frequency	19	85	81	123	25
		Percent	5.7	25.5	24.3	36.9	7.6
12	Sufficient resources were often allocated for maintenance of quality system.	frequency	15	99	75	113	31
		Percent	4.5	29.7	22.5	33.9	9.3

Majority of respondent are dissatisfaction with 33% and strongly disagree 18.9% for Sugar Production volumes have been increased, Machine utilization in terms of idle downtime is Reduced and Machine downtime has Reduced disagree 35.4% and 12.6 %strongly disagree, Production of cane per ha is improved disagree 33.9% and 16.2% strongly disagree, Continual improvement projects are always promoted at all levels of the organization disagree 45% and 14.7 strongly disagree., Employees at all levels are educated and trained on how to apply basic tools and methodologies to achieve improvement objectives disagree 31.8% and 8.4% strongly disagree, Innovative ideas are encouraged and implemented for improvement disagree 34.8%,The quality manager ensures that the quality system is continually improved disagree with 38.7%,Management takes corrective actions based on reviews and follows up for the implementation of actions disagree with 36.9%, Sufficient resources were often allocated for maintenance of quality system disagree with 33.9%. Sugar production at MSF was high during QMS implementation, reaching 130,000 tons per year, and it increased to 114000 tons per year in the kaizen year. MSF had a banner year this year. As the company fails to update its QMS, production falls. The estate's production and productivity suffer as a result.

Using an overaged factory, the lack of input for production causes the factory to lose QMS, causing production to fall.

As respondent indicate low improvement held in factory with respect sugar production, productivity of sugarcane per-hectare etc. on the other hand employees are ready for improvement except that low support of government, there is no sufficient allocation of resource for of quality management system. There is no improvement progress that mean it lag in quality management system at production and productivity. Low supply of input like machine, tools, agrochemicals make to violate standard. This reduce production and productivity, this again disturb management system especially quality management system. Government should see Industry in exact way, that support GDP by supply input, make standard and enhance production and productivity of sugar. This again improves the system, increase per individual sugar need of the peoples in the country. This finding contradict (ISO/FDIS 9001, 2000, clauses 5.1, 5.3, 5.6.1) with Continual improvement requires management support, management review which must be carried out at planned intervals must include the assessment of opportunities for improvement and the need for changes to the quality management system, including quality policy and quality objectives and (Desta 2014) Beginning with the introduction of the Kaizen management techniques at the Methara Sugar Factory, Ethiopia, the overall performance of the company may be considered remarkable and from the outset the sugar plantation area has a panoramic view. In pursuing Kaizen standards, the Methara Sugar Factory has achieved a nationwide average sugarcane crop yield of 126.93 tons per hectare. both the sugarcane plantation and sugar production have increased by 35% and 37% respectively.

Many respondent agree on Employees are capable enough to successfully promote and complete improvement projects agree with 33.3%, The internal audit system is consistently conducted as planned and was productive agree 40.8%, Internal audits often come up with possible corrective actions or improvement proposals that fault finding agree 35.4%. MSF employees understand quality policy and objectives, and they work to make the factory known throughout the country for ISO 9001 implementation and kaizen. This is a valuable asset that can be used to improve MSF further. Internal factory audits were performed, including financial and performance audits, to identify potential solutions. This allows MSF to have a good working culture and serves as a model for other sugar factories in Ethiopia, particularly in terms of documentation and recording. this finding agree with (Santos-Vijande and Álvarez-González, 2007) development of an organisational culture is not an easy task, as it consists of a group of shared norms and values shaped over a long time and that effect the way the organizations work

4.2.6 Fact Based Decision Practices

Make relevant data available to the decision-makers in your organisation, encouraging objectivity. Having access to reliable data allows for an improved decision-making process. Also, it helps with company's capability to review and change decisions or opinions. It also allows to determine past decisions' effectiveness..

Table 4.8 Quality Management System from Fact Based Decision making perspective

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	My organization determine, measure and monitor key indicator to demonstrate the organizations performance	Frequency	49	120	77	85	11
		Percent	14.7	33.9	19.8	23.7	7.8
2	My organization ensure people are competent to analyze and evaluate data as needed	Frequency	40	120	77	85	11
		Percent	12	36	23.1	25.5	3.3
3	Appropriate statistical quality tools are used to gather data on input , process, and output phases to facilitate appropriate decision making	Frequency	40	121	88	68	16
		Percent	12	36.3	26.4	20.4	4.8
4	Data collection methods used ensured data are accurate, reliable, timely and valid	Frequency	37	154	66	65	11
		Percent	11.1	46.2	19.8	19.5	3.3
5	Data on quality of product and processes are made readily available for decision making	Frequency	42	138	74	69	10
		Percent	12.6	41.4	22.2	20.7	3.1
6	Obsolete documents were dealt with a manner that does not confusion with new versions	Frequency	39	143	77	69	5
		Percent	11.7	42.9	23.1	20.7	1.5
7	When process are changed as a result of preventive and corrective actions , the quality manual is immediately updated	Frequency	25	146	66	86	10
		Percent	7.5	43.8	19.8	25.8	3
8	My organization makes decision and take action based on evidence, balanced with experience and intuition.	Frequency	19	131	94	85	4
		Percent	5.7	39.3	28.2	25.5	1.3

Source: Own computation based on data collected (SPSS result)

According to data collected from respondent all them believes that 33.9% and strongly agree with 14.7% MSF determine, measure and monitor key indicator to demonstrate the organizations performance, ensure people are competent to analyze and evaluate data as needed agree with 36%, Appropriate statistical quality tools are used to gather data on input, process, and output phases to facilitate appropriate decision making agree with 36.3%,

46.2%, the respondent further noted that Data collection methods used ensured data are accurate, reliable, timely and valid, Data on quality of product and processes are made readily available for decision making agree with 41.4% and strongly agree with 12.6%, Obsolete documents were dealt with a manner that does not confusion with new versions agree 42.9% and strongly agree with 11.7%, When process are changed as a result of preventive and corrective actions, the quality manual is immediately updated agree with 43.8% , organization makes decision and take action based on evidence, balanced with experience and intuition agree with 39.3%. data is important tools for analysis and investigation of organizational performance. This finding agree with (ISO, 2009) which says that application decision making Principle of factual approach to decision making typically leads to ensuring that data and information are sufficiently accurate and reliable, and to making data accessible to those who need them. The application of this principle also leads to “analysing data and information using valid methods, and making decisions and taking action based on factual analysis, balanced with experience and intuition”

4.2.7 Process Approach

According to (ISO 9001:2008 clause 1) the process approach includes establishing the organization’s processes to operate as an integrated and complete system. Quality management systems consist of several different processes working together. Appoint people to develop and oversee these processes to be effective. Ensure that everybody understands the objectives and knows what the end result should be. Share information to help the continual improvement of your quality management. The process approach aims to provide consistent and predictable results. Consistency enhances customer confidence in your ability to deliver.

Table 4.9 9Quality Management system Practice in process approach perspective

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	Efforts have been made to focus on organizational processes than functional	frequency	12	60	92	123	46
		Percent	3.6	18	27.6	36.9	13.8
2	The management established authority , responsibility, and accountability for managing process	frequency	12	61	63	145	52
		Percent	3.6	18.3	18.9	43.5	15.6
3	Departments reach shared decision than independent actions	frequency	12	75	68	156	22
		Percent	3.6	46.4	20.4	22.5	6.6
4	The organization manages process and their interrelations as a system to achieve the organization quality objectives effectively and efficiently,	frequency	7	141	44	130	11
		Percent	2.1	42.3	13.2	39	3.3
5	All departments understand the effect of their actions on other departments and do their activities taking this in consideration	frequency	13	63	67	161	29
		Percent	3.9	48.3	20.1	18.9	8.7
6	My organization manage risks that can affect outputs of the processes and overall outcome of the quality management system	frequency	19	83	58	129	44
		Percent	5.7	24.9	17.4	38.7	13.2
7	My organization ensure the necessary information is available to operate and improve the processes and to monitor , analyze and evaluate the performance of the overall system	frequency	19	83	58	129	44
		Percent	5.7	24.9	17.4	38.7	13.2

Source: Own computation based on data collected (SPSS result)

At the Metahara Sugar plantation and production process, the company seems to be very efficient. It neither over produces nor over processes the production of sugar (Desta A 2014) but, As the above table 4.92 indicates the most frequently given response by the respondents regarding the process approach in Sugar estate “I disagree response” indicating that these indicators of employees are poor. Its negative effect is clearly seen on the above table.

Majority of respondent satisfy with 48.3% All departments understand the effect of their actions on other departments and do their activities taking this in consideration, Departments reach shared decision than independent actions agree with 46.2%, The organization manages process and their interrelations as a system to achieve the organization quality objectives effectively and efficiently agree with 42.3%, management established authority, responsibility, and accountability for managing process agree with 43.5%.all department in MSF work as team especially after kaizen implementation. Structurally department under agricultural operation one member, factory and ethanol operation one team etc. one department effectively work for the support of other. land preparation team prepare land with standard set in SOP of MSF, transfer with Acceptance of plantation department. Plantation department manage sugarcane on farm and make ready for harvesting for factory. The harvesting department harvest dry cane for factory with optimum dry period and acceptable juice parameter.This all activity done sequentially with acceptable standard set by research which again use as acceptance and reject criteria for each department. Thus all departments know well its action affect other department and they share team work for common objectives of sugar production. All activity of the organization is processed based Starting from land preparation to bagging of sugar and deliver to customer. For this assurance all employees are do their job accordingly to sustain and for existence.

On the other hand 36.9% respondents dissatisfy that Efforts have been made to focus on organizational processes than functional, 38.7 %, organization ensure the necessary information is available to operate and improve the processes and to monitor , analyze and evaluate the performance of the overall system, organization manage risks that can affect outputs of the processes and overall outcome of the quality management system disagree with 38.7%.

Figure4. 2 20 years Sugar produced data in sugar factory

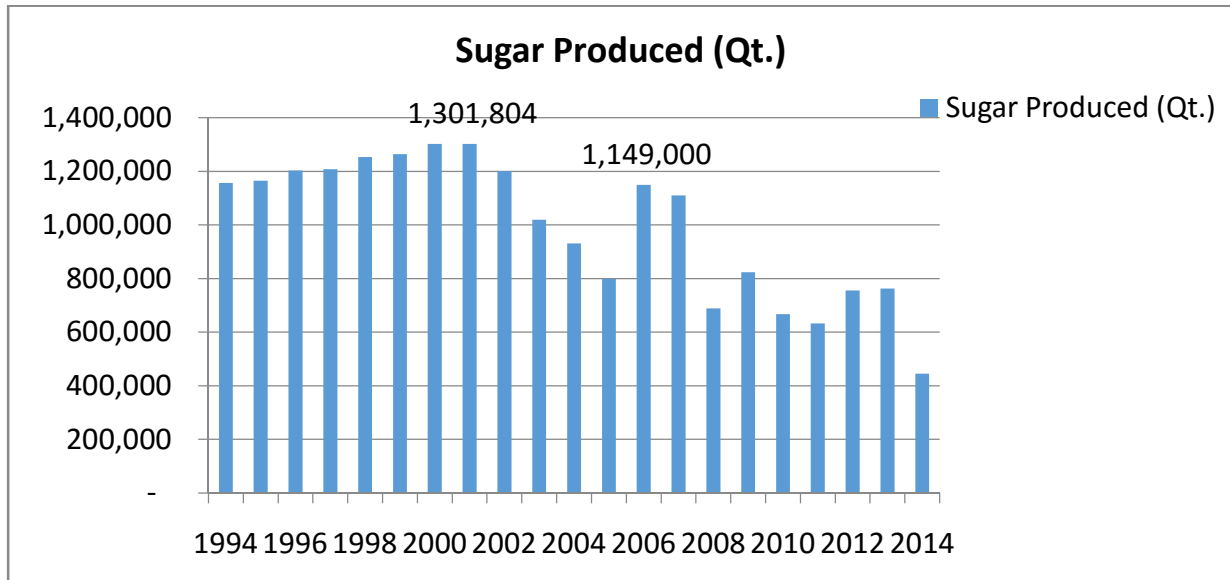
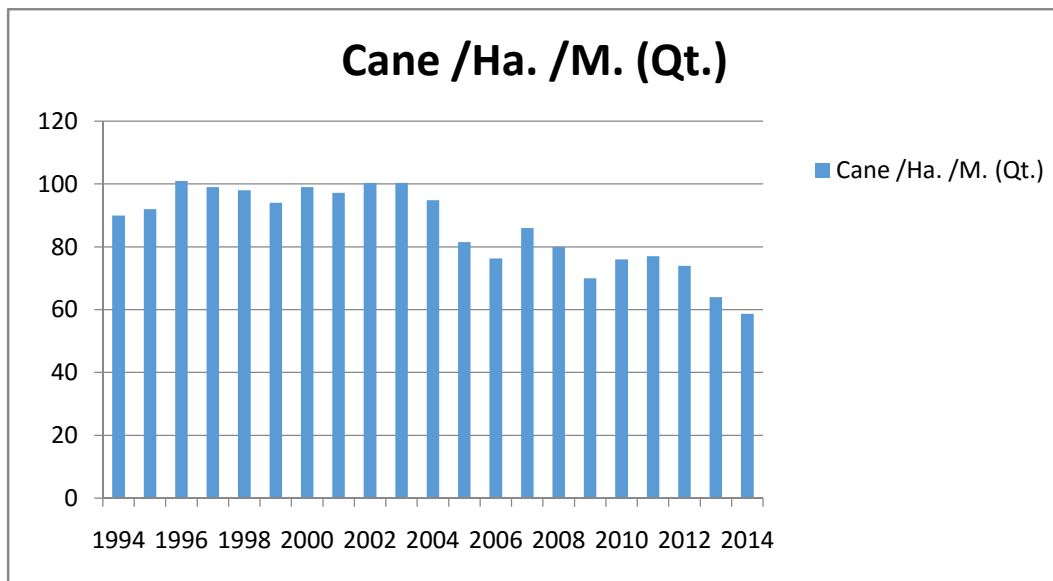


Figure 3.4. Cane produced per hectare per month per Quintals



Source: data from Metahara Sugar Factory Planning 2014 E C

As you see above figure 4.4 and 4.5 production is decreased in the factory. During implementation Of ISO 2008 at production year of 2008/2009 the production of sugar drastically increase and reach 130,266.1 tons of sugar. It is golden time for Metahara Sugar factory from 2007/2008-2011/2012.kaizen was implemented in 2013/2014. Reform of management was done in year of 2005 EC with reform kaizen was implemented.

All principles of six sigma, lean manufacturing rule was established. Kaizen team was organized and every thing was done with quality by maintaining standard. on job training, motivational training, empowerment of employee who implement kaizen, whom avoiding excess production, over motion, production without non conformity etc is encouraged. Kaizen techniques were adopted by the Metahara Sugar Factory because it was conducive to the re-creation of self-disciplined and self-innovating organizations. So, the concern that we have, is the Metahara Sugar Factory efficient and effective enough to utilize the following Kaizen strategic management initiatives, tools, and methods: a) the 5S housekeeping activities, b) lean management or waste management tools, c) just-in-time, and d) Total Productive Maintenance (TPM) (Desta 2014).

The quality of the sugar produced by the company has been reasonably acceptable to vendors. Though the vendors feel the sugar they have been buying from the factory has been good quality with minimum reject rates, the opinion of regular consumers has yet to be assessed by the marketing department to ascertain customers' opinions on the quality of the product, pricing, promotion and packaging. In addition, because of health reasons, consumers have been cutting back on the consumption of sugar products, so the company needs to increase the use of sugarcane for the production of ethanol and other products (Desta A 2014). But now production is decrease and production quality is poor thus customer is decreased.

At the Metahara Sugar Factory labor has become very efficient and posters are posted everywhere to motivate the workers. The company has effectively implemented Kaizen techniques using the participation of small groups of workers held every week to trouble shoot problems faced and to brainstorm to find solutions. As a result, the output of sugarcane plantation and sugar production have increased by 35% and 37% respectively (Desta A 2014). As indicated on above table sugar production is decreased to 762.5Qt/ha. So it need to rehabilitate the system with quality management system to boost the production and sugar productivity.

4.3 Challenges in implementing QMS

Implementing and maintaining a Quality Management System (QMS) can be quite a challenge. It's not always easy to find the information, method, person or time to implement the QMS that best suits your needs.

Table 4.3 Challenge of Quality Management Practice in Metahara Sugar Factory

SN		Rate	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	My organization has Lack of available quality system documentation	Frequency	42	93	72	69	57
		Percent	12.6	20.7	21.6	27.9	17.1
2	Employee has Lack of understanding of the process requirement	Frequency	16	111	80	94	32
		Percent	4.8	28.2	24	33.3	9.6
3	High cost to implement QMS	Frequency	32	96	42	140	23
		Percent	9.6	28.8	12.6	42	6.9
4	Lack of planning , assurance and control of QMS	Frequency	28	131	57	105	12
		Percent	8.4	39.3	17.1	31.5	3.6
5	Lack of QMS exposure	Frequency	40	76	88	113	16
		Percent	12	22.8	26.4	33.9	4.8
6	Lack of continuous professional development	Frequency	40	118	62	106	7
		Percent	12	35.4	18.6	31.8	2.1
7	Lack of documentation of suppliers, materials, and services	Frequency	30	115	47	129	12
		Percent	9	34.5	14.1	38.7	3.6
8	Lack of awareness and insufficient Knowledge of employees about quality programs	Frequency	51	102	39	130	11
		Percent	15.3	30.6	11.7	39	3.3
9	Lack of support from the top management	Frequency	69	122	61	73	8
		Percent	20.7	36.6	18.3	21.9	2.4
10	Lack of understanding in the QMS	Frequency	50	94	80	102	7
		Percent	15	28.2	24	30.6	2.1
11	Lack of financial resources	Frequency	64	127	47	81	14
		Percent	19.2	38.1	14.1	24.3	4.2
12	Lack of competent human resources	Frequency	34	94	56	130	19
		Percent	10.2	28.2	16.8	39	5.7
13	Lack of internal and external audit	Frequency	47	111	75	93	7
		Percent	14.1	33.3	22.5	27.9	2.1
14	Lack of support from Government	Frequency	74	138	60	59	2
		Percent	22.2	41.4	18	17.7	6

The second objective of the study was investigated the challenges of QMS in Metahara Sugar Factory. For each of the questions explored in the challenges, the scores of the responses were summed up and divided by the total number of respondents to give a mean score of the response; responses of respondent indicate that most with “I agree response”. This indicates there is many challenges that enhance the decline of management system in the factory. Practically the sugar estate practice ISO 9001, kaizen, Balanced score card. It benefited by implementing this management system in production and productivity. Implementing QMS mean implementing standard based on research. When you made standard for your work you maintain what you want. Thus QMS in Metahara has significant change during implementation but cannot progressive due to this indicated challenge. Majority of respondent (39.3%) believes that Lack of planning , assurance and control of QMS critical issue in MSF. poor planning makes the factory to lose its peak practice of QMS. the respondent further noted that ,Lack of continuous professional development agree 35.4%,Lack of support from the top management agree 36.6%,Lack of financial resources agree 38.1%,Lack of support from Government agree 41.4%,Lack of internal and external audit agree 33.3%.The listed issues are the bottleneck of MSF's quality management practice. Since the installation of QMS, the factory has benefited in many ways, including tangible resources. Sugar production and sugar cane productivity per hectare are increased. To fully restore QMS practice, the government should provide financial and security support. The absence of senior management support has an impact on QMS practice. From the respondents' perspective and knowledge, a lack of planned QMS poses a hurdle to QMS practice. Furthermore, government backing, a lack of training for professionals, and a lack of compliance auditing, both internal and external auditing, all have an impact on and delay the practice's continuation in the business. QMS cannot be addressed without the commitment of high management or a leader. This finding contradict with Mohanty and Lakhe,1998 observe that companies that can create a committed leadership to bring about behavioral changes for revitalization within the organization, in turn can show the most dramatic improvements. Committed leaders can engage employees“ emotions, cognitions and actions to realize that TQM is not a one-time event, but a set of on-going processes in the entire value chain of an enterprise.

On the other hand the respondent dissatisfaction with organization has Lack of available quality system documentation disagree 27.9%, Employee has Lack of understanding of the process requirement disagree 33.3%, High cost to implement QMS disagree 42%,Lack of QMS exposure disagree 33.9%,Lack of documentation of suppliers, materials, and services disagree 38.7%,Lack of awareness and insufficient Knowledge of employees about quality programs disagree 39%,Lack of understanding in the QMS disagree 30.6% and Lack of competent human resources disagree 39%. As respondent believes MSF employee can understand process requirement, quality implementation does not cost high cost rather its benefit is high, majority of Employee has QMS exposure and awareness thus rehabilitation and planning for improvement in MSF has easy task.

The Factory is governed by government. Most input is supported from government. There is lack of input supply year to year. Absence of recommended input for production has great effect to sustain quality management system. This has direct effect in production and productivity. Top management is other issue in sustaining of quality management system. Without commitments of top management quality cannot assured in company or industry. Instability of management on position may disturb the system. few managers are committed to do ,the other is dormant , they no have plan, assurance and control system. They believe every employee committed to work and sustain quality system in their work. So they fail.

Additionally suggestion collected from respondent indicate there is information gap between leader and employees, political instability, commitment problems, Policy problems, social interaction problems, employee see QMS as task rather than system, lack of technology infrastructure, problems of corporation, employee recruitments problems. Especially political instability paved the way to damage sugarcane farm by cattle's. According report present on June 7/6/2022 presented for management team almost above 3400 ha damaged by cattles. This may affect future crop year of factory and its account about three month crushing capacity of factory. Increment of neighboring peoples and enhancement of peoples for farming is other serious issue for future of factory.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary of findings

- The study found that the majority of respondents believe MSF has a quality policy and that employees understand the policy and its objectives, which are communicated to all employees. Top management is actively involved in developing quality policies and objectives that align with business objectives. The hierarchy's authority and responsibilities are clearly defined and communicated. Top management takes the lead in guiding quality teams. Employees received the necessary quality policy and objectives training. The organization has a clear quality policy, and its employees are aware of its goals. The majority of respondents believe that top management is in charge of QMS. Employees understand quality management practices. However, Top management has not demonstrated a commitment to quality across the organization. Proportionate authority was delegated to act with accountability on planning, and resources were adequately allocated for QMS auditing. Top Management was personally involved in QMS implementation, maintenance, improvement activity, and outcome assessments. This means that the majority of respondents believe that top management is unconcerned about demonstrating QMS, planning, control, allocating resources for QMS maintenance and improvement, assessing outcomes and taking corrective action, and following up on implementation and improvement. The findings show that top management commitment, leadership to quality management system implementation, and improvement are lacking at Metehara Sugar Factory.
- Customer loyalty, handling, and monitoring customer satisfaction are all lacking, according to respondents. This means that they do not meet their customers' expectations in terms of production, sugar quality, service, and so on. Respondents, on the other hand, believe that the organization plans, designs, develops, produces, delivers, and supports goods and services to meet customer needs and expectations. They also believe that the organization is committed to customer retention by ensuring quality products. As indicated by the respondent, the organization intends to provide high-quality sugar to customers and is committed to keeping them as customers.

- ❖ MSF determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization and determine and prioritize interested party relationships that need to be managed, There is sharing of information between MSF and suppliers for mutual benefits, There are pre-established procedure to handle complaints with stakeholder,, actions do not harm the society and have smooth relation as a result, MSF uses quality as major criterion to choose suppliers for their products components ,prefers the suppliers to be QMS certified and establish relationships with customers and suppliers that balance short-term gains with long-term considerations respectively. This indicates that the company uses QMS as one of the criteria for selecting suppliers for product components such as sulfur, calcium carbonate (factory chemicals), fertilizer, agricultural chemicals, and so on. However, respondents are dissatisfied with Suppliers give priority to MSF even when materials are scarce in the market, and extends its good quality practices to its suppliers. MSF has positive relationships with its employees, stakeholders, neighboring communities or societies, and suppliers.
- ❖ 45.3% Respondent believe that Employees are made aware of the relevance of their activities and how they contribute to the achievement of the quality objectives of the organization, Employees take part in the formulation of strategic and operational plans All employees were trained for the work they perform before implementing the standard, Employees are encouraged to involve in improvement initiatives without fear,Employees are recognized for their contribution, Employees are empowered to make their own decisions as needed, MSF's core value is encouraging labor for their work, motivating, empowering, and informing employees to participate in the formulation of organizational strategy, operational plan (both on season and offseason plan), and budget preparation. It means that each department has finished its plan, budget, action plan, risk assessment plan, and so on, and that they are in charge of everything in the organization.
- ❖ But many respondent dissatisfaction Surveys conducted to assess employee's satisfaction, communication the results and take appropriate actions, Training on QMS was given periodically to fill gap in knowledge and skill of employees, There is open discussion and sharing of knowledge and experiences in the area of the QMS standard

Employees do their tasks efficiently with QMS quality initiatives implementation. MSF Employees are aware of the standards, but there is a consistent lack of QMS training. As a result, the company's production capacity is reduced. Many quality activities are avoided at the factory due to a lack of input and the use of old and outdated machinery and technology. This has another impact on the quality of sugar production.

- ❖ Majority of respondent are dissatisfaction for Sugar Production volumes have been increased, Machine utilization in terms of idle downtime is Reduced and Machine downtime has Reduced, Production of cane per ha is improved, Continual improvement projects are always promoted at all levels of the organization, Employees at all levels are educated and trained on how to apply basic tools and methodologies to achieve improvement objectives, Innovative ideas are encouraged and implemented for improvement, The quality manager ensures that the quality system is continually improved, Management does takes corrective actions based on reviews and follows up for the implementation of actions, Sufficient resources were often allocated for maintenance of quality system however, However, Many respondent agree on Employees are capable enough to successfully promote and complete improvement projects, The internal audit system is consistently conducted as planned and was productive ,Internal audits often come up with possible corrective actions or improvement proposals that fault finding.
- ❖ According to data collected from respondent all them believes that, MSF determine, measure and monitor key indicator to demonstrate the organizations performance, ensure people are competent to analyze and evaluate data as needed, Appropriate statistical quality tools are used to gather data on input, process, and output phases to facilitate appropriate decision making, respondent further noted that Data collection methods used ensured data are accurate, reliable, timely and valid, Data on quality of product and processes are made readily available for decision making ,Obsolete documents were dealt with a manner that does not confusion with new versions,

When process are changed asa result of preventive and corrective actions, the quality manual is immediately updated, organization makes decision and take action based on evidence, balanced with experience and intuition, data is important tools for analysis and investigation of organizational performance.

- ❖ Majority of respondent satisfy all departments understand the effect of their actions on other departments and do their activities taking this in consideration, Departments reach shared decision than independent, The organization manages process and their interrelations as a system to achieve the organization quality objectives effectively and efficiently, management established authority, responsibility, and accountability for managing process, all department in MSF work as team especially after kaizen implementation.

On the other hand respondents dissatisfy that Efforts have been made to focus on organizational processes than functional, organization ensure the necessary information is available to operate and improve the processes and to monitor , analyze and evaluate the performance of the overall system, organization manage risks that can affect outputs of the processes and overall outcome of the quality management system

- ❖ Majority of respondent believes that lack of planning , assurance and control of QMS critical issue in MSF. Poor planning makes the factory to lose its peak practice of QMS. The respondent further noted that, lack of continuous professional development, lack of support from the top management, lack of financial resources, and lack of support from Government, lack of internal and external audit. The listed issues are the bottleneck of MSF's quality management practice. Since the installation of QMS, the factory has benefited in many ways, including tangible resources. Sugar production and sugar cane productivity per hectare are increased. To fully restore QMS practice, the government should provide financial and security support. The absence of senior management support has an impact on QMS practice. From the respondents' perspective and knowledge, a lack of planned QMS poses a hurdle to QMS practice. Furthermore, government backing, a lack of training for professionals, and a lack of compliance auditing, both internal and external auditing, all have an impact on and delay the practice's continuation in the business. QMS cannot be addressed without the commitment of high management or a leader..
- ❖ On the other hand the respondent dissatisfaction with organization has Lack of available quality system documentation Employee has Lack of understanding of the process requirement High cost to implement QMSL ack of QMS exposure Lack of documentation of suppliers, materials, and services Lack of awareness and insufficient

Knowledge of employees about quality programs, Lack of understanding in the QMS and Lack of competent human resources, As respondent believes MSF employee can understand process requirement, quality implementation does not cost high cost rather its benefit is high, majority of Employee has QMS exposure and awareness thus rehabilitation and planning for improvement in MSF has easy task.

5.3 Conclusion

Based on the study's findings, the study found that the use of quality management systems practice had a beneficial impact on organizational performance but poor in its performance at Metahara Sugar Factory.

- The commitment of top management to create, implement, and continuously enhance its efficacy has had a negative impact on organizational QMS. It is also possible to conclude that poor leadership and resource allocation for quality management, as well as a lack of government support, have had a negative impact on organizational QMS at the Metahara sugar factory. However,
- There are still good employee quality initiatives, as well as understanding of quality policy, objectives, and value to the organization. It may be inferred that there is a favorable work environment in terms of health, safety, hygiene, and cleanliness, and that this has had an impact Metahara Sugar Factory is dedicated to developing the desired product based on client and statutory criteria, which has benefited the organization's quality management system. However, the difficulty disrupted the factory's quality management system and reduced plantation sugar production. This may be minimized by doing continuous research to improve cane quality, plantation sugar to desired standards, and creating white brand sugar, which has increased product quality and hence sugar sales.
- It may also be argued that Metahara Sugar Factory's continuous measurement, analysis, and development of organizational systems has resulted in increased organizational performance. Deviations from expectations are addressed through quality audits and the implementation of corrective actions in order to eliminate nonconformity occurrences.

- Environmental elements such as competition, technology, politics, economics, and social issues all have an impact on the factory's quality system. Instability in the region as a whole makes maintaining standards difficult due to a lack of input for sugar production.
- The usage of outmoded technology, absence Quality planning, control, barriers in improvement, lack of top management support, and government support, financial resource at Metahara was clearly identified as a barriers to QMS practice.
- The study therefore, the study concludes that these environmental issues must be addressed with the implementation of quality management systems in order to improve efficiency and effectiveness in Ethiopia's sugar sector in general, and in Metahara Sugar Factory in particular. The study's findings also lead to the conclusion that Ethiopia's sugar industry has a future and should not be condemned, but the government should address serious issues aside from the sugar industry's production loss and take necessary measures to compete in the global market. Outdated technology, a lack of input for production, competent human resources, financial resources, management selection methods, top management commitment, government support, a lack of quality audits, and security issues are the key factors affecting quality management systems practice in industries. As a result, improving best practices and avoiding those challenges may solve the production problem and putting the industry in a more acceptable and competent position which become proud of nation ins sugar and ethanol production.
- The findings show that in the case of Metehara Sugar Factory, top management commitment, leadership to quality management systems implementation, improvement should rehabilitate the system and making again MSF proud of nation in sugar production as of ISO year 2003/2004.
- As respondents indicate, customer loyalty, handling, and monitoring customer satisfaction are all inadequate. This means they do not satisfy their customers in terms of production, sugar quality, service, and so on
- The core value that MSF strives to maintain for its employees is encouraging labor for their work, motivating, empowering, and informing the employee to participate in the formulation of organizational strategy, operational plan (both on season and offseason plan), and budget preparation.

- It means that each department has completed its plan, budget, action plan, risk assessment plan, and so on, and that they are responsible for everything in the organization
- MSF Employees are aware of the standards, but there is a consistent lack of QMS training. As a result, the company's production capacity is reduced. Many quality activities are avoided at the factory due to a lack of input and the use of old and outdated machinery and technology. This has another impact on the quality of sugar production.
- MSF employees understand quality policy and objectives, and they work to make the factory known throughout the country for ISO 9001 implementation and kaizen. This is a valuable asset that can be used to improve MSF further. Internal factory audits were performed, including financial and performance audits, to identify potential solutions. This allows MSF to have a good working culture and serves as a model for other sugar factories in Ethiopia, particularly in terms of documentation and recording.
- All department in MSF work as team especially after kaizen implementation. Structurally department under agricultural operation one member, factory and ethanol operation one team etc. one department effectively work for the support of other. land preparation team prepare land with standard set in SOP of MSF, transfer with Acceptance of plantation department. plantation department manage sugarcane on farm and make ready for harvesting for factory. The harvesting department harvest dry cane for factory with optimum dry period and acceptable juice parameter. This all activity done sequentially with acceptable standard set by research which again use as acceptance and reject criteria for each department. Thus all department know well its action affect other department and they share team work for common objectives of sugar production.

5.4 Recommendations

The main objective of the study was to the quality management systems practice and challenge in Ethiopian sugar industry.

Based on the findings, the researcher recommends that:

- top management need to continue offering full support to quality management systems practice if positive results are to be obtained.
- Positive and initiatives of employee of MSF should encouraged for QMS implementation and practice.

- The researcher also recommends that proper resource management, financial support, continues, improvement must be put in place to realize positive increase in organizational quality management system. Organizations should do this by ensuring provision of adequate resources, training of human resource and ensuring there is conducive work environment and financial support. Organizations should ensure that their products and services are based on customer requirements and that there are proper channels of communication and feedback with all stakeholders. The researcher recommends that measurement, analysis and improvement of processes should be continually carried out and corrective and preventive actions taken up. The researcher recommends that organizations should find means of reducing marginal costs of production such as investing in new machinery and equipment and use modern technology in production among others. This should be done together with implementation of quality management systems to enhance efficiency.
- The researcher finally recommends that organizations should take note and take corrective action for environmental factors or challenges that influence performance of quality management system such as political, economical, social, human resource, audit technological and legal factors and exploit them depending on the strengths they offer to the organization and control and minimize them depending on the threats they pose to organizational performance and introducing Environmental, Social and Governance (ESG) system may boost industry to its normal crushing progress.

5.6 Suggestions for Further Studies

The study only examined the quality management systems practice and challenges in Metahara Sugar Factory. Further research can be carried out to expand the research scope to other sugar companies for the purpose of comparison and allow for generalization of findings which can be applied by Sugar industry to enhance efficiency in operations. Further study should be carried out to establish quality management system and its effect on production and productivity and relation of standard and quality management system.

6. REFERENCES

- Abera Degefa, Mengistu Bosie, Yohannis Mequanint, Endiris Yesuf, and Teshome, Z., 2016. Determination of Crop Water Requirements of Sugarcane and Soybean Intercropping at Metahara Sugar Estate. *Advances in Crop Science and Technology*,4(5):1-4
- Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International Journal of Productivity and Performance Management*, 63, 308–323. doi:10.1108/ijppm-01-2013-0008
- Ao, J. (2016). *Process Approach*. Standards Press of China.
- Asayehgn Desta 2014 The Art of the Kaizen Approach for Sugar Production in Ethiopia: Lessons from the Metahara Sugar Factory,*international Journal of Operations and Logistics Management* Volume: 3, Issue: 3, Pages: 212-221
- Asayehgn Desta, 2014 , The Art of the Kaizen Approach for Sugar Production in Ethiopia: Lessons from the Metahara Sugar Factory *International Journal of Operations and Logistics Management* Volume: 3, Issue: 3, Pages: 212-221
- ASQ, 2013a. Glossary: Q. American Society for Quality. Available at: [Accessed 18 April 2013].
- ASQ, 2013a. Glossary: Q. American Society for Quality. Available at: [Accessed 18 April 2013].
- Behnam Neyestani,(2016), Electiveness of Quality Management System (QMS) on Construction Projects, Department of Civil Engineering, De La Salle University, Manila, Philippines.
- Birhane F (2010). “Implementation of Total Quality Management (TQM)in the Educational Sector: Case Study in Higher EducationInstitutions (HEIs)”, Unpublished M.Sc. thesis, Addis AbabaUniversity, Addis Ababa, Ethiopia.
- Birhanu Beshah 2013 Quality management practice in Ethiopia *African Journal of Business Management* Vol. 8(17), pp. 689-699
- Cavanagh, R. R., Neuman, R. P., Pande, P. S., 2000. *The Six Sigma Way*. McGraw-Hill.
- Cooper-Thomas, H. D., Paterson, N. L., Stadler, M. J., & Saks, A. M. (2014). The relative importance of proactive behaviors and outcomes for predicting newcomer learning, well-being,

and work engagement. *Journal of Vocational Behavior*, 84, 318–331.
doi:10.1016/j.jvb.2014.02.007

Crawford, J. (2002). *Project Management Maturity Model Providing a Proven Path to Project Management Excellence*, Project Management Solutions, Inc. Havertown, Pennsylvania, New work.

Dagne B (2008). “Quality Engineering on Ethiopian Pulp and paperS.C”, Unpublished M.Sc. Project, Addis Ababa University, AddisAbaba, Ethiopia.

Daniel Amare (2010) *The Impact of ISO 9000 Certification on Quality Management Practices in EFFORT Corporate ISO 9000 Certified Industries*, MBA Thesis, Unity University, Addis Ababa.

Degu, Berhanu. "Assessment Of Quality Management System Practices In Ethiopia Pharmaceuticals Manufacturing Sc (Epharm)." Phd Diss., St. Mary's University, 2021.

Deming, W. E. (1986). *Out of the Crisis*, Cambridge, Mass: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Dent, F. E. (2006). *Umeće liderstva, Praktični saveti i tehnike za lidere na svim organizacionim nivoima – strateškom, operativnom i timskom – kako na ljude uticati, pokrenuti ih i pridobiti za promenu i ostvarenje ciljeva*, Džepna knjiga. Beograd: Valera

Desta, A. et al (April 2014) —analysis of kaizen Implementation in Northern Ethiopia's Manufacturing Industries. *International Journal of Business and Commerce*. Vol. 3, No. 8, pp. 39-57.

Douglas, L. (2003). *The expectation gap, nutrition & food science. Attitudes to service quality*, Vol.33 number 4 p.165-172.

Dowling, A. (2002). *Customer Relationship Management*. 11th Ed. Prentice Hall.

Eldor, L., & Harpaz, I. (2015). A process model of employee engagement: The learning climate and its relationship with extra-role performance behaviors. *Journal of Organizational Behavior*, 37, 213–235. doi:10.1002/job.2037

Emrouznejad, A., Anouze, A. L., & Thanassoulis, E. (2010). A semi-oriented radial measure for measuring the efficiency of decision making units with negative data, using DEA. *European*

- Journal of Operational Research, 200, 297–304. doi:10.1016/j.ejor.2009.01.001 Farndale, E., & Murrer, I. (2015). Job resources and employee engagement: A cross-nat
- Ermias A (2009). “Quality in Addis Ababa Referral Hospital”, Unpublished M.Sc. Project, Addis Ababa University, Addis Ababa, Ethiopia
- Esayas Tena, 2014. Exploration and Collection, Characterization, Genetic Diversity Analysis and Association of Traits for Yield and Yield Components of Sugarcane (*Saccharum* spp.) in Ethiopia. Master Thesis, Haramaya University, Dire Dawa, Ethiopia.
- Freiesleben, J. (2005) The economic effects of quality improvement, *Total Quality Management*, 16(7), pp. 915-922.
- Fudge, R.S. and Schlacter, J.L. (1999), “Motivating employees to act ethically: An expectancy theory approach”, *Journal of Business Ethics*, Vol. 18 No. 3, pp. 295-304.
- Goeff, T., (2001). *Six Sigma: SPC and TQM in manufacturing and services*. Hampshire: Gower Publishing Limited.
- Heinrich, B. (2005). Transforming strategic goals of CRM into process goals and activities. *Business Process Management Journal*, 11(6), 709-723.
- Holpp, L., Pande, P., 2002. *What is Six Sigma?* McGraw-Hill.
- Hussein ;;; (2017), Challenges and Prospects of Implementing ISO 9001:2015 in Lebanese Higher Education Institutions. ISSN 2422-8397, Vol.33, p. 43.
- ISO 19011:2018, Third Edition: Guidelines for auditing management systems paperbacks-July, 2018
- ISO 9001:2015. Quality management systems. Requirements.
- ISO/FDIS 9000 (2000). Quality Management Systems – Fundamentals and Vocabulary. ISO
- ISO/FDIS 9001 (2000). Quality Management Systems – Requirements. ISO
- Jarmila ŠALGOVIČOVÁ, Matej BÍLÝ 2009 people involvement and their competence in quality management systems institute of industrial engineering, management and quality, faculty of materials science and technology, slovak university of technology, trnava, *trenčín university ad trenčín,

- Jelalo M (2009). “Business Process Reengineering towards the Quality of TVET Case on Selected TVET colleges in Addis Ababa”, Unpublished M.Sc. Project, Addis Ababa University, Addis Ababa, Ethiopia. Marta G (2010). “Quality Management system in Addis Ababa Private Hospitals”, Unpublished M.Sc. thesis, Addis Ababa University, Addis Ababa, Ethiopia.
- Juran, J.M. (1992) *Juran on quality by design: the new steps for planning quality into goods and services*, The Free Press.
- Karakostas, B., Kardaras, D., et al. (2005). The state of CRM adoption by the financial services in the UK: an empirical investigation. *Information and Management*, 42, 853-863.
- Karanges, E., Johnston, K., Beatson, A., & Lings, I. (2015). The influence of internal communication on employee engagement: A pilot study. *Public Relations Review*, 41, 129–131. doi:10.1016/j.pubrev.2014.12.003
- Kenya Institute of Management (2009), *Total Quality Management, Theory, Concepts and Practice*, Macfactoryan Kenya Publishers, pp.189-207.
- Kuei, C., Madu, C. N. & Lin, C. (2001) The relationship between supply chain quality management practices and organizational performance, *International Journal of Quality & Reliability Management*, 16(8), pp. 864-872.
- Levinson, W. A., Rerick, R. A., 2002. *Lean Enterprise: A Synergistic Approach to Minimizing Waste*. ASQ Quality Press.
- Linderman, K.R., Schroeder, G., Zaheer, S., Liedtke, C., Choo, A.S. (2004) Integrating quality management practices with knowledge creation processes, *Journal of Operations Management*, 22, pp. 589-607.
- Marta G (2010). “Quality Management system in Addis Ababa Private Hospitals”, Unpublished M.Sc. thesis, Addis Ababa University, Addis Ababa, Ethiopia
- Mihret G (2008). “Service Enhancement on Spa Service Enterprise”, Unpublished M.Sc. Project, Addis Ababa University, Addis Ababa, Ethiopia. Negalign A (2011). “Quality Management Practices: the case of Harar Bereewery Share Company”, Unpublished M.Sc. thesis, Addis Ababa University, Addis Ababa, Ethiopia.

- Mohanty, R., and R. Lakhe. Factors Affecting TQM Implementation: Empirical Study in Indian Industry. *Production Planning & Control*, 1998; 9(5): 511-520.
- Negalegn Alemu 2011 MSc thesis unpublished School of Graduate Studies of Addis Ababa University
- Negi. (2009). Determining customer satisfaction through perceived service quality. *International journal of mobile marketing* , Vol.4,number 1:p.31-38.
- Netsanet J (2008). “Design a Systematic Acceptance Sampling Plan to Addis Abba Bottle and Glass Company”, Unpublished M.Sc. Project, Addis Ababa University, Addis Ababa, Ethiopia
- Northous, P. G. (2009). *Lyderystès teoriija ir praktika*. Kaunas: Poligrafija ir informatika.
- Ogany, D. A. (2017), Factors Influencing Implementation of QMS in Technical Vocational Education and Training Institutions in Nairobi, Kenya. 68-69.
- Osman, A. M. (2016). Barriers affecting of the implementation of Quality management System. 10-11.
- Prabowo. A (2009). “Sistem Manajemen HACCP. Jakarta: Bumi Aksara. Tjiptono, F.
- Radoica Luburić 2015 Quality Management Principles and Benefits of their Implementation in Central Banks ,*Journal of Central Banking Theory and Practice*, 2015, 3, pp. 91-121
- Rahim M.A. and Whalen, MJ. (1994),” Common barriers to implementation and development of a TQM program,” *Industrial Management*, Vol.36 No., pp. 19-24.
- Salegna, G. and F. Fazel. Obstacles to Implementing Quality. *Quality Progress*, 2000; July: 53-57.
- Samson M (2008). “Road Construction Equipment Management in Ethiopia – With Special Focus on Sunshine Construction Plc”, Unpublished M.Sc. Project, Addis Ababa University, Addis Ababa, Ethiopia
- Samuel dan Zulkrain (2011). “Pengaruh Sistem Manajemen Mutu Iso Terhadap Kinerja Karyawan Melalui Budaya Kualitas Perusahaan (Studi Kasus PT. Otsuka Indonesia Malang”. *Jurnal Manajemen dan Kewirausahaan*, VOL.13, NO. 2, September 2011: 162-176.
- Santos-Vijande, M.L. and Álvarez-González, L.I. (2007), “Innovativeness and organisational innovation in total quality oriented firms: the moderating role of market turbulence”, *Technovation*, Vol. 27 No. 9, pp. 514-532.

- Sebastianeli. R. and Tamimi, N (2003), "Understanding the obstacles to TQM success", *Quality Management Journal*, Vol. 10 No.3, pp45-55.
- Shewit W (2009). "Service Quality Improvement in Tikur Anbessa General Specialized Hospital", Unpublished M.Sc. thesis, Addis Ababa University, Addis Ababa, Ethiopia.
- Soltani, E. (2005) Top management: a threat or an opportunity to TQM?, *Total Quality Management*, 16(4), pp. 463-476.
- Sousa, R., Voss, C.A., 2002. Quality management re-visited: a reflective review and agenda for future research. *Journal of Operations Management* 20, 91–109
- Tessema B (2008). "Quality Related Problems in Large Ethiopian Manufacturing Firms; Implications for Competency", *South African Journal of Industrial Engineering South Africa*
- Tsai, P.C.F., Yen, Y.F., Huang, L.C. and Huang, C. (2007), "A study on motivating employees' learning commitment in the post-downsizing era: Job satisfaction perspective", *Journal of World Business*, Vol. 42 No. 2, pp. 157-169.
- Wicks, A.M., & Roethlein, C.J. (2009). A satisfaction-Based definition of quality . *Journal of Business & Economics Studies* , Vol.15, No.1, spring 2009, 82-97.
- Zairi, M. *Total Quality Management Sustainability*. *The International Journal of Quality & Reliability Management*, 2002; 19(5): 502-507.
- Xie, J. H. (2012). *ISO/TS 16949 Quality Management System in automobile industry: 2009 New Implementation* (Jianhua Xie ed.). China Economic Publishing House.
- Yahaya, R., & Ebrahim, F. (2016). Leadership styles and organizational commitment: literature review. *Journal of Management Development*, 35(2), 190–216.
- Zahra, S.A. (1999), "The changing rules of global competitiveness in the 21st century", *The Academy of Management Executive*, Vol. 13 No. 1, pp. 36-42.
- Zhihai Zhang, *Implementation of TQM, An empirical study of Chinese manufacturing firms*, Labyrinth publication, 2000

APPENDIX

Harambee University

College of Business and Economics

Department of Project Management

Questionnaire to be filled by Metahara Sugar Factory employees

Dear respondent,

I would like to extend my deep appreciation if you could spend a few minutes answering the attached questionnaire as truthfully as possible and your response will be highly confidential.

This questionnaire is developed to conduct a M.Sc. thesis research on Quality Management System practice and challenge in Ethiopia Sugar industry: Case of Metahara Sugar Factory.

I would also like to assure you that all responses given will be treated as **STRICTLY CONFIDENTIAL!!** And used for academic purposes only. If you need further clarification, to ensure these you are not expect to write your name and your questionnaire will be given unique code , which will be used during analysis.

Thank you for your kind cooperation.

Sincerely,

Muktar Hussien

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Email: emuktar8899@gmail.com

N.B: Please give answers in the spaces provided and matches your responses to the questions where applicable

Section 1: Variables of the Respondents

Please attempt to answer all the questions and tick one appropriate answer that best suits your perspective for each statement.

A. Background information

1.1	Your Gender	F <input type="checkbox"/>			M <input type="checkbox"/>	
1.3	Your Age	<24 <input type="checkbox"/>	25-35 <input type="checkbox"/>	36-45 <input type="checkbox"/>	46-55 <input type="checkbox"/>	>55 <input type="checkbox"/>
1.5	Education Level	Certificate-Diploma <input type="checkbox"/>		Degree <input type="checkbox"/>	Master and above <input type="checkbox"/>	

Part II. Please put a tick mark (√) in the brackets that best describe your answer.

A. LEADERSHIP (adapt from Muachew H PhD candidate)

To what extent is the following statements are appropriate on top management commitment in your organization? Please indicate below strongly you agree or disagree with the following statements in your organization. (Tick one: strongly agree=5, Agree =4 Neutral=3, Disagree =2 and strongly Disagree=1

No	Elements of leadership	5	4	3	2	1
1	My organization has clear quality policy.					
2	Top management actively engages in setting quality policy and objectives in conjunction with business goals.					
3	Quality policy and objectives are communicated to all employees from the very beginning down the hierarch.					
4	Top management has demonstrates organization-wide commitment to quality.					
5	Authorities and responsibilities are well defined and communicated down the hierarchy					
6	Management takes leading positions in guiding quality teams.					
7	Employees were provided with the necessary training on quality policy and objectives.					
8	Proportionate authority was delegated to act with accountability on planning and assurance					
9	Resources were sufficiently allocated for the Auditing of QMS					
10	Top management personally involved in QMS implementation, maintenance, improvement activity and outcome assessments.					

11	Top management makes prompt decisions on quality issues and engages in follow-up for their implementations.					
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B. CUSTOMER FOCUS

The following statements are coined to find out to what extent they true about your organization’s practice on “Customer Focus”. Please indicate how strongly you agree or disagree with the statements. (Tick one: strongly Agree =5, Agree=4, Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of Customer Focus	5	4	3	2	1
1	My organization carries out market studies to determine its customer needs and wants.					
2	My organization plan, design, develops, produce, deliver and support goods and services to meet customer needs and expectations.					
3	Processes and activities of my organization are designed to increase customer satisfaction levels.					
4	My organization has a system for consistent tracking of complaints and procedures for all cases of complaints.					
5	Customer needs are reviewed regularly to meet changing customer preferences and expectations.					
6	My organization measures and monitors customer satisfaction regularly and take appropriate actions.					
7	My organization actively manages relationships with customers to achieve sustained success.					
8	My organization is committed to customer retention by ensuring quality products.					
9	Production is more aligned with customer requirements					
10	The organization is geared towards putting the customer first as opposed to before					
11	Customer complaints have reduced					

C. People engagement

The following statements are meant to verify personnel performing the work which affect conformity to product requirements, where the personnel is expected to be competent on the basis of appropriate education, training, skills and experience. Express your level of agreement or disagreement for the following statements. (Tick one: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of People engagement	5	4	3	2	1
1	Employees are made aware of the relevance of their activities and how they contribute to the achievement of the quality objectives of the organization.					
2	Employees take part in the formulation of strategic and operational plans.					
3	All employees were trained for the work they perform before implementing the standard.					
4	Training on QMS was given periodically to fill gap in knowledge and skill of employees.					
5	There is open discussion and sharing of knowledge and experiences in the area of the QMS standard.					
6	Employees are encouraged to involve in improvement initiatives without fear.					
7	Employees are recognized for their contribution.					
8	Employees are empowered to make their own decisions as needed					
9	Surveys are conducted to assess employee's satisfaction, communication the results and take appropriate actions.					
10	Employees do their tasks efficiently with QMS quality initiatives implementation					

D. Relationship Management

The following statements are developed to evaluate the extent to which the organization creates smooth relationship with various partners. Express your level of agreement or

disagreement for the following statements. (Tick one: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of Relationship Management	5	4	3	2	1
1	My organization determine relevant interested parties (such as suppliers, customers, employees, and society as a whole) and their relationship with the organization.					
2	My organization determine and prioritize interested party relationships that need to be managed.					
3	My organization uses quality as major criterion to choose suppliers for their products components.					
4	Our organization prefers the suppliers to be QMS certified.					
5	Suppliers give priority to our organization even when there is shortage of materials in the market.					
6	There is sharing of information between my organization and suppliers for mutual benefits.					
7	There are pre-established procedure to handle complaints with stakeholders.					
8	My organization extends its good quality practices to its suppliers.					
9	My organizations establish relationships with customers and suppliers that balance short-term gains with long-term considerations.					
10	My organization's actions do not harm the society and have smooth relation as a result.					

E. Quality system improvement

The following statements are coined to evaluate the extent to which the organization has engaged in improvement activities. Express your level of agreement or disagreement for the following statements. (Tick one: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of Relationship Management	5	4	3	2	1
1	Sugar Production volumes have been increased					
2	Machine utilization in terms of idle downtime is Reduced and Machine downtime has Reduced					
3	Production of cane per ha is improved					
4	Continual improvement projects are always promoted at all levels of the organization					
5	Employees at all levels are educated and trained on how to apply basic tools and methodologies to achieve improvement objectives.					
6	Employees are capable enough to successfully promote and complete improvement projects.					
7	Innovative ideas are encouraged and implemented for improvement.					
8	The internal audit system is consistently conducted as planned and were productive.					
9	Internal audits often come up with possible corrective actions or improvement proposals that fault finding.					
10	The quality manager ensures that the quality system is continually improved.					
11	Management carries out re					
12	Management takes corrective actions based on reviews and follows up for the implementation of actions.					
13	Sufficient resources were often allocated for maintenance of quality system.					

F. Factual decision making

The following statements are coined to find out to what extent they true about your organization's practice on "decision making". Please indicate how strongly you agree or disagree with the statements. (Tick one: strongly Agree =5, Agree=4, Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of decision making	5	4	3	2	1
1	My organization determine, measure and monitor key indicator to demonstrate the organizations performance					
2	My organization ensure people are competent to analyze and evaluate data as needed					
3	Departments reach shared decision than independent actions					
4	Data collection methods used ensured data are accurate, reliable, timely and valid					
5	Data on quality of product and processes are made readily available for decision making					
6	Obsolete documents were dealt with a manner that does not confusion with new versions					
7	When process are changed as a result of preventive and corrective actions , the quality manual is immediately updated					
8	My organization makes decision and take action based on evidence, balanced with experience and intuition.					

G. Process approach

The following statements are coined to find out to what extent they true about your organization’s practice on “process approach”. Please indicate how strongly you agree or disagree with the statements. (Tick one: strongly Agree =5, Agree=4, Neutral=3, Disagree=2 and strongly Disagree=1)

No	Elements of People engagement	5	4	3	2	1
1	Efforts have been made to focus on organizational processes than functional					
2	The management established authority , responsibility, and accountability for managing process					
3	Appropriate statistical quality tools are used to gather data on input ,					

	process, and output phases to facilitate appropriate decision making					
4	The organization manages process and their interrelations as a system to achieve the organization quality objectives effectively and efficiently,					
5	All departments understand the effect of their actions on other departments and do their activities taking this in consideration					
6	My organization manage risks that can affect outputs of the processes and overall outcome of the quality management system					
7	My organization ensure the necessary information is available to operate and improve the processes and to monitor , analyze and evaluate the performance of the overall system					

G. Challenge of implementing QMS (developed by researcher)

The following statements are coined to find out to what extent they true about your organization’s practice on “challenge of QMS”. Please indicate how strongly you agree or disagree with the statements. (Tick one: strongly Agree =5, Agree=4, Neutral=3, Disagree=2 and strongly Disagree=1)

No.	Statement	5	4	3	2	1
1	My organization has Lack of available quality system documentation					
2	Employee has Lack of understanding of the process requirement					
3	High cost to implement QMS					
4	Lack of planning , assurance and control of QMS					
5	Lack of QMS exposure					
6	Lack of continuous professional development					
7	Lack of documentation of suppliers, materials, and services					
8	Lack of awareness and insufficient Knowledge of employees about quality programs					
9	Lack of support from the top management					
10	Lack of understanding in the QMS					
11	Lack of financial resources					
12	Lack of competent human resources					
13	Lack of internal and external audit					
14	Lack of support from Government					
For Your Additional Comments						

Thank you very much for your participation

Appendix Table II long year Sugar production data at Metahara Sugar factory

S/N	Year	Total Area (Ha.)	Harvest Area(Ha.)	Age (M.)	Total Cane	Cane/ Ha. (Qt.)	Cane /Ha. /M. (Qt.)	Field Yield	Sugar Produced (Qt.)
2001/2002	1994	9,940.9	6,678.3	17.0	10,211,121	1,529	90	11.62	1,156,416
2/3	1995	10,014.0	6,813.1	16.7	10,498,987	1,541	92	11.73	1,165,001
3/4	1996	10,064.3	6,605.2	17.0	11,314,708	1,713	101	11.08	1,203,346
4/5	1997	10,077.6	6,161.9	17.5	10,623,116	1,724	99	11.41	1,208,212
5/6	1998	10,174.2	6,609.2	17.8	11,480,180	1,737	98	11.23	1,253,156
6/7	1999	10,174.2	7,090.0	17.5	11,705,590	1,651	94	11.11	1,264,025
7/8	2000	10,244.1	7,056.5	16.2	11,304,513	1,602	99	11.53	1,302,661
8/9	2001	10,229.5	7,536.4	16.4	12,010,111	1,594	97	11.11	1,301,804
9/10	2002	10,231.1	7,331.5	16.0	11,765,040	1,605	100	10.63	1,200,349
10/11	2003	10,231.1	5,692.7	17.3	9,880,397	1,736	100	10.89	1,019,623
11/12	2004	10,228.1	4,926.8	20.4	9,530,095	1,934	95	11.17	931,399
12/13	2005	10,231.2	4,946.6	22.4	9,019,313	1,823	81	11.24	797,983
13/14	2006	10,240.2	6,870.7	22.1	11,555,499	1,682	76	10.98	1,149,000
14/15	2007	10,235	8,141.3	16.0	11,042,030	1,356	86	10.97	1,110,515
15/16	2008	10,232	6,647.4	14.3	7,870,600	1,184	80	11.05	688,984
16/17	2009	10,222	7,605.3	16	8,787,824	1,156	70	10.93	823,833
17/18	2010	10,222	5,725.9	17	7,410,484	1,303	76	11.20	667,512
18/19	2011	10,222		20.4		1,570	77	11.24	

			4,786.6		7,516,490				633,112
19/20	2012	10,222	5,802.9	20.9	8,971,912	1,546	74	11.10	755,607
20/21	2013	10,222	7,896.5	18	8,895,106	1,126	64	11.86	762,666
21/22	2014	10222	6,910.10	13	5,267,817	762.3	59	11.7799	444,726