ASSESSMENT OF THE IMPLEMENTATION OF INDUSTRY EXTENSION SERVICES AND CHALLENGES; THE CASE OF SELECTED TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN GURAGHE ZONE

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Acronyms and Abbreviations

A.A.U (AAU) - Addis Ababa University

CSA - Central Statistical Authority

E.C. (E.C) - Ethiopian Calendar

EKI - Ethiopian Kaizen Institute

ESDP - Education Sector Development Program

ETB - Ethiopian Birr

FDRE - Federal Democratic Republic of Ethiopia

G.C. (G.C) - Gregorian Calendar

GTP - Growth and Transformation Plan

ILO - International Labor Organization

ISO - International Organization for Standardization

KAIZEN - A Japanese business philosophy of continuous improvement (改 Kai - means change, 善 zen - means good)

MDG - Millennium Development Goals

MoE - Ministry of Education

MSEDA - Micro and Small Enterprises Development Agency

MSEs - Micro and small Enterprises

MSSEs - Micro and Small Scale Enterprises

Operators - Any member of an MSE (synonymous to member

PASDEP - Plan for Accelerated and Sustained Development to End Poverty

SNNPRS - Southern Nations, Nationalities, and Peoples' Regional State

TVET - Technical Vocational Education and Training

TVET leaders (TVET Management Team) - Deans, Vice deans and training coordinators

UNSCO - United Nations Science and Culture Organization

USD - United States Dollar

VET - Vocational Education Training

ABSTRACT

The main purpose of the study was to assess the implementation and challenges of industry extension services in Sothern Nations, Nationalities and Peoples Regional State, Guraghe Zone. To this end, five TVET institutions, MSEs, and stakeholders are randomly selected as a sample. The subject of the study was 16 TVET leaders (deans, vice deans and training coordinators), 34 operators of the MSEs, 50 TVET trainers and 9 representatives of stakeholders. The study was qualitative and quantitative approaches to develop sufficient data in explaining the problem at hand. The data for the study were obtained through questionnaires, interview, observation, and document survey and analyzed using SPSS software percentages and frequency counting method. Accordingly, the respondents' sampling was carried out through stratified and purposive sampling techniques. The result of the study revealed that TVET training was not being given by qualified trainers, industry extension service is already started in the zone, all TVET institutions have a budget proposal for the implementation. Moreover, kaizen is found to be the most implemented package, industry extension service is being provided in the TVETs, members of the MSEs have the understanding that TVET training will develop confidence and self employability, all the staff of TVETs participate in the implementation process and there is low coordination and between the stakeholders and lower level of follow up which resulted in ineffective implementation of the service in the zone, in general. It is recommended that lack of awareness, cooperation and follow up is the major problem in the side of the stakeholders and in general industry extension service is not provided in accordance with the standards. Therefore it is recommended that TVETs should hire qualified trainers or upgrade the existing ones, awareness must be created in all the stakeholders so that proper follow ups and cooperation between them could occur, due attention must be given to all the four packages, its impact must be evaluated regularly, and the implementation should take place in a well organized place and workshop.

Definition of Key Words

Kaizen - continuous improvement in production or service providing activities.

Entrepreneurship - is training given by TVETs for a operators of the MSEs to organize and manage a business undertaking, assuming the risk for the sake of profit.
Industry Extension Service - Newly developed instrument to capacitate micro and small enterprises by applying the four packages called; skills gap training, kaizen, technology transfer and entrepreneurship training.

Skills gap training - is training given by the TVETs to the operators of the MSEs after they identify their skill gap.

Technology transfer - is TVETs' creating, producing, transferring of new means of production or service to the MSEs for better productivity and profitability.

Technical and Vocational Education and Training - form of education where learners acquire skills, knowledge and attitudes.

Stakeholders - Omo Micro Finance, Trade and Industry Office, and Micro and Small Enterprises Development Office of the towns or woredas.

Implementation - Application of industry extension services in MSES.

Challenges - Obstacles that could hinder the implementation of industry extension service in MSEs

CHAPTER ONE

1. *INTRODUCTION*

1.1BACKGROUND OF THE STUDY

According to the World Economic Report of 2013, Ethiopia's economy is declared as one of the fast growing in the world. The country's progress in the development of infrastructure, education, health, agricultural outputs is getting better since late 1990s. (World Bank Report, 2013: 346)

On the other hand previous history of the country shows that Ethiopia is among the poorest countries in the world with some 31 million of the population earning a daily income of less than 45 US cents. The development of human power was not given attention though there are a lot of measures taken to develop the livelihood of the population. The country's population however increases by more than 2 million each year putting high pressure on resource use such as land, the services to be rendered, and the labor in general (ILO, 2004).

Towards the achievement of the Millennium Development Goals - MDG, Ethiopia has launched the second poverty reduction strategy paper known as Plan for Accelerated and Sustained Development to End Poverty - PASDEP. As the country's economy in general is dominated by agriculture, the level o urbanization is low, 85% of the population, 90% of the poor live in rural areas the livelihood of most of whom is totally depends on agricultural outputs. The relative share of labor in total agricultural output has been declining (CSA, 1994 and 1998).

Despite some efforts in recent years, employment creation in the modern industrial and service sectors remains very minimal due to low emphasis given to the private sector development. The country's manufacturing sector is mainly dominated by food, beverages and textile products. For instance, out of the registered micro and small enterprises - MSEs 85% are grain mills. Most of the registered large and medium enterprises in the manufacturing sector (800) of them are concentrated in Addis Ababa. Only 27% of large scale industries were privately owned in 2002/03, although the proportion has increased (WHO, 2000).

Most of the Ethiopian work force is characterized by low skill levels and very low educational attainment. Only 10% of the urban population has post-secondary school education. Because of this around 75% of the work force is concentrated in low skill employment sectors such as commerce, services and elementary occupations. Less than half of the urban workforce is

engaged in wage employment. Most of the urban workforce population are engaged in family business duties rather than creating and running for their own. A large proportion of the urban population is still self-employed work for the informal sector (ILO, 2004).

Due to the unavailability of well-developed private sector, unemployment and underemployment remains a serious problem to the country. Underemployment is the major problem in the rural areas whereas 26% of the workforce is unemployed in the urban areas. The major portion of the unemployed workforce in the urban areas accounts for the youth which needs a special concern. The studies conducted in this area also show that there is a serious skill and knowledge gap in the areas that require high level of competences especially outside the capital city (Yikunoamlak, 2001)

To achieve PASDEP and solve the aforementioned socio economic problems, the government of Ethiopia, in collaboration with the Industrial Development Strategy and other sector development strategies, launched a comprehensive capacity building and human capital formation known us the National TVET Strategy. Since the key objective of the PADEP is to commercialize agriculture and economic growth and development through job creation and reduction of unemployment, TVET plays a tremendous role in providing relevant and demand driven education and training that corresponds to the economic and social sector for employment and self-employment.

The low level of skilled human resource has a significant effect on the low development of the industrial sector. Therefore, the country needs to educate and train its workforce to the international standards to increase TVET's contribution to the industrial development and on building a culture of entrepreneurship and preparing the people for self employment (Yikunoamlak, 2000).

Based on the finding that current TVET graduates are not meeting the expectations and demand of the economy, the second Educational Sector Strategy Development Program - ESDP II advocates a coherent system including formal/non formal, initial/further training with open access to certification and path ways.

Technical and vocational education and training has been traditionally offered by the government, private, and NGOs for the objective to produce middle level technical graduates at different levels. Meanwhile, in non-formal TVET programs, public institutions, NGOs, and private schools provide employment oriented TVET programs to various target groups including

school leavers, people in employment, school drop outs and marginalized groups in the labor market. Informal occupation training is not yet recognized due to the absence of a systematic assessment and certification system. The linkage between the TVET providers and the micro and small enterprises sector constitute an other presumably important, yet un-researched, training environment.

A number of TVET schools have been opened by the government to provide better options for the increasing number of school leavers. Between 1996/97 and 2004/5, the number of TVET institutions providing formal non-agriculture TVET increased from 17 to 199, and enrolment from 3,000 to 106,305 (Yikunoamlak, 2001).

It is assumed however, that demand by far exceeds the current supply and that the majority of the population is not reached by TVET offers at the moment. In particular, TVET accessible to school drop outs, unemployed, workers in industry and the MSE sector, prospective entrepreneurs, people living in rural areas and women is in very short supply.

Since late 1990s, the government is reforming the basic framework condition of the TVET system. It calls up the fact that the training framework lacks relevance to the need of the country while the country was in dire need of craftsmen and technicians at all level. An industrial attachment methods like internship and cooperative training were assumed to minimize the gap between the industries and the TVET institutions.

Micro and small scale enterprises are assumed to be the next takeovers of the country's industry. TVETs are likely engaged in the production of those competent members of the MSEs. Industry extension service is the process of training, follow up, and empower of those members of the MSEs in production, technology transfer, and finding new and better methods of production and productivity.

As it is stated in the 2008 strategic plan, TVETs in Ethiopia are assumed to produce competent members of medium and small scale enterprises. After those members are graduated, the TVET institutes are expected to follow up and help those members of the MSEs in their growth towards industrialization. Therefore industry extension service is aimed to help those enterprises in four aspects skill upgrading and filing the gaps, technology transfer, entrepreneurship and quality and productivity.

There are varies reasons for members of medium and small scale enterprises to lack skills in many competencies. It is the TVET institutions' mandate to assess their skill gaps and prepare training manuals and deliver a training.

The skills gap training may be conducted in the enterprises, in the TVET institutions or in combination of the two. The modality of training, however, should mainly focus on practical engagements where trainees are physically work on production or prototypes.

The TVET institutions are expected to produce training manuals based on the competencies identified, should facilitate the training rooms, and should evaluate the impact of the training.

To meet international standards and to be able to compete in the international arena, TVETs are expected to replicate new technological outputs and transfer the same to the MSEs. The creation and fabrication of these new technological outputs also should focus on creative capacity building and minimizing skills gap. Their benefit will be significant since the trainees who pass through this process are endowed with outstanding and international workforce ethics.

International occupational standards and best practice have been used in order to replicate these technological outputs. Hiring external experts is another important measure for capacity building so that teachers, trainers and trainees will be able to contribute to transfer the technology to the industry (MoE, National TVET Strategy, 2008).

TVET institutions having accumulated technology capabilities, and using this potential to promote technology transfer, contribute to the enhancement of productivity and the competitiveness of industries. TVET institutions are expected to revamp and supply services to the market to transfer the newly selected technologies. Another task of the institutions is to properly utilize their respective resources and to deliver services against fees. The income generated from such activities enables to create further potential to increase the capability of the institutions.

Moreover, according to the 2008 National TVET Strategy, the institutions are expected to relevantly transfer the technologies to micro and small enterprise (MSE) sector in order to increase their productivity, improve the quality of products and services and facilitate creation of new business. Provision of TVET programs and technology transfer services are the means to strengthen MSE in urban and semi-urban areas.

Business development training is another obligation of the TVET institutions which aims at enabling the members of the MSEs in terms of business, personnel, resource, financial management and to look forward for better opportunities. After this types of training are given to the members of MSEs, they will be able to prepare a business plan, enter into business with a better competitiveness capability, manage their resources and work.
TVET institutions in this regard play a tremendous role by preparing and providing appropriate training and finally follow up and retrain according to the prevailing conditions. This trend will enable the MSEs to produce quality and products which will make them competitive in the national and international levels.

The main objective of this quality control and assurance is to offer quality product with quality service and minimal cost. Quality refers to an all round economical, best output with minimal effort, standardized service, and procedural process which ensures the MSEs to earn maximum production and profit. To achieve this standard, the MSEs need to assess their current business processes and sort out those missed and need to be corrected.

TVET institutions in this regard help the MSEs to apply different techniques and methods that are accepted in the international standards. Some of these are ISO and KAIZEN. ISO is found to be costly to the Ethiopian entrepreneurs as it requires a lots of corrective measure to reach the developed countries' standards. KAIZEN is best suited to our MSEs for it basically focuses on gradual improvement of business activities.

According to the Ministry of Trade and Industry (website), KAIZEN is a philosophy developed and established in Japan. The meaning of KAIZEN is change for better or freely translated quest for continuous improvement in all aspects of daily live. Therefore KAIZEN can be helpful in all activities of human beings privately or for business.

There are a lot of methodologies and tool available to make KAIZEN workable. But main important, all the involved people from the top down to the lowest level, must be encouraged to contribute their ideas to the never ending improvement (University Aachen; research Machine Tool Industry Germany).

The five means of KAIZEN application commonly called the 5S are Sort, Stabilize, Shine, Sustain, and Standardize. TVET institutions are currently working in the application of these KAIZEN elements in the MSEs. The application starts with the assessment of the current

conditions of the enterprises and goes through ensuring sustainable use of the techniques as a culture of work.

Guraghe Zone is the center of this study. Guraghe is a Zone located in the Southern Nations, Nationalities and Peoples Region (SNNPR). This zone is named from the Guraghe people, whose homeland lies in this zone. Guraghe is bordered on the southeast by Hadiya and Yem special Woreda, on the west, north and east by the Oromia Region, and on the southeast by Silt'e. Its highest point is Mount Guraghe. Wolkite is the administrative center of the Zone: other towns in Guraghe include Butajira and Emndibir. The Zone is divided into two as west Guraghe and East Guraghe. The Zabider mountain is the highest limit that divided the Zone into two.

Based on the 2007 Census conducted by the CSA, this Zone has a total population of 1,279,646 (622,078 male and 657,568 female) with an area of 5,893.40 square kilometers Guraghe has a population density of 217.13. While 119,822 or 9.36 are urban inhabitants, a further 3 individuals are pastoralists (CSA)

According to World Bank report in May, 2004, 3% of the inhabitants of Guraghe have access to electricity, this zone has a road density of 95.4 kilometers per1000 square kilometers, the average rural household has 0.5 hectare of land (compared to the national average of 1.01 hectare of land and an average of 0.89 for the SNNPR) the equivalent of 0.2 heads of livestock. 18.9% of the population is in non-farm related jobs, compared to the national average 25% and a Regional average f 32%. 79% of all eligible children are enrolled in primary school, and 12% in secondary schools.

The zone has 13 woredas and two towns which host a lot of micro and small enterprises. Each woreda's and town's micro and small enterprises development offices are the governing body that is responsible for the formation follow up of these enterprises. Currently there are 287 micro and small enterprises with a total member of 512 people.

The major areas of these micros and small enterprises is production of house and office furniture, cobblestone, cleaning services, construction, garment and tailoring, auto services, installation of water and electrical systems, and secretarial services.

The Zone has a total of five TVET institutions, of which Wolkite polytechnic college, Butajira TVET Center, Agena TVET institute and Areqit TVET institute are owned by government while Emdibir St. Antonios Catholic TVET institute is owned by NGO.

For convenience purpose, the four government TVET institutions in consultation with the MSEs development offices of each Woreda and town have clustered each MSE to belong to one of the four institutions based on geographic convenience. Hence Wolkite polytechnic college implements industry extension services to MSE in Wolkite town, Cheha, Kebena, Abeshge, Inemor,Indegagn, and Yem special Woreda. Butajira TVET center implements industry extension service to MSE in Butajira town, Meskan, Sodo, and Mareko while Agena TVET institute implements in Agena town and Muhur Ina Akll Woreda. Areqit TVET institute helps those MSEs in Gumer Woreda and Getho Woreda while Emdibir St. Antonios Catholic TVET institute is responsible for Emdibir town only as it is recently inaugurated in 2004 E.C

Since the implementation of industry extension service in 2003, several changes have been made but the reports from both the TVETs and the MSE development offices and as a Zone in general show that the implementation is not in accordance with the expectations. Problems with qualities of products and services, lack of skills in keeping financial transactions, and the use of old and traditional ways of making a business are the manifestations of these MSEs. Before taking any measure or corrective actions it is obviously necessary to study the situation and present the findings for decision makers. To this end this research will have a contribution in putting these MSEs in better position with regard to efficient utilization of industry extension services provided by TVET institutions.

1.2 *STATEMENT OF THE PROBLEM*

Like many of the Sub Saharan African countries, Ethiopia accounts the largest youth population. Lack of skilled and well educated youth is becoming a social, economical and even political challenge of the country. According to the 2005 national labor force survey, from the total unemployed persons in the country, about54.3% are literate including TVET graduates.

Micro enterprise sector has become an important source of employment and income since 1970s (Ozcane, 1995; Zewede, 1999). However, in Ethiopia given the widespread poverty, unemployment, underemployment and disguised unemployment, the realization of their nature and characteristics as well as their potential by the government and by the development practitioners have been given due attention very recently.

According to the GTP, due attention is given by government stakeholders like TVET institutions in empowering these micro and small enterprises. The ministry of education in collaboration

with other ministries has developed a new strategy to help these MSEs called industry extension service. The implementation of industry extension service is mainly concentrates in nearby towns of the TVET institutions.

In Guraghe Zone, where this study was conducted there are 512 MSEs scattered in the towns Wolkite, Butajira, Emdibir, and Agena and rural Woredas working on production of household and office furniture, cobblestone, crasher, food processing, garment, service rendering, automotive services . Most of their customers complain about the quality of the products they produce and the services they render. Most of them do not have a business skill to record their transactions. Moreover, they use traditional tools and equipments for their production and service which is time consuming and costly.

As of 1996 Ethiopian TVET Strategy insists there are several stakeholders including government offices, private sector, investors, NGOs, and charity organizations. Their contribution to this end seems that sending representatives during annual or semi-annual meetings.

Therefore, this study explores how the industry extension service practice looks like and find out the challenges of implementing the industry extension service in Guraghe Zone. To answer the aforementioned problem of the research, the following basic questions were asked.

THE RESEARCH QUESTIONS:

1. What is the current practice of industry extension service in Woredas and Towns of Guraghe Zone?
2. How effective are the TVET institutions in implementing the industry extension service in their respective Woredas and Towns?
3. What are the challenges to implement industry extension service in Guraghe Zone?
4. What are the roles and the current contributions of the stakeholders in industry extension services in Guraghe Zone?

1.3 OBJECTIVES OF THE STUDY

1.3.1 Major Objective

The main objective of this study is to assess the challenges of industry extension services in some technical and vocational education and training institutions in Southern Nations, Nationalities and Peoples' Regional State, Guraghe Zone.

1.3.2 Specific Objectives

- Explain the current practice of industry extension service in woredas and towns of the Guraghe Zone
- Investigate how far the TVET institutions are effective in implementing industry extension service in their respective Woredas and Towns.
- Identify the major challenges in implementing industry extension services in Guraghe Zone
- Investigate the role and the current contributions of the stakeholders in industry extension services in Guraghe Zone.

1.4 SIGNIFICANCE OF THE STUDY

The study is worthwhile and significant for the following reasons. First, the study will try to explore the current industry extension services practice of the Guraghe Zone. This will bring specific knowledge to fill the existing research gap in the area. Furthermore, assessing the current conditions of the applications of industry extension services helps in creating better awareness to the stakeholders. Second, the research is designed to assess the contribution of TVET institutions in empowering MSEs. This will help the TVET institutions to choose the type of occupations and level of training programs in line with the need of the MSEs sector. Thirdly, the findings may benefit policy makers and development practitioners to seek solutions to the problem at hand. And in the fourth place, the findings and suggested recommendations of the study may initiate further study.

1.5 DELIMITATIONS OF THE STUDY

The study is delimited to SNNPRS, Guraghe Zone. The Zone has four public and one NGO based private technical and vocational education and training institutions. These TVET institutions are:

1. Wolkite Polytechnic College
2. Butajira TVET Center
3. Agena TVET Institute
4. Arekit TVET Institute
5. Emdibir St. Antonios TVET Institute

The researcher has decided to conduct the research in Guraghe Zone because of several factors. The first case is the emphasis given to TVETs and MSEs in the GTP. Secondly, the researcher has proved that no research has been done before in the Zone in the area. Thirdly, is it is an appropriate method of study in one particular area. And fourthly is the researcher has a ten years work experience in TVET schools and recently in the industry extension service in the Zone. The research included representatives from all the stakeholders and operators of the industry extension service. The methodology used and the in depth analysis of all the cases helped the researcher to reach at a concrete conclusions and recommendations. Thus, the findings of the research will not be affected.

The theme of the study is also delimited to the training occupations building construction and cobble, production of house and office furniture, garment and tailoring, and service rendering over the past two and half years 2004 E.C to the mid of 2006 E.C. This is because the industrial extension service is newly introduced since 2004 E.C.

1.6 LIMITATIONS OF THE STUDY

This study is limited to a number of factors that affect its accomplishment, the major limitations are: shortage of empirical data from the institutions, Woredas, Towns, Zone and regional bureau. Unavailability of members of MSEs and TVETs by the time the researcher wants to conduct interview, observations and get data for through questionnaire is the other limitation. Shortage of time and budget to collect and analyze data could be the other limitation of the study. Nevertheless, the researcher takes lots of time to arrange meetings and conduct the survey and observation. Verbal explanations and informal cross checks helped the researcher to get accurate empirical data from the MSEs, stakeholders and TVETs.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURES

In this chapter, the study tries to assess the views of the scholars in the field of technical and vocational education and training and their contribution in the economy through capacitating micro and small enterprises. Based on the views of scholars and experience of other countries, the study tries to relatively examine the actual condition observed in the process of TVET training system and their implementation of industry extension service in the micro and small enterprises.

2.1 The Concept Technical and Vocational Education and Training system and Industry Extension

2.1.1 Conceptual Framework of Technical and Vocational Education and Training

Vocational training and general education are the two predominant forms of secondary schooling around the world. Most educational systems around the world contain both a general and a vocational component of secondary schooling. But there is remarkable diversity in the emphasis on general versus vocational education across different countries and a long-standing debate about the relative benefits of these different types of education (Malamud and Cristian Pop-Eleches, 2006)

The debate about the relative benefits of general versus vocational education is often framed by the contrast between the American and European systems of education. Whereas the United States emphasizes formal general education in secondary schools, much of Europe relies on vocational training and apprenticeships to prepare its workforce for the labor market (Goldin, 2000, p. 277) Disregarding the difference, general education would supply with minimal level of knowledge eligible learners to vocational education.

Atchoarena (1993:29) explains the purpose and importance of vocational training as follows:

> *Vocational skill training in most countries is provided to facilitate the transition from school to the world of work; furthermore, it enhances the quality of life through acquisition of practical skills that promote an individual productive to be employed or for self employment.*

A research conducted by the University of Nairobi on this issue states that the main objective of vocational schools should be to offer technical training to all school leavers without regarding to where they should work and what type of work they should do. The vocational schools movement should be expanded to accommodate both the primary and secondary school leavers, and that the trainers should monitor the changing local communities' needs in order to avert saturation of the local labor market with skills which are not immediately in demand (University of Nairobi, 1986).

Vocational Education is a form of shaping, instructing and transmitting of information to build knowledge, skill, and attitude in individual citizens. It prepares trainees for jobs that are based on manual or practical activities, and totally related to a specific trade or occupation.

Technical Vocational Education and Training or simply TVET, is concerned with acquisition of knowledge for the world or work. It is making an individual more employable in one group of occupations than in another and necessary for occupational success. It is a type of education system mainly designed to lead participants to acquire the practical skill, knowhow and understanding necessary for employment in particular occupations, trade or group of trades or occupations.

More in comprehensive way we can define TVET as to referring to those aspects of the educational process involving, in addition to general education, the study of techniques and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge related to occupations in various sectors of economic and social lives (UNESCO 2004).

Grubband Lazerson (1975:451) states:

> *Vocational education is, and is continues to be, known by many names: such as; industrial education, technical education, manual education and more recently, career education. What is common to all these forms of vocational education the essential practical and applied character of instruction usually though not exclusively, aimed at matching pupils what work positions in the industry and commerce.*

The case for vocational elements is not based on preparing youngsters for jobs, but on giving them an understanding of the relationship between their studies and the requirements of industry and business (Venkataiah, 2001).

2.1.1.1 Historical Background of Vocational Education In Ethiopia

The history of vocational education in Ethiopia can be traced back with the ancient history of Ethiopia. History tells us Ethiopia was an important center of technology and arts. Even if many of the arts have been done traditionally, Ethiopia's architectural and cultural remains tell us the people of Ethiopia were engaged in the vocational activities.

Teklemariam (2002:2) stated:

> *There was a time back in history when Ethiopian's valued the skill of people and as a result, the country as relatively an important center of technology and arts of time Cultural and architectural remains witness this fact. But latter on unfortunately poverty replaced this golden times.*

The ministry of education on the other hand noted that although technical and vocational education was started back 50 years ago, its development was very slow and not up to the desired level by the country (MoE 2004:6)

Therefore, it was obvious to decide and start new technical and vocational education and training system as stated in the MoE (1973:30) and quoted by Awol, (2007:18);

> *The first vocational school of Addis Ababa was established by MoE in 1941; under the name of Ecole National des Arts commonly known as "ENATt" French was used as a medium of instruction in addition to Amharic later on, the Moe changed the name of the school to Technical School and the language of instruction become Amharic and English.*

As an effect of all these efforts the Addis Ababa Commercial School, Jimma Agricultural School, and the Bahir Dar Poly Technique Institute were established by enrolling students from all over the country.

According to Yikunoamlak (2000), these technical schools were not enough to serve all school leavers who otherwise would be unemployed. Subsequently, many high schools were converted into comprehensive high school where both the vocational training and general education were offered in the same school to prepare the graduates for jobs. And, hence the first comprehensive education program was started in W/ro Siheen Comprehensive high school n 1961.

Yukunoamlak (2000:37) stated about this issue as saying:

«With the objective of making the curriculum job oriented so as to produce middle level man power, the concept of comprehensive program was introduced in the secondary school of Ethiopia in 1961»

However it took few years for the government to realize that the comprehensive high school program was not fulfilling the demand. Most of the school leavers were still unemployed and the quality of graduates was also unaccepted tot the standards of the labor market. This was due to shortage of training materials, trained teachers specially in the technical areas, and capable technical leaders.

Regarding comprehensive program, Yikunoamlak (2000:38) has mentioned that "after 1984, the comprehensive secondary school training program started to decline. The program was inefficient because it produced too many graduates and yet they were unemployed".

The Ministry of Education, then decided to strengthen a number of selected comprehensive schools establishing technical school and introducing the new vocational and training program. The aim of the new change was to produce graduates with a better skill and knowledge that would enable them be employed in the economy.

After the fall of the Derge regime, the new education and training policy has been declared by the new government. With awareness of the past mistakes, the new Ethiopian government gave a special attention to technical and vocational training as it is stated in the National TVET Strategy 1994.

2.1.1.2 Current trends of TVET in Ethiopia

According to the National TVET Strategy (2008), technical schools were not intended only to train skill. They are expected to assess the labor market and pave the way for their students to fit themselves in the world of work through cooperative training, apprenticeship, and internship. That way the students will get the opportunity to get the skills, knowledge and attitudes expected of them in the real world of work.

The National TVET Strategy (2008:16) states that "technical and vocational education and training (TVET) programs play the central role by producing skilled labor that can either be employed in different institutions or create their own job."

The primary goal of TVET in Ethiopia is to create competent and an adaptable workforce (both male and female) to be the backbone of economic and social development to find out gainful

employment and self employment in the different sectors of the country's economy. The TVET system is reorganized according to well developed worldwide practices. To this end competences needed in the labor market are identified to be the benchmark of teaching, training and learning (MoE National TVET Strategy 2008). With regard to this Kedir (2007) states:

> *The objective of vocational education, therefore is to satisfy the need for trained manpower for performing practical works in the economy. Trained citizens can alleviate personal and societal problems by taking parts in maculating hand tools and machines using raw materials from the localities for local consumptions. That is why technical and vocational training can be used as a major tool to resolve the problem of unemployment and poverty reduction.*

A Competency is an underlying characteristic of a person which enables him /her to deliver superior performance in a given job, role or a situation. Competence is a broad concept comprising the possession and application of a set of skills, knowledge and attitudes which are necessary to successfully compete for jobs in the labor market; to be a productive and adaptable entrepreneur, employee or self-employed, and thus to contribute to personal empowerment in economic and social development (MoE, National TVET Strategy 2008).

Competences will be described in national occupational standards to be developed by people knowledgeable on and experienced in the world of work. As such, the national occupational standards define the outcome of all training and learning expected by the labor market, and will form the benchmark of all quality management within the TVET system (Engineering Capacity Building Program: 2010)

2.1.2 Conceptual Framework of Industry Extension

Industry is an economic activity concerned with the processing of raw materials and manufacture of goods in factories (Concise Oxford English dictionary 11th ed.) According to this definition, one can easily infer that industry is a means for the transformation of raw materials into more useful goods which has three elements raw materials, production, and outputs.

> *Industry is more than a partner in the TVET system; in fact, it is the key driver. Industry plays the major role in the setting of occupational and competency standards; it is the underbelly of the national qualifications framework and quality assurance provisions. Industry is the nuts and bolts of a quality and effective TVET system* (Bakuli, 1986)

According to the businesswords.com (website) definition of industry, it is a basic category of business activity. The term industry is sometimes used to describe a very precise business

activity (e.g. semiconductors) or a more generic business activity (e.g. consumer durables). If a company participates in multiple business activities, it is usually considered to be in the industry in which most of its revenues are derived

For this purpose only in Ethiopia, it is defined as the process whereby different inputs are converted into marketable output (MoE, General Business Education, Grade 11 Text book: 2000).

Industry extension service, we commonly hear these days is the process jointly executed by technical and vocational education and training institutions and other stakeholders to assess and filling the gaps of micro and small enterprises to make them competent, productive, progressive, and profitable in the large economy. In relation to this the National TVET Strategy (2008:18) states the following in explaining the importance of stakeholders:

> *TVET operates at the interface of different sectors of society, notably the education sector, the labor market, industry, MSE sectors, agriculture and rural development, and public administration. In order to serve and relate to all these sectors through high quality and demand-responsive instruments, the TVET system must be steered and implemented with the involvement of a wide stakeholder group.*

From this quote, we can understand that TVET institutions should enroll and train the middle labor based on the demand of different economic sectors in the country. This will help the TVET institutions to be sure that the trained man power will be employed, regardless of self employment or working for others after graduation.

The other important segment is the share of micro and small enterprises in the economy by creating job opportunities and generation of income for citizens.

2.1.3 Micro and Small Enterprises

The Ministry of Trade and Industry adopted official definition of Micro and Small enterprises in Ethiopia as follow:

> *Microenterprises are business enterprises found in all sectors of the Ethiopian economy with a paid-up capital (fixed assets) of not more than Birr 20,000, but excluding high-tech consultancy firms and other high-tech establishments. Small enterprises are business enterprises with a paid-up capital of more than Birr 20,000 ($2,500) but not more than Birr 500,000 ($62,500) but excluding high-tech consultancy firms and other high-tech establishments (MSEDA, 1996E.C: 16)*

At the same time, Levitsky (1989: 112) defines micro enterprise sector as the following:

> *The term micro enterprise sector referred to very small income generating units, owned and managed by entrepreneurs who worked in it themselves, from which they derived most of their livelihood, which employ very few people, if any, mainly relying on family members and using very little capital. In most countries, this was largely synonymous with the informal sector but in some cases could include traditional family, cottage industries or artisan units and the self employed (Levitsky, 1989: xviii).*

The Central Statistical Authority (CSA) definition of the micro and small enterprises bases on different criteria as saying: large and medium scale manufacturing enterprises have been classified as establishments with more than ten employees using automated machinery. Small and medium enterprises are establishments that engage less than 10 persons using power driven machinery. Cottage/handicrafts are household type enterprises located in households or workshops normally using own or family labor and mostly manual rather than automated/mechanical machinery (CSA, 2002).

Industry extension is a term currently associated with TVETs where they are expected to help the local small industries (MSEs) in filling their skill gaps, giving training on entrepreneurial skills, technology transfer and improvement in productivity (MoE, 2008).

As it is clearly stated in the National TVET strategy, graduates of TVET institutions will become future industrialists through the form of micro and small enterprises. To these end, all operators of MSE are expected to be trained based on the current occupational standards.

The TVET outcome quality is measured through the learner's achievement of competence. This is done through occupational assessment. A candidate who has proven that he or she is competent will be awarded a national occupational certificate. TVET institutions are expected to develop their own curriculum based on the national occupational standards.
Currently there are three certification levels up on the achievement of competences. These are certification level one and two, certification level three and four and certification level five.

Any kind of training formal or informal, institutional based or cooperative, all will base on the competencies included in the occupational standard and the curriculum prepared by the institutions. Training for the MSEs is not exception to this. When learners finish their training,

their skills, knowledge and attitude will be assessed institutionally and nationally against the competence requirements on the occupational standards.

Other components of the industry extension (other than training), will be assessed based on the standards set by the national industry minister and micro and small enterprises development agency. The *Kaizen* agency operational since 2004 E.C monitors the quality control and assurance procedures of each MSEs.

The major outcome of these assessment and evaluation of the implementation of the industry extension services could be attributed to less awareness about the advantage. If there is a problem in awareness, the MSEs will seldom foster to the rules of industry extension.

Industry extension service comprises the four full packages filing skill gap, entrepreneurship training, technology transfer and application of kaizen. The following section describes all these components of the industry extension service a little depth.

2.1.3.1 Filling Skill Gap

This component of the industry extension service where TVET institutions will identify what standards are expected of the MSEs, what level of knowledge, skill and attitude they have and study the gaps in order to find out fitted training to fill the gap. The training mainly focuses on practical works while some conceptual class based lesson are given.

Survey results show that most of the formal training is found at large companies. Training for skilled laborers in small enterprises is much more skill specific, relating to job tasks and safety precautions. Most training for these workers is informal and takes place on the job rather than in a formal class room setting. Most of smaller companies have also found that informal on the job training is the most effective way to teach entry level workers their responsibilities: thus informal training may last from weeks to months depending on the complexity of the job (U.S. Department of Commerce/International Trade Administration, 1998).

The trainers should find out which type and methods of training are best fit to the already identified skill gaps. This usually rests on the objective of the trainees and their respective industries.

The student or trainee cannot occupy a passive role in relation to the teacher. The student/trainee must become actively aware of his/her present style of development or understanding, will a

change to take place and be prepared both to embark on a program to effect such a change, and also to measure whether and what extent the desired modification has taken place. It is the teacher's task to design learning situations and methods to encourage and facilitate this, and to initiate discussion with the student to promote this: and the student's task to fulfill the learning objectives which he/she and the teacher agreed upon together (Venkataiah, 2001)

2.1.3.2 Giving Training on Entrepreneurial Skills

Entrepreneurship is the being engaged in business activities by assuming risks for the purpose to make profit. Training entrepreneurial skills for MSEs includes training on how to create a business network, business development service, development of business and expansion, and management of business opportunities (MoE, 2008).

It is becoming common to hear about the word entrepreneurship. Very few people were involved in the field in the previous regimes. It was highly hampered by the law and regulations of the Marxist philosophy (Hailey, 2003).

(Wikipedia, 2011) described the entrepreneur as a primary motivated by an overwhelming need for achievement and strong urge to build. Therefore, entrepreneur is a person or trainee who has a need to achievement, take a risk, and have self confidence.

The main characteristics of entrepreneurs are hence, high need for achievement, willing to take moderate risks, and strong self-confidence.

In relation to the characteristics of an entrepreneurship, David McClelland stated that,

successful entrepreneur should have a) unusual creativeness b) propensity to risk taking, c) a strong desire for achievement as qualities for effective entrepreneur. Therefore, the trainees need to have these qualities.

Since most of the members of MSEs come from the institutions that train personnel for different sectors, the question of efficiency of these workers needs to be tracked right from the syllabi used in the institutions by introducing subjects such as business management (Bakuli, D.B.L. 1986)

The nature, relevance, content and appropriateness of entrepreneurship education has been subject to increasing scrutiny in recent years (Block and Stumpf, 1992; Gorman *et al*., 1997;

Young, 1997; Kourilsky and Carlson, 1997).In particular a three stage of model of the evolution of entrepreneurship has been proposed. Entrepreneurship education (and education and development for smaller businesses in particular) must be qualitatively different from conventional large company-based management education which dealt with essentially different problems, organizations and contexts (Vesper, 1998; Filion, 1991).

2.1.3.3 Technology Transfer

The third important component of the industry extension service is incubation, transfer and adaptation of technological and modern means of production for the economy through the means of MSEs.

The process of change effects not only technological and economic relations, but also consumption patterns and life style (Venkataiah, 2001) implying that as we are living in ever changing world, industries are required to compete with regard to the use of advanced technological outputs to reach the ever changing demand and life style of the market.

Technology transfer is one of the core issues of industry extension service where technology can be identified in terms of techno ware, info ware, human ware or orgaware. Techno ware includes materials, gadgets, etc. Human ware includes the human knowledge, ability, experience, etc. Info ware includes organized information, work processes, design and blueprints, etc. Orgaware: includes the organizational structures, setups, methods of doing things, etc. The term is now introduced to the different governmentally owned TVET institutions so that the different technologies copied by them could be further transferred to the nearby micro and small enterprises (EKI, 2012).

Narayanan and Fahey (1987:154), stated:

> *More generally, the technology segment is concerned with the technological progress or advancement taking place in a society. New products, processes, or materials; general scientific activity; and advances in fundamental science; are the key concern in this area.*

The process**,** as foreseen by the ministry of education, and further agreed by the regional TVET agencies and approved by TVET institutions, involves selection of the priority sector (e.g. Agriculture), value chain mapping, identification of constraints in the value chain, acquiring possible technological solution (can be free patented), selecting the best technology, blueprinting

the selected technology, prototyping, according to the blue print, testing the prototype in the actual condition, selection of appropriate MSEs, training the MSEs on the technology, and how to produce it, and transferring the technology through the MSEs, by making exact copy.

2.1.3.4 Improvement in Productivity (Kaizen)

Competitive marketplaces require people at all levels in an organization to think of ways to continuously improve the products or services that they deliver to customers (Emeralds) Kaizen is a Japanese word means change for the better which can easily be interpreted as continuous improvement (Imai, 1986)

The kaizen process utilizes various tools and methods to make the problem visible, and then uses formal root cause analysis and other means to identify and correct the problem at the source. The result is rapid improvement: lower costs, higher quality, and better products or service – attributes that customer recognize (Zimmerman, 1991)

Kaizen as a means of productivity improvement include five techniques commonly called the 5s. These are sort, stabilize, shine, standardize and sustain (Ethiopian Kaizen Institute, training manual 2012, Kaizen Institute Japan)

Sort refers to arrangement of resources and work process in to systematic groups. Stabilize means unlikely to change back or return to the old system. Shine refers to always being in a clean condition. It has said in Kaizen than 'clean even it is clean'. Standardize deals with the issue of working up to the maximum expectation or outcome. Sustainability refers to keeping the system going over time continuously (Ethiopian Kaizen Institute training manual 2012, Kaizen Institute Japan, Concise Oxford English dictionary 11th edition)

Lack of appropriate follow up and assistance from the stakeholders could be another cause for less implementation of the industry extension services. The contribution of some of the stakeholders like municipality and micro financial institutions is very crucial as they are the sources of land and credit respectively.

A little is known about the significance, impact and outcomes of the industry extension service since its implementation. To make the industry extension service best contribute to the performance of the MSEs, little investigations and researches have been done. This leads to wrong decisions to be made by policy makers. To deeply investigate the outcomes and impact of the industry extension it may be important to describe the current situation through exploring the

major challenges so far. Researches of this type, hopefully, will give a glance and light to the path in further researches.

Summary

In general, we can conclude that micro and small enterprises play a tremendous role in a country's economy. This contribution of the MSEs could be enhanced by providing sustainable training and the necessary resources and technology.

Developing countries like Ethiopia, where the major source of income and means of employment is dependent on agriculture, the work of MSEs can be integrated with agriculture by providing training on this field. But, since the current practice of most of the developing countries is to become industrialized, the MSEs will be the best path way to go through.

Technical and vocational training institutions are the key sources of graduates who will take over the MSEs. If training is provided in accordance with the need of the economy, the MSEs will take the leading position in the upcoming periods. The support of MSEs by the TVETs is through tangible materials like technological outputs and intangible ones like skills gap training and entrepreneurship. For futurity and sustainability purposes, kaizen is provided as one means to ensure quality and standards.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Methodology

A detailed investigation of the implementation and challenges of the industry extension service is made in all technical and vocational education and training institutions. A descriptive survey method was used for the study. This helped to collect current information to answer the research questions.

To keep its validity and reliability, the study was guided by the principles of multiple sources and subsequent cross-checking of information as well as by applying various data collection instruments. Details of the methodology are briefly presented in the sections below.

3.2 Study Design

3.2.1 Data Source

Both primary and secondary data sources are used. Primary data is collected through field survey for micro and small enterprises, technical and vocational education and training institutions, micro and small enterprises development offices, stakeholders and customers of the micro and medium and small enterprises. In connection to this, MacDonald & Nicola, 2001 stated that:

> *Primary data survey refers to the review of existing information, and in the quantitative context may involve the manipulation of statistical data. It differs from primary research techniques in that the researcher does not collect the data directly and cannot control the actual data collected, but can bring to bear new insights through interpretation or presentation. Managing large data sets and large amounts of quantitative material does require some specialist skill. The Policy Action Team Reports in the early Blair Administration described the lack of availability of relevant datasets in order to support neighborhood working, and over the last decade more statistics have been made more readily accessible to a wider range of people.*
> *Surveys are a popular method of collecting primary data. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. They are a flexible tool, which can produce both qualitative and quantitative information depending on how they are structured and analyzed.*

Relevant books, journals, and legal documents in each respective office are used as a secondary data. This includes review of the various reports and plans of TVET institutions and MSE development offices.

3.2.2 Sampling Technique

A combination of both non-probability and probability sampling techniques are used to select the respondents and their location. All the available TVET institutions in Guraghe Zone are included in the study with their selected respondents representing from the trainers, and the management team. For a better representation, respondents are randomly selected from both west and east side the Guraghe Zone. However, the respondents are further varied by their educational background, level of qualification, marital status, position, etc.

Trainers are employees of the TVET college/institute who are qualified to teach in the formal training session and in industry while TVET management team designates the deans, vice deans and training coordinators who play a tremendous role in regular and industry trainings.

Stakeholders, on the other hand, are those offices and companies which are clearly given the responsibility to execute their share in the implementation of industry extension service. These stakeholders are found in every Woreda and towns of the zone based on the government structure. These are Omo Micro Finance S.C, Trade and Industry Offices, Micro and Small Enterprises Development Offices. Thus, chairpersons or representatives of these stakeholders are selected as respondents in the study.

Micro and Small Enterprises are the center of the study. Among the MSEs clustered to each TVET institution, samples are selected randomly as respondents. Any operator of the MSEs is allowed to fill the questionnaire.

The time breakdown for selecting population was end of 2004 E.C to the beginning of 2006 E.C. The sample frame was 16 TVET management teams, 34 operators of the MSEs, 50 trainers and 9 chairperson and representatives of stakeholders which are engaged in four areas namely in the production of house and office furniture, building construction and cobblestone, manufacturing and service rendering.

3.2.3 Sample Size Determination

As to the sample size determination**,** from among different methods **(**both mathematical and rule of thumb) the researcher used the method developed by Carvalho (1984), as cited in Records Management, presented in Table I below.

Table I: Sample Determination

Institution	Sample Size							
	Trainers	%	TVET Management Team	%	MSEs	%	Stakeholders	%
Wolkite	31	29	5	93	13	68	2	50
Butajira	8	20	3	37	6	29	2	50
Agena	5	23	3	50	6	50	2	50
Arekit	2	22	2	33	4	44	1	25
Emdibir	4	25	3	50	5	71	2	50
Total	**50**		**16**		**34**		**9**	

3.2.4 Questionnaire

Both structured and semi structured questionnaire were administered to key informants. On those issues which needed wider explanations, an open ended questionnaire was employed. The questionnaire were further segmented into four areas as trainers, TVET leaders, MSE operators and stakeholders

3.2.5 Interview guidelines

Structured, Semi-structured, and Open-ended interview guidelines were developed and used to generate relevant data from sample households and project informants. In this regard Kothari, 1985 stated that:

> *Interview in general is very flexible and can be used to collect large amounts of information. Trained interviewers can hold the respondent's attention and are available to clarify difficult questions. They can guide interviews, explore issues, and probe as the situation requires. Personal interview can be used in any type of questionnaire and can be conducted fairly quickly. Interviewers can also show actual products, advertisements, packages and observe and record their reactions and behavior.*

3.2.6 **Participatory** Check list

Checklists and various participatory tools were used to come up with relevant information pertaining to information on the issue.

3.2.6 Observation

During his stay in the field, the researcher tried to systematically observe realities on the ground. Accordingly, Transit-Walks and informal discussions with key informants of community members were undertaken. As MacDonald & Nicola Headlam stated:

"Observation can yield information which people are normally unwilling or unable to provide."

3.3 Data Type Sources and Collection Procedures

3.3.1 Data Type and Sources

Quantitative and qualitative data from both primary and secondary sources were generated to be used as an input for the research findings.

The study was based on data obtained through in-depth office surveys, structured interviews with chairpersons and representatives and technical evaluations of each system. The study also included qualitative data that was collected from MSE members using participatory methods in a focus group format. Besides, qualitative data was generated from an in-depth interview with TVET leaders. Similarly, official statistics, plans and reports available in the implementing process were the major sources of secondary data in this study.

3.3.2 Collection Procedures

The process started with a preliminary survey. Under this preliminary survey, general and descriptive figures of the existing industry extension service were gathered. Catherine, 2002 stated that:

> *Descriptive research attempts to describe systematically a situation, problem, phenomenon, service or program, or provides information about , say, living condition of a community, or describes attitudes towards an issue.*

The purpose of the survey was to equip the researcher with general information that was used as an input in subsequent preliminary planning and sample selection tasks. After that, pilot surveys on all the offices, TVETs and MSEs were undertaken. The data collected during this survey was used to determine the sample informants to the study. Finally, the actual data collection, where

questionnaires and interview guidelines were administered to each of the respondent households as well as to the project informants, was undertaken.

3.4 Data Analysis and Interpretation

The data analysis and interpretation is done by using table by computing total, percentage, ratio, and average.

Accordingly, relevant statistical tool; that is descriptive is employed where appropriate. Here, it is also worth mentioning that comparative statistical analysis and interpretation methods are applied for comparing similarities and differences between towns and TVETs.

With regard to the qualitative data collected through interview and observation are analyzed using simple table to compare total and percentage.

A total of 109 questionnaires were distributed in TVET institutions and towns and Woredas of Guraghe Zone. All of the copies of the questionnaire were filled out and returned to the researcher. The data included on the instruments were meant to collect intensive information to the assessment of industry extension service in the Zone. The first section of the questionnaire contains the general information about respondents; i.e name of the TVET, sex, educational background, marital status, occupational area, and position. The major questions related to each problem are included in the second section of the questionnaire. Multiple choices, open ended and ranking type of questions are devised in the questionnaire.

Interview was also used as one of the data collection instrument. Interview questions were presented to the Wolkite Polytechnic College Dean and Vice Deans, Wolkite City MSEs Office Head, Guraghe Zone Omo Micro finance Head, and Ezya Woreda MSEs Head. Ten interview questions were administered for the representatives in order to collect some supportive data on implementation of industry extension service in Guraghe Zone.

CHAPTER 4

4. PRESENTATION, DATA ANALYSIS AND INTERPRETATION

4.1 PRESENTATION

This section of the research deals with the presentation, analysis and interpretation of the data gathered from trainers and deans of TVET colleges/Institutions and operators of MSEs and stakeholders in SNNPR, Gurage Zone on implementation of industry extension service using questionnaire, observation of documents and interview. The data obtained trough questionnaire, interview and observation were analyzed and interpreted in view of the basic questions stated.

The section is divided in to four portions. The first portion consists of analysis on the current practice of industry extension service in Gurage Zone. The second portion focuses on how effective the industry extension is so far. The third portion focuses on analysis on the issue of challenges of implementing industry extension service in Gurage Zone. The fourth and final portion incorporates the analysis on the roles and contributions of the other stakeholders.

4.2 Data Analysis

The researcher and data collection team administered four types of questionnaire to trainers, deans, operators of micro and small enterprises and other stakeholders. It is clustered in to different categories for analysis based on the raised questions and the source of data. The analysis is conducted using SPSS Statistics 20.

1. Characteristics of Respondents by sex, marital status, level of educational qualification, occupation, and town.

Table : Demographic analysis of respondents

No	Item	Descriptors	Trainers		TVET Leaders		MSE Operators		Stakeholders	
			No	%	No	%	No	%	No	%
1	Sex	Male	43	86	16	100	32	94.11	9	100
		Female	7	14	0	0	2	5.89	0	0
	Total		**50**	**100**	**16**	**100**	**34**	**100**	**9**	**100**
2	Marital Status	Single	37	74	6	37.5	20	58.82	-	-
		Married	13	26	10	62.5	14	41.18	-	-
		Divorced	0	0	0	0	0	0	-	-
		Widowed	0	0	0	0	0	0	-	-
	Total		**50**	**100**	**16**	**100**	**34**	**100**	**-**	**-**
3	Occupational area	Manufacturing	8	16	-	-	6	17.64	-	-
		Construction	20	40	-	-	23	67.65	-	-
		Automotive	10	20	-	-	2	5.88	-	-
		ICT	8	16	-	-	2	5.88	-	-
		Business	0	0	-	-	1	2.95	-	-
		No qualification	2	4	-	-	0	0	-	-
		Electrical	2	4	-		0	0	-	-
	Total		**50**	**100**	**-**		**34**	**100**	**-**	**-**
4	Level of education	Certificate	14	28	0	0	23	67.65	-	-
		Diploma	27	54	0	0	8	23.53	-	-
		Degree	9	18	15	93.75	3	8.82	-	-
		MA and above	0	0	1	6.25	0	0	-	-
	Total		**50**	**100**	**3**	**100**	**34**	**100**	**-**	**-**
5	Position	Dean	0	0	5	31.25	-	-	-	-
		V/Ac/Dean	0	0	7	43.75	-	-	-	-
		V/TeCAT Dean	0	0	2	125	-	--	-	-
		Coordinator	0	0	2	12.5	-	-	-	-
		Trainer	48	96	0	0	-	-	-	-
		Dep. Head	1	2	0	0	-	-	-	-
		Shop Assistant	1	2	0	0	-	-	-	-
		Chaire person	0	0	0	0	-	-	4	44.44
		Secretary	0	0	0	0	-	-	3	33.33
		Member	0	0	0	0	-	-	2	22.23
	Total		**50**	**100**	**16**	**100**	**34**	**-**	**9**	**100**

As shown in item 1 of Table 1, the majority of trainers, deans, MSE operators and leaders of the stakeholders were male. The ratio of female to male is 0.09 indicating that the involvement and participation of female in training, in TVETs, leading TVETs, and leading MSEs and the stakeholders is insignificant when compared to male.

As we can see from the 2nd item of the table, over 50% of the respondents are married. Therefore the ratio of single to those married is around 1:2. Significant number of trainers are responded that they are single suggesting that they are young.

Regarding the occupational area of specialization, 40% of the respondents were from the occupational area of construction. This indicates that all the TVET institutes/colleges have training on construction sector and since construction is getting a big market share in the country most of the students are also enrolled in construction sector.

As can be observed from item 4 of the table, 54% of the trainers are Diploma level, while 93.75% of TVET leaders are degree holders. Therefore, we can conclude that much of the trainings being given in the TVETs are level I and level II. Moreover, contrary to the TVET strategy, we can observe that most of the trainers are not at least first degree holders.

2. The current practice of industry extension service in Woredas and Towns of Guraghe Zone

2.1 Trainers' view of the current practice of industry extension service in Guraghe Zone.

Trainers were asked whether they have been engaged in the industry extension service and the type of package they have been implementing so far. Their responses are presented in the following table.

Table 2: Trainers' engagement in industry extension service by packages

Name of TVET Institute	Engagement	Type of package given by trainers						
		Skill Gap	Kaizen	Tech. Transfer	Entrepreneurship	All of the packages	Skill gap, kaizen, and Tech. Transfer	Total
Wolkite	Yes 31 No = 0	2	10	0	2	9	8	31
Butajira	Yes = 7 No = 0	0	2	1	0	0	4	7
Agena	Yes = 5 No = 0	0	0	2	0	0	3	5
Arkit	Yes = 2 No = 0	0	2	0	0	0	0	2
Ebdibir	Yes = 3 No = 1	0	3	1	0	0	0	4
Total	Yes = 48 No = 1	2	17	4	2	9	15	49
Percentage	Yes = 98% No = 2%	4.08%	34.69%	8.16%	4.08%	18.37%	30.62%	100%

As it is stated in Table 2, out of the 50 trainers, 98% of them have responded that they have engaged in industry extension service in Guraghe Zone. This shows that the trainers have a better understanding about the industry extension service and hence its full packages. Only one trainer at Emdibir St Antonio's TVET Institute responded she was not involved in any industry extension service.

However, during the observation of documents and interview with TVET leaders and leaders of the stakeholders, the implementation of industry extension done so far is not supported with evidences because most of the interviewee failed to show any related document.

When asked how often they have been involved in the implementation, almost all of them responded throughout the year without any schedule some of them ones per week.

34.69% of the total trainers were engaged on Kaizen implementation in the MSEs. Skills gap and entrepreneurship training are the two industry extension packages where the least of trainers are engaged in. Moreover, 30.62% of the total trainers are engaged on the implementation of industry extension service through skill gap training, kaizen and technology transfer packages.

During the observation, the researcher has seen that there are signs of kaizen in every workshop of the MSEs observed. All of the workshops observed have a kaizen board, signage, working areas, machine areas, assembly areas, finished works areas, and tools room areas. This indicates that kaizen as one package of the industry extension service is well implemented in the workshops of the MSEs.

However, some operators of the MSEs responded to the interview questions that they don't know what kaizen is. Some of the workshops also returned back to the old system by ignoring the procedures they have learned during the implementation of kaizen. This shows that there is no follow up after implementation.

The respondents were further asked on the current implementation of industry extension service. The following table depicts this.

Table 3: Implementation of industry extension service by sector

Occupation	Place of Implementation	Number of responses	Percentage
Manufacturing Technology	Workshop of the enterprise	0	0
	Workshop of the TVET	0	0
	Both in enterprises and TVET	6	85
	In other company	1	15
Construction Technology	Workshop of the enterprise	5	25
	Workshop of the TVET	3	15
	Both in enterprises and TVET	10	50
	In other company	2	10
Automotive Technology	Workshop of the enterprise	0	0
	Workshop of the TVET	0	0
	Both in enterprises and TVET	8	88
	In other company	1	12
Information Technology	Workshop of the enterprise	2	25
	Workshop of the TVET	1	12.5
	Both in enterprises and TVET	3	37.5
	In other company	2	25
Business and Services	Workshop of the enterprise	0	0
	Workshop of the TVET	0	0
	Both in enterprises and TVET	0	0
	In other company	0	0
No Specialization	Workshop of the enterprise	0	0
	Workshop of the TVET	0	0
	Both in enterprises and TVET	1	50
	In other company	1	50
Electrical	Workshop of the enterprise	1	50
	Workshop of the TVET	0	0
	Both in enterprises and TVET	1	50
	In other company	0	0

Overall	Paces	Wolkite	Butajira	Agena	Arkit	Ebdibir
	Workshop of the enterprise	8	0	0	0	0
	Workshop of the TVET	1	0	0	2	1
	Both in enterprises and TVET	18	5	3	0	3
	In other company	3	2	2	0	0

As we can understand from Table 3, 60.43% of the trainers provided the industry extension service packages both in the workshops of the TVET institutions/colleges and the micro and small enterprises. Only Wolkite Polytechnic College's trainers use the workshop of enterprises for implementation of the industry extension service. All the 5 trainers from Arekit TVET institute responded that they offer the packages in the workshop of the TVET institute. It clearly shows that the trainers use different workshops for the trainings.

When interviewed about the place of implementation of industry extension service, TVET leaders responded that they want the training to take place in the workshops of the MSEs. However, due to the lack of well organized workshops and lack of training facilities they are obliged to conduct in the TVETs workshops.

Since some of the packages like kaizen cannot be implemented outside of the workshops of the enterprises a due attention must be given to conduct the implementation in the workshops of the enterprises.

As stated in the table, construction, information technology and electrical technology occupations' related industry extension packages are better provided in the workshops of the micro and small enterprises. Nevertheless, among the 48 trainer respondents more than 60% of them provided industry extension service in both the workshops of the TVET and the micro and small enterprises.

2.2 Deans' and training coordinators' view on the current practice of industry extension service in Guraghe Zone

Questions regarding the current practice of industry extension in Guraghe Zone were distributed to 16 Deans, Vice Deans and Training Coordinators of the TVET institutions/colleges. Their responses are analyzed as follows.

Table 4: Budget proposal and follow up of MSEs by TVETs

Name of TVET	Frequency of visit				Percentage of the budget
	Only one time	Two times	Three times	Four times	
Wolkite Polytechnic College	2	0	0	2	More than 5
Butajira TVET Center	0	1	1	1	More than 5
Agena TVET Institute	0	0	0	3	3-5
Arekit TVET Institute	0	1	0	1	3-5
Emdibir St. Antonios TVET Institute	0	0	0	3	No budget
Total	2	2	1	10	
Percentage	13%	13%	7%	67%	100%

As we can see from the Table 4, 3 of the TVET leaders (Deans, Vice Deans, and Training Coordinators) responded that the budget share of the industry extension service is more than 5% of the annual budget of their TVET institute/college. Emdibir St. Antonios TVET Institute does not have any budget proposal form industry extension service. All the government institutions/colleges responded that they have a budget proposal for the industry extension service which equals at least 3% of their annual budget proposal. Therefore this indicates that a due attention is given for the implementation of industry extension service by TVET institutions.

One of the challenges that the TVET leaders mention during interview was lack of financial resources for payments of premium for trainers and coordinators when they move from one city or Woreda to another. This is because the budget they allocate in year is not enough often. However its share to the total annual budget is good.

As we can understand from the same table, 67% of the Deans, Vice Deans and Training Coordinators responded that they implement industry extension service 4 times in an academic year. This shows that TVETs have a schedule to visit the MSEs at least per quarter annual basis which is also important for performance evaluation and report preparations.

The interview conducted on trainers also shows that one trainer, among who were interviewed, visits one MSE on average of 3.75 per one year. This concludes that the involvement of the industry extension service in the regular training program is almost in act.

Table 5: Reasons to implement industry extension service by TVET institute/college

Name of TVET College/Institute	Reasons		
	Because members of MSEs are assumed to be graduates of TVET	Because it is government's direction	Because TVETs are rich in resources
Wolkite Polytechnic College	2	1	1
Butajira TVET Center	0	2	1
Agena TVET Institute	1	1	1
Arekit TVET Institute	0	2	0
Emdibir St. Antonios TVET Institute	1	1	1
Total	4	7	4

As we can see from Table 5, 47% of TVET leaders responded that TVET institutes/colleges take the responsibility of implementing industry extension service because it is government's direction while 26.5% and 26.5% of them responded that MSEs are assumed to be graduates of TVET and TVETs are rich in resource. This might suggest that some of the leaders are implementing the packages without deep knowledge of the packages.

Almost all of the interviewees responded that the industry extension service is provided by TVETs because graduates of the MSEs are expected to be graduates of the TVETs in the future.

2.3 Micro and small enterprises' operators view on the current practice of industry extension service in Guraghe Zone

Questions related to the current practice of industry extension service was distributed to 34 operators of micro and small enterprises in five towns of Wolkite, Butajira, Agena, Arekit and Emdibir. The entire questionnaire were filed out and returned. The data collected with this regard is analyzed as follows with the use of table and numeric calculations.

Table 6: Properly applied and familiarity comparison of industry extension service packages;

Name of TVET	Conditions	Kaizen	Tech. Transfer	Skills gap training	Entrepreneurship training	All packages
Wolkite	Properly applied	5	0	3	0	5
	Familiar	6	1	6	0	
Butajira	Properly applied	1	0	1	0	4
	Familiar	2	0	3	1	
Agena	Properly applied	2	0	2	0	2
	Familiar	2	0	4	0	
Arekit	Properly applied	1	1	0	0	2
	Familiar	2	0	0	2	
Emdibir	Properly applied	3	0	1	0	1
	Familiar	3	0	1	1	
Overall	Properly applied	35%	3%	21%	0%	41%
	Familiar	44%	3%	41%	12%	

As stated in Table 6, 35% of the MSE operators responded that Kaizen is properly implemented. Moreover, 0% of the operators responded that entrepreneurship is properly implemented. In general, 41% of them responded that all the four packages are properly implemented. And also as stated earlier all of the workshops of the MSEs observed have implemented kaizen.

44% of the operators were familiar with kaizen while 41% of them are familiar with skill gap training which is essential for the survival of the MSEs. Only 3% of the operators are familiar with technology transfer indicting that a lot to be done in transferring new technological outputs which will increase productivity and quality of product or service.

Moreover, the operators must be shown some technological outputs and their advantages as compared to the manual (traditional) works.

Table 7: Contributions of TVETs to develop MSEs

Occupations	TVETs for Self confidence Development	Impact of skill gap training on productivity
	Strongly Agree	Strongly Agree
Manufacturing Technology	50%	66.66%
Construction Technology	69.56%	69.56%
Information Technology	50%	50%

As stated in Table 7: all the respondents responded that TVET program will prepare them to develop self confidence. Moreover, around 59% of the operators strongly agree that TVET program develops self confidence. More than 50% of construction sector operators of the MSEs have strongly agreed that TVET program prepared to develop self confidence.

As shown in the table, 67% of the operators respond that the skill gap training they have taken improved their ability to do business. Moreover around 70% of the operators strongly agree that skill gap training will help them perform their business in better capability. This indicates that identifying their skills gap and giving training plays a vital role in the development of the MSEs.

The results in the interview and observation phase of the study revealed also there is a real change in the ability of the operators to produce and create qualities. Most of them responded the training they got from the TVET institutions helped them to make quality products with minimum cost and effort with a short time of period.

Table 8: TVETs contribution in helping MSEs

Town	Operators view about TVET institute/college				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Wolkite	0	2	3	0	8
Butajira	0	0	0	1	5
Agena	0	0	1	1	4
Arekit	0	0	0	2	2
Emdibir	0	0	0	2	3
Total	0	2	4	6	22
Percent	0%	6%	12%	17%	65%

As shown in Table 8, 65% of operators of MSEs strongly agreed that TVET institute/college around them is helping to the maximum level. Around 62% of the respondents in Wolkite town strongly agreed that Wolkite Polytechnic College is helping them to the maximum level. However a remarkable 6% of the operators disagreed that TVETs need to do a lot to work.

3. Effectiveness of Implementation of Industry Extension Service in Guraghe Zone

3.1 Trainers' view on effectiveness of industry extension service in Guraghe Zone

A total of 50 trainers from the five TVET institutions and colleges were selected to respond on the effectiveness of industry extension service in Guraghe Zone. All the questionnaire are filed out and collected for analysis. The following portion will analyze the data gathered in this regard.

Table 9. Effectiveness of occupational areas on operators' of the MSEs.

Name of TVET Institute	Responses				
	By providing skills gap training	By implementing Kaizen	By offering technological outputs	By providing entrepreneurship training	By implementing all industry extension packages
Wolkite	15	5	5	4	1
Butajira	1	2	2	2	0
Agena	0	0	1	4	0
Arekit	0	2	0	0	0
Emdibir	0	3	1	0	0
Total	16	12	9	10	1

As it is shown in Table 9, out of the 50 trainers, 16 of them responded that skill gap training helps graduates to acquire a skill, knowledge and attitude. Moreover, most of Wolkite Polytechnic College's trainers believe that providing skill gap training can help graduates of an occupation to develop the required skills.

None of the Agena, Arekit and Emdibir St. Antonios TVET Institutes responded providing skills gap training will help graduates.

3.2 Operators of the MSEs' responses and data analysis on the effectiveness of industry extension service in Guraghe Zone.

Table 10: Operators response on TVET training for self confidence development, self employability and technology for productivity increase

Name TVET	TVETs to develop self confidence		Technology transfer to increase production		Entrepreneurship training for self employment	
	Agree	Strongly agree	Agree	Strongly agree	Agree	Strongly agree
Wolkite	53.84%	46.16%	30.77%	53.86%	38.46%	46.15%
Butajira	16.67%	83.33%	-	100%	33.33%	66.67%
Agena	33.33%	66.67%	16.67%	66.67%	16.66%	83.34%
Arekit	50%	50%	75%	25%	50%	50%
Emdibir	50%	50%	20%	80%	60%	40%

As stated in Table 10, 100% of the stakeholders agreed that TVET training develops self confidence. Regardless of whether the operators are graduates of TVET or not, all of them agreed that training in the TVET develops self confidence.

Self confidence on the other hand helps the operators to take calculated risks and make business decisions which will lead them to better income and hence profit.

As we can observe from the same table, 67% of the operators strongly agreed that the newly developed technological outputs by TVETs increase their productivity.

Technology is anything that can enhance productivity. Technology increases efficiency. Technology helps to minimize cost and maximize the quality of products and services. Therefore most of the operators believed new technological outputs developed by TVETs and transferred to them will make them more productive, efficient, and profitable.

In addition, 56% of the operators strongly greed that the entrepreneurship course they took help them to be self employed. In general, almost all of them agreed that they have believed that entrepreneurship course will help to be self employed.

Entrepreneurship is about creation and innovation. When the operators strongly believed that entrepreneurship will help them to be self employed, it means they will be able to create their own business and even employ the others.

Starting from establishment and business plan development up to the preparation of financial statements, entrepreneurship is essential for the MSEs. An average of 4.25 MSEs shown their business plan they prepared after the industry extension service but most of them still use the one developed by business people on payment.

Keeping financial records is one of the items included in the training of entrepreneurship that will help the MSEs to know the status of their business and how much they worth periodically. During the observation phase 100% of the MSEs have a financial records although it lacks reports.

3.3 Stakeholders' response on effectiveness of the industry extension service in Guraghe Zone

Nine representatives of the stakeholders from the five towns were randomly selected and given questions related to the effectiveness of the industry extension service. All the questionnaire were properly filed and returned. The following part shows the data analysis of their responses.

Table 11. Responses of stakeholders on which package of the industry extension service is better implemented in Guraghe Zone.

Town	Response			
	Skill gap training	Technology transfer	Kaizen	Entrepreneurship training
Wolkite	1	0	1	0
Butajira	1	0	1	0
Agena	1	0	1	0
Arekit	0	0	1	0
Emdibir	0	0	2	0
Total	3	0	6	0

As indicted in Table 11, 6 (67%) of the 9 stakeholders responded that kaizen is better implemented in Guraghe Zone while 3(33%) of them responded skill gap training is better implemented.

However, 0% of the stakeholders responded that technology transfer is well implemented in the Zone. TVET institutions and stakeholders must work together to implement all the packages proportionally as it is necessary for the stakeholders.

As concluded in the observation phase of the study, the stakeholders better follow up the kaizen package as compared to the other packages. Some documents revealed in their respective offices have a heading *kaizen* rather than industry extension service. This indicates that they have a connotation between the two terms.

4. Challenges of Implementation of Industry Extension Service in Guraghe Zone

4.1 Trainers' responses on challenges of implementation of industry extension service in Guraghe Zone

A total of 50 trainers were selected from the five TVET institutes/colleges randomly. Questions regarding the challenges of industry extension service in Guraghe Zone were distributed and all

of them are filed out and returned. The following part of this section discusses the data analysis of the collected data.

Trainers were asked if their TVET institute/college has a follow up program after the implementation of industry extension service. 98% of the trainers responded that they have a follow up schedule after the implementation.

The analysis for their responses on the rest of the questions is presented in tables, figures, and numeric as follows.

Table 12. Trainers' response on who takes the responsibility of follow up after implementation of industry extension service in their TVET institute/college

Name of TVET College/Institute	Response			
	TVET Management	Department Heads	Trainers	All academic and TeCAT Staff Members
Wolkite Polytechnic College	0	0	0	30
Butajira TVET Center	0	1	1	5
Agena TVET Institute	0	0	0	5
Arekit TVET Institute	0	0	0	2
Emdibir St. Antonios TVET Institute	0	0	0	5
Total	0	1	1	47

As shown in Table 12, 94% of the trainers responded that all the academic and TECAT staff members follow up after implementation and TVET's managements' contribution to follow up is 0%. This indicates that almost all of the personnel in the TVET institutions are involved in the implementation of industry extension service in their respective towns and woredas.

Only 2% of the trainers responded that department heads and trainers are the responsible ones for the implementation.

Table 13: Challenges of implementing industry extension service in the MSEs given by TVET leaders and sakeholders

Name of TVET College/Institute	Challenges			
	Trainers' lack of skill to train all the packages	Operators of the MSEs are not willing to be trained	Lack of follow up by stakeholders	The TVET institute does not have regular schedule to implement
Wolkite Polytechnic College	8	10	5	0
Butajira TVET Center	3	2	2	1
Agena TVET Institute	0	4	0	0
Arekit TVET Institute	2	0	0	0
Emdibir St. Antonios TVET Institute	0	0	2	2
Total	13	16	9	3

As shown in Table 20, trainers indicated that trainers' lack of skill, operators' unwilling to be trained, stack holders' lack of follow and TVETs lack of schedule to implement the packages are the challenges to implement industry extension service in the MSEs. Moreover, 31% of them responded that the MSEs are not willing to be trained.

This indicates that much needs to be done to aware the MSEs about the industry extension service because if they are not willing to take a training and forced to learn, there will be no change on their development and productivity.

4.2 Deans, vice Deans and Training Coordinators' responses on challenges of implementation of industry extension service in Guraghe Zone

Sixteen deans, vice deans and training coordinators were randomly selected from the five TVET institutions/colleges given a question to mention the challenges they face previous implementation of industry extension service. All of the questionnaire were filed out and returned. The data gathered is analyzed as follows.

Table 14: TVET administrators' response on challenges of industry extension service based on their past experience.

Name of TVET College/Institute	Challenges Mentioned			Total
	Lack of awareness by MSE operators	Lack of follow up by stakeholders	I personally have a knowledge gap about industry extension service	
Wolkite polytechnic college	0	4	0	4
Butajira TVET Center	3	0	0	3
AgenaTVET Institute	0	2	1	3
Arkit TVET Institute	0	1	1	2
Emdibir Antonios TVET Institute	0	1	1	2
Total	3	10	3	14
Percentage	21.4%	62.5%%	21.4%	100%

As indicated in Table 21, around 62.5% of the TVET leaders responded that lack of follow up by the stakeholders is the major challenge in implementing industry extension service in Guraghe Zone.

Follow up is necessary after the implementation of the industry extension. All the stakeholders including the TVETs must prepare a check list to evaluate whether the implemented industry extension packages are sustained or not.

As the documents of the stakeholders are observed in their respective offices none them were able to show their check list that the use for follow up purposes. However, almost all of the interviewee responded that they randomly follow up without and check list and regular schedule.

4.3 Operators of the MSEs responses on challenges of industry extension service in Guraghe Zone

A total of 34 operators of the MSEs are randomly selected from the five towns of the Zone. Questions pertaining to challenges of industry extension service were included in the questionnaire. The data collected regarding this issue are analyzed as follows.

Table 15: MSEs view of the contribution of industry extension service and follow up conditions.

S. No	Town	Industry extension service minimizes cost		Lack of follow up by implementers	
		Agree	Strongly agree	Disagree	Strongly Disagree
1.	Wolkite	50%	50%	66.67%	0%
2.	Butajira	100%	100%	16.67%	0%
3.	Agena	33.33%	66.67%	66.67%	0%
4.	Arekit	75%	25%	25%	25%
5.	Emdibir	16.67%	83.33%	66.67%	0%

As we can see from Table 15, all the operators agreed that industry extension service enables them to minimize wastage and cost. This indicates that they have a believe that they are willing to implement the industry extension service in their respective MSEs.

As shown in Table 15, over 52% of the operators do not agree on the statement trainers do not follow them after the implementation of industry extension service. However, a remarkable 41% shows that the operators agree that trainers do not follow up after the implementation of industry extension service.

Alike the other stakeholders and the TVET institutions, trainers must have their own schedule together with their regular training sessions to follow up what has been implemented. This will create the chance for the operators to ask for clarity, recommendations and better ways of doing the industry extension service.

As we ask the trainers on an observation none of them show their schedule or follow up check list. This indicates that the implementation of industry extension service is hammered not only by the unwillingness of the operators, but also the negligence of the trainers to follow up and evaluate the results and impacts of the industry extension service.

4.4 Stakeholder's responses on challenges of implementation of industry extension service in Guraghe Zone

A total of 9 representatives of MSE Development office, Woreda and city Omo micro finance office, city and Woreda Trade and Industry office, from the five cities and Woredas were

randomly selected to respond on the question what challenges they observe in the implementation of industry extension service and the data collected from their response are analyzed as follows.

Table 16: Challenges of industry extension service identified by the stakeholders

Town	Identified challenges			
	Lack of awareness	Lack of awareness in the operators of MSEs	Infrastructural problems	Cooperation problem with the stakeholders
Wolkite	0	1	0	1
Butajira	0	2	0	0
Agena	0	1	0	1
Arekit	0	0	1	0
Emdibir	0	2	0	0
Total	0	6	1	2

As indicate in Table 16, the major challenge identified by the stakeholders is lack of awareness in the operators of MSEs with 67%. Moreover, 0% the stakeholders responded that lack of awareness is the challenge to implement industry extension service in the cities and Woredas of Guraghe Zone.

5. Assessment of the Roles and Contribution of Stakeholders on Implementation of Industry Extension Service in Guraghe Zone

5.1 Deans, Vice Deans and Training coordinators responses on the role and contribution of stakeholder in the implementation of industry extension service in Guraghe Zone

Sixteen TVET administrators (Deans, Vice Deans, and Training coordinators) were selected and given a question to rank the contribution of stakeholders in their respective towns.

As the result of assessment and interview with the TVET administrators revieled, 57% of the TVET leaders believe that the contribution of stakeholders in implementing industry extension service is poor and 0% of them responded their contribution is good or very good.

This indicates that the coordination between the TVET institutions and the other stakeholders in implementing industry extension service is poor. The poor coordination between these parties will have a negative effect on its effectiveness.

Table 17: Industry extension packages where the stakeholders better contribute as identified by the TVET

Name of TVET College/Institute	Responses			
	Skill gap training	Kaizen implementation	Technology transfer	Entrepreneurship training
Wolkite Polytechnic College	1	1	0	2
Butajira TVET Center	0	0	0	3
Agena TVET Institute	2	0	0	1
Arekit TVET Institute	0	0	0	2
Emdibir St. Antonios TVET Institute	0	0	0	1
Total	3	1	0	9
Percentage	23%	8%	0%	69%

As stated in Table 17, the TVET leaders responded that the stakeholders better contribute in the training of entrepreneurship. The least contribution of the stakeholders is in technology transfer with 0%. Moreover TVET administrators' of Wolkite Polytechnic College responded that stakeholder also contribute on skills gap training and implementation of kaizen.

Table 18. Suggestion given by TVET administrators to the stakeholders for better improvement of industry extension service in the future

Name of TVET College/Institute	Suggestions			
	They must have schedule and follow up accordingly	Must work together with the TVETs and take over the follow up by their own	Should assess its impact and improve in the future	Must create awareness for their workkers
Wolkite Polytechnic College	0	3	0	1
Butajira TVET Center	0	2	1	0
Agena TVET Institute	0	3	0	0
Arekit TVET Institute	0	1	1	0
Emdibir St. Antonios TVET Institute	0	1	0	0
Total	0	10	2	1
Percentage	0%	77%	15%	8%

As stated in Table 18, 77% of the TVET administrators suggested that the stakeholders must work together with the TVETs and takeover the follow up by their own in the future for better improvement of industry extension.

5.2 Operators' of the MSEs responses to the contribution of the stakeholders as compared to that of the TVETs.

Table 19. Comparison of the contribution of the stakeholders to the contribution of TVETs by operators of the MSEs.

Town	Rank				
	Very Poor	Poor	Faire	Good	Very Good
Wolkite	0	5	2	5	1
Butajira	0	0	2	4	0
Agena	0	0	3	3	0
Arekit	0	0	2	1	1
Emdibir	0	0	3	2	0
Total	0	5	12	15	2
Percentage	0%	15%	35%	44%	6%

As stated in Table 19, 44% of the operators responded that the contribution of the stakeholders is good when compared to the TVETs. Nevertheless, around 50% of the operators responded that their contribution is poor and faire.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The final part of this thesis deals with the summary of the major findings of the study, the conclusion reached at and the recommendations forwarded based on the findings.

The purpose of this study was to assess the implementation and challenges of industry extension service in Guraghe Zone. The study was confined to the representatives of stakeholder sin the industry extension service in the towns of Wolkite, Butajira, Agena, Arekit and Emdibir, operators of MSEs in these towns and trainers and administrators of TVETs in Guraghe Zone. To this end the following four research questions were formulated.

i. What is the current practice of industry extension service in Guraghe Zone?
ii. How effective are the TVET institutions in implementing the industry extension service in their respective Woredas and Towns?
iii. What are the challenges to implement industry extension service in Guraghe Zone?
iv. What are the roles and the current contributions of the stakeholders in industry extension services in Guraghe Zone?

In order to find reasonable answers for these research questions appropriate data collection procedures were deployed. Questionnaire, interview and observation of documents were the means to get data. Trainer, TVET leaders, operators of the MSEs and representatives of the stakeholders were used as a source data. The collected data were analyzed using summation, percentage, and ratio. Accordingly the following findings were observed

1.1.1 The TVET training is not being given by the required level of qualifications. The new Ethiopian TVET Strategy requires each TVET institute to provide training using at least first degree holders. But this is not the case in Guraghe Zone TVET institutions.

1.1.2 Industry extension service is started in all TVET institutions in Guraghe Zone. Regardless of the time and the type of package implemented all the TVET institutes in Guraghe Zone have already started implementing industry extension service in their respective Woredas and towns.

1.1.3 Kaizen is the most implemented industry extension package in the MSEs of Guraghe Zone. Although the TVETs are aware that industry extension service involves the four packages, only kaizen is found to be implemented well.

1.1.4 Industry extension is provided in TVET institutions. All the industry extension service packages must be implemented in world of work while production is undergoing. Bu the finding indicates that all the TVETs in Guraghe Zone are implementing them by calling the MSE operators to their respective TVETs workshops.

1.1.5 All of the TVETs have a budget proposal for the implementation of industry extension service. One of the good finding is that all of the TVETs are found to approve a remarkable share of budget to their annual budget assigned to the implementation of industry extension service.

1.1.6 Industry extension is being provided randomly without any regular schedule. Although all the TVET institutions have started implementing the service, almost all of them do not use any predetermined schedules.

1.1.7 MSE operators believe that training from the TVET institutions will help them develop self confidence and to be self employed. By taking entrepreneurial training, MSE operators will develop self confidence and we get the chance to create their own jobs which in turn enable them to hire the others.

1.1.8 Generally industry extension service is not effectively implemented in the Woredas and cities of Guraghe Zone. Only kaizen and insignificant portion of the other packages are implemented so far. So, this shows that the implementation is not effective to date.

1.1.9 All academic and TeCAT staff members are involved in the implementation of industry extension service.

1.1.10 Lack of follow up after implementation and lack of awareness are the major challenges of the industry extension service. Neither the TVETs nor the other stakeholders have a formal follow up procedures to evaluate its effectiveness and impact.

1.1.11 The coordination between the TVETs and the other stakeholders is poor. The contribution of the stakeholders to play their role in the industry extension service is poor. This leads to the conclusion that there is poor coordination to implement industry extension service in Guraghe Zone.

5.2 CONCLUSIONS

The national policy and strategy of education and training is designed to expand training to the industry to improve their productivity and enable them generate better income. This strategy brought significance change in the lively of many youth population by creating their own jobs and generating better income.

To this end industry extension service is found to be the best strategy to assess the needs of the industry and fill the gap by using TVET institutions. Although operators of the MSEs are expected to graduate from TVETs in the future, the industry extension service currently being provided is intended for all types of operators regardless of the origin of their skills.

Based o the study on the industry extension service implemented so far the following conclusions are drawn.

The finding shows that training is given by unqualified trainers which will have a negative impact on trainees acquiring of the required knowledge, skill and attitude. Moreover, this will hammed the country's economy by producing non competent youth. Lack of awareness is the other finding of the study. The TVETs have a better awareness about industry extension service. However, the operators in the MSEs and the other stakeholders have an awareness problem. Unless this awareness problem is resolved implementation of industry extension service will not be effective as it requires the due cooperation and understanding between the parties under consideration.

The industry extension service is not effective because it was, partly or totally implemented in TVET institutions. The intension requires implementing in the working areas but the reality shows the TVET still try to implement in their own TVET workshops. The budget allocation and its share to the annual budget of TVETs is good when compared to the time when the service is started.

TVETs implement the industry extension service throughout the year (at least four times in a year), but the follow up procedure to assess its effectiveness and impact is almost nil. Operators of the MSEs are better aware of the kaizen package when compared to the others. Nevertheless, the study found that they have willing to implement the other also. Operators also believe that the industry extension service is a challenge or an obstacle to them; it enables them to minimize cost and wastage of resources instead.

5.3 RECOMMENDATIONS

1. Shortage of qualified trainers in the Guraghe Zone TVET institutions is the major challenge to deliver quality outcome based training. Therefore, to solve this problem the following measures are recommended.
   a) First degree is the least requirement for TVET trainers. Upgrading all the certificate and diploma trainers to at least a first degree level may help to solve the problem.
   b) Additionally, hiring qualified trainers is the other alternative. Universities and training institutions can be used as a source of these trainers.
   c) Additional training can also be given to the certificate and diploma holders to make them more competent in training. This is helpful until all they are upgraded to at least firs degree level and to minimize trainers' turnover.
2. It is necessary to create awareness. All the analysis made indicated that much of the stakeholders do not have a clear understanding of industry extension service. TVETs need to prepare different programs to create awareness in the stakeholders and the trainers.

   The means to create awareness could be made by the use of fliers, workshops, briefings, and trainings.
3. Kaizen is only one package of the industry extension service; however remarkable number of trainers, operators and stakeholders misunderstood with industry extension service. This comes after the TVETs fail to give equal chance to all the packages during implementation.
4. TVET institutions need to organize the workshops the MSEs for the implementation of industry extension service. Implementing all the packages in the workshops of the MSEs helps to integrate all the trainings to integrate with the real production or services.. In order to do these trainers can assess each workshop of the MSEs and select one best work shop for the training. The trainers may not necessarily train the operators in their own workshops; they can look for the better organized workshop among the MSEs.
5. Follow up programs are essential to know the level of performance of the industry extension service. Therefore,
   a) Scheduled follow up program by trainers helps to evaluate the implementation program from time to time.

b) Follow up by the stakeholders not only help to see the implementation, but also ensures that they have executed their roles and responsibilities.
c) Including in the TVETs report helps to document and frequently assess its progress.

6. TVETs involvement in the industry extension service is done throughout the year but there is no time for evaluation of the performance and impact. Therefore, TVETs in coordination with the other stakeholders should have a vivid evaluation of the industry extension service implemented in each period. Moreover, it is necessary to investigate the impact of the industry extension service to see the difference between the old (traditional) way of work and the new ones.
7. The role and contributions of the stakeholders must be clearly stated and given to them. Each of the stakeholders, including the TVETs must have an agreement to be executed like:
   a) Implementation of all the packages will be done by the TVETs
   b) Financial resources and loans for establishment and daily operations is provided by Omo Micro Finance
   c) Legal establishment, registration and follow up of daily activities of the MSEs is done by the towns' and Woredas' MSE Offices and
   d) Registration, finding market, facilitating production places, and fulfilling infrastructure is done by towns' and Woredas' Trade and Industry Offices
8. Operators of the MSEs believe that all the package of the MSEs are important to them. Clear explanations supported with documents and evidences must be presented for the trainings.
9. The leaders of TVETs and the representatives of the stakeholders should associate the importance of industry extension service with the GTP.
10. Finally, the problem is not an easy one to effectively studied by a beginner as it is a new phenomenon. Therefore, the researcher would like to invite other researchers to carry out a deeper and wider study on industry extension service.

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Appendix

Addis Ababa University

School of Education and Behavioral Studies

(Management of Vocational Education)

Data Collection Form

A questionnaire to be filled by the trainers of TVET institutions in Guraghe Zone.

Dear Respondent:

The purpose of this questionnaire is to gather data pertaining to the implementation of industry extension service by TVET institutions in Guraghe Zone. Your sincere and frank answers are required to all the questions.

Thank you for taking time and answering all the questions thoroughly.

Fita Ayalew

Directions for filling in the questionnaire:

a) Please respond to multiple choice questions by circling the letter or letters of your choice.
b) For the open ended questions, please provide brief and clear responses on the blank spaces provided.

Please respond to the following questions as per the instruction given above.

1. Name of TVET college/Institution _____
2. Sex: a) Male b) Female
3. Marital Status: a) Single b) Married c) Divorced d) Widowed
4. The occupational area you are specialized in:
   _____
5. Position in the occupational sector _____
6. Your level of educational qualification:
   a. Certificate (Level I, II, and III) b. Diploma (Level IV and Level V) c. BA/BSc
   d. MA/MSc and above
7. Do you think your occupational training program provides the essential skills required for self employment?

a. Yes b. No

8. If your answer to question 7 is 'yes', how do you think will help the graduates?
   a. By providing skills gap training b. By implementing Kaizen
   c. By offering technology transfer d. By providing entrepreneurship training
9. Does your institution have an effective follow up program to implement industry extension in the micro and small enterprises around your town?
   a. Yes b. No
10. If your answer to question 9 is 'yes', who is the responsible person?
    a. TVET management b. Department heads c. Trainers
    d. All academic and technology transfer and industry extension staff members
11. Have you been engaged in implementing industry extension service in micro and small enterprises?
    a. Yes b. No
12. If your answer to 11 is yes, which part of the industry extension service did you train? (you can choose more than two)
    a. Skills gap b. Kaizen c. Technology transfer d. Entrepreneurship
13. If your answer to question 11 is 'yes', where did you conduct the training?
    a. In the workshop of the enterprises
    b. In the workshop of the TVET institution
    c. Both in the workshops of the enterprises and the institution
    d. In the workshop of and other company or enterprise
14. What type of challenges did you see in implementing the industry extension service in the micro and small enterprises?
    a. Trainers' lack of skill to train all the packages of industry extension service
    b. Operators of the micro and small enterprises are not willing to take the training
    c. Lack of follow up by stakeholders
    d. The TVET institution does not have a regular schedule to implement the industry extension service
    e. Lack of materials and resources to implement the industry extension service
15. Please write your suggestions to improve the implementation of industry extension service in your
    area_____

Addis Ababa University

School of Education and Behavioral Studies

(Management of Vocational Education)

Data Collection Form

A questionnaire to be filled by the deans of TVET institutions in Guraghe Zone.

Dear Respondent:

The purpose of this questionnaire is to gather data pertaining to the implementation of industry extension service by TVET institutions in Guraghe Zone. Your sincere and frank answers are required to all the questions.

Thank you for taking time and answering all the questions thoroughly.

Fita Ayalew

Directions for filling in the questionnaire:

c) Please respond to multiple choice questions by circling the letter or letters of your choice.
d) For the open ended questions, please provide brief and clear responses on the blank spaces provided.

Please respond to the following questions as per the instruction given above.

1. Name of TVET College/Institution _____
2. Sex: a) Male b) Female
3. Marital status: a) Single b) Married c) Divorced d) Widowed
4. Position in the TVET institution _____
5. Your level of educational qualification:
   a. Certificate (Level I, II, and III) b. Diploma (Level IV and Level V) c. BA/BSc
   d. MA/MSc and above
6. How many MSEs are under the institute?
   a. One - Three b. Four - Six c. Seven - Nine d. more than 10
7. Does your institution have a budget proposal for industry extension service?
   a. Yes b. No

8. If your answer to question 7 is 'yes', what is the percentage share of the total annual budget of the institution?

   a. Less than 2% b. 2% - 3% c. 3% - 5% d. more than 5%

9. Does your institution have an industry extension service schedule for the academic year?

   a. Yes b. No

10. If your answer to question 9 is 'yes', how many times does one MSEs be capacitated by the industry extension services full packages in one academic year?

    a. Only one time b. Two times c. Three times d. Four times

11. From your past experience in implementing industry extension service, what challenges can you mention?

    a. Financial and material problems

    b. Lack of awareness about industry extension service by the operators of the MSEs

    c. Lack of follow up by stakeholders

    d. I personally have a knowledge gap about industry extension service

    e. Others, please specify ----------

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12. Why do you think is implementation of industry extension is done by TVET institutions?

    a. Because members of the micro and small enterprises are assumed to be graduates of TVET institutions

    b. Because it is governments' direction

    c. Because TVET institutions are rich in resource (personnel, financial and material)

    d. Others reasons, please specify _____
    _____

13. When compared to the contribution of the TVET institute to the implementation of industry extension services, how do you rank the contribution of the other stakeholders?

    a. Very poor b. Poor c. faire c. Good d. Very Good

14. If your answer to question 13 is very poor, what do you think is the reason?

    a. Lack of awareness about the industry extension service

    b. Lack of financial and material resources

c. Lack of infrastructure provided by the government like electricity, water, and telecommunications

d. Lack of dedicated government officials

15. In your past experience of industry extension service implementation, in which areas are the other stakeholders contribute better?

a. Skill gap training b. Kaizen implementation c. Technology transfer

d. Entrepreneurship training

16. What do you suggest to the other stakeholders to do in the future for better improvement in the industry extension implementation process?

a. They must have a schedule and follow up accordingly

b. Must work together with the TVET institution during the implementation and should take the follow up process by their own

c. Should assess the impact of the industry extension service done so far and take corrective measures for the future

d. Must prepare more awareness creation programs for their workers

Thank you!

አዲስ አበባ ዩኒቨርሲቲ

የትምህርትና ስነ-ባሕሪ ጥናት ኮሌጅ

(ማኔጅመንት ኦፍ ኮኬሽናል ኤጁኬሽን)

መረጃ መሰብሰቢያ ቃለ መጠይቅ

በጉራጌ ዞን ውስጥ በሚገኙ የጥቃቅንና አነስተኛ ኢንተርፕራይዞች አባላት የሚሞላ ቃለ-መጠይቅ

የዚህ ቃለ መጠይቅ ዓላማ በጉራጌ ዞን ውስጥ የሚገኙ ቴክኒክና ሙያ ተቋማት እየተገበሩት የሚገኙት የኢንዱስትሪ ኤክስቴንሽን አገልግሎትን በተመለከተ መረጃ ለመሰብሰብ ነው፡፡ የሚሰጡን ግልጽና ታማኝነት ያለው መረጃ ለጥናቱ ወሳኝ ስለሆነ እባክዎትን በጥንቃቄ ይሙሉት፡፡

አመሰግናለሁ፡፡

ፊጣ አያሌው

መመሪያ:

ሀ) **እባክዎ እንዲመርጡ በሚጠይቀው የቃለ መጠይቅ ክፍል ላይ የመረጡትን ፊደል ወይም ፊደላት ብቻ በመክበብ እንዲመርጡ እጠይቃለሁ፡፡**

ለ) **በክፍት ቦታው ላይ እንዲጽፉ በተጠየቀው የቃለ መጠይቅ ክፍል ላይ ደግሞ ግልጽና አጭር መልስ በመጻፍ እንዲተባበሩ እጠይቃለሁ፡**

1. **ፆታ:** a) **ወንድ** b) **ሴት**
2. **የጋብቻ ሁኔታ:** a) **ያላገባ/ች** b) **ያገባ/ች** c) **የፈታ/ች** d) **የትዳር አጋር የሞተባት/ባት**
3. **የሰለጠኑበት የሙያ መስክ** _____
4. **በማኅበሩ ውስጥ ያላቸው ኃላፊነት:**_____
5. **የትምህርት ደረጃ:**
   a. **ሰርተፊኬት** (**ደረጃ** 1, 2, **እና** 3) b. **ዲኘሎማ** (**ደረጃ** 4 **እና** 5)
   c. **ዲግሪ** d. **ማስተርስና ከዛ በላይ**

6. አሁን እየተሰጠ ካለው የኢንዱስትሪ ኤክስቴንሽን አንጻር የትኛው የድጋፍ አይነት በማነበራችሁ በአግባቡ የተሰጠ ይመስሎታል? (ከአንድ በላይ መምረጥ ይቻላል)
   a. ካይዘን b. የቴክኖሎጂ ሽግግር c. የክሕሎት ክፍተት ሥልጠና
   d. የሥራ ፈጠራ ሥልጠና
7. ከሚከተሉት የኢንዱስትሪ ኤክስቴንሽን አገልግሎት ድጋፍ ዓይነቶች ስለ የትኛውን በአግባቡ ግንዛቤ አሎት (በአግባቡ ያውቁታል)?
   a. ካይዘን b. የቴክኖሎጂ ሽግግር c. የክሕሎት ክፍተት ሥልጠና
   d. የሥራ ፈጠራ ሥልጠና
8. በግል አመለካከትዎ አሁን እየተተገበረ የሚገኘው የኢንዱስትሪ ኤክስቴንሽን አገልግሎት ውጤታማ ነው ብለው ያምናሉ?
   a. አዎ አምናለሁ b. አይ አላምንም
9. ለጥራ ተራ ቁጥር 8 የሰጡት መልስ አይ አላምንም ከሆነ ምክንያቱ ምን ይመስሎታል?
   a. ከቴክኒክና ሙያ ተቋማት የሚላኩት አሰልጣኞች ብቃት የላቸውም
   c. የኢንዱስትሪ ኤክስቴንሽን ትግበራው ጊዜንና ገንዘብ ያባክናል
   d. ከትግበራ በኋላ ክትትል ያለማድረግ ችግር አለ
   e. ስለ ኢንዱስትሪ ኤክስቴንሽን አገልግሎት ግንዛቤው የለኝም
10. በኢንዱስትሪ ኤክስቴንሽን ትግበራው ላይ ስለ ቴክኒክና ሙያ ተቋማት አሰልጣኞች ያሎት አስተያየት ምን ይመስላል?
   a. በንድፈ-ሐሳብ ትምህርት ጥሩ ያስተምራሉ
   b. በትግበራ ወቅት እራሳቸው ጭምር አብረውን እያመረቱ ያሰለጥኑናል
   c. የሚጠቀሙት እንግሊዝኛ ቋንቋን በመሆኑ አይገባኝም
   d. ለመጠየቅና ለመሰልጠን እንደ ጓደኛ ስለሚቀርቡ ጥሩ ናቸው
11. በአካባቢያችሁ ካሉ ቴክኒክና ሙያ ተቋማት ከሚሰጡት የኢንዱስትሪ ኤክስቴንሽን አገልግሎት አንጻር ስለሌሎች ባለድርሻ አካላት (ጥቃ/አነስተኛ ጽ/ቤት፣ ኦሞ ማይክሮ ፋይናንስ፣ ንግድና ኢንጁስትሪ ጽ/ቤቶች...) አስተዋጽኦ ምን አስተያየት አሎት?
   a. በጣም ደካማ b. ደካማ c. መካከለኛ d. ጥሩ e. በጣም ጥሩ

12. ለጥቃቄ ተራ ቁጥር 11 የሰጡት ምላሽ በጣም ደካማ ከሆነ ምክንያቱ ምን ይመስሎታል?

a. ስለ ኢንዱስትሪ ኤክስቴንሽን አገልግሎት ያላቸው ግንዛቤ ዝቅተኛ መሆን

b. የገንዘብና የእቃ እጥረት መኖሩ

c. የመሠረት ልማት እጥረት (እንደ ኤሌክትሪክ፣ ቴሌኮሙኒኬሽን፣ ወዘተ...)

d. የመሰላቸት ሁኔታ

እባክዎ በዓረፍተ ነገር ረድፍ ላይ የሚገኙትን በጥንቃቄ ያንብቡና በምርጫዎት ስር የ √' ምልክት በማረገግ ይመልሱ::

ተ.ቁ	ዓረፍተ ነገር	በጣም አልስማማም	አልስማማም	አይታወቅም	እስማማለሁ	በጣም እስማማለሁ
1	በቴክኒክና ሙያ ተቋም አማካይነት የሚሰጠው ስልጠና በገበያ ውስጥ ተወዳዳሪ ያደርገኛል					
2	በቴክኒክና ሙያ ሥልጠና ከተሰጠኝ በኋላ በራስ መተማመኔ ጨምሯል					
3	የኢንዱስትሪ ኤክስቴንሽን አገልግሎትን በመተግበር ወጪ እና ጊዜን መቆጠብ እችላለሁ					
4	በቴክኒክና ሙያ ተቋማት የሚፈጠሩና የሚሸጋገሩ የቴክኖሎጂ ውጤቶች ምርታማነትን ይጨምራሉ					
5	በቴክኒክና ሙያ ተቋም የሚሰጠው የሥራ ፈጠራ ሥልጠና የራስን ስራ ለመፍጠር ያስችላል					
6	የሙያ ክፍተት ሥልጠና ከተሰጠኝ በኋላ ሥራ የመስራት ብቃቴ ጨምሯል (ተሻሽሏል)					
7	የቴክኒክና ሙያ ተቋማት የኢንዱስትሪ ኤክስቴንሽን አገልግሎትን ከተገበሩ በኋላ ክትትል አያደርጉም					
8	የቴክኒክና ሙያ ተቋም ሁሉንም ዓይነት የኢንዱስትራ ኤክስቴንሽን አገልግሎቶች በከፍተኛ ደረጃ እየሰጠ ነው					

አመሰግናለሁ::

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Data Collection Form

A questionnaire to be filled by the Stakeholders of Industry Extension Service in Guraghe Zone.

Dear Respondent:

The purpose of this questionnaire is to gather data pertaining to the implementation of industry extension service by TVET institutions in Guraghe Zone. Your sincere and frank answers are required to all the questions.

Thank you for taking time and answering all the questions thoroughly.

Fita Ayalew

Directions for filling in the questionnaire:

e) Please respond to multiple choice questions by circling the letter or letters of your choice.
f) For the open ended questions, please provide brief and clear responses on the blank spaces provided.

Please respond to the following questions as per the instruction given above.

1. Sex: a) Male b) Female
2. Name of town _____
3. Position _____
4. How do you evaluate the industry extension service currently being implemented by the TVET institution around you?
   a. Very good b. Good c) Faire d. Poor d. Very poor

5. If your answer to question 4 is very poor, what is your reason?
   a. No change on the productivity and profitability of the micro and small enterprises
   b. There is no coordination between the stakeholders of the industry extension service
   c. It is very costly and obstacle to the productivity of the micro and small enterprises

d. The TVET institute does not have a schedule to implement the service

e. The TVET institute is not dedicated to implement the service

6. Based on your past experience, what challenges do you see in implementing industry extension service so far?

   a. Lack of resources

   b. Lack of awareness in the side of the operators of the micro and small enterprises

   c. Infrastructure problems like electricity, road, water and telecommunications

   d. Coordination problem with the stakeholders

7. Based on your past experience, which package of the industry extension service do you think is better implemented?

   a. Skills gap training b. Technology transfer c. Kaizen

   d. Entrepreneurship training

8. Please write your suggestions that must be done in the future for better improvement of the implementation of industry extension service _____

   _____

   _____

   _____

   _____

   _____

Thank You!

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Observation Data Collection Form

1. ***Trainers***
   - 1.1 Did the trainer have annual, semi-annual, monthly, weekly schedule for the industry extension service?
   - 1.2 What evidences did the trainer show about previous implementation of at least one package of the industry extension service? (Photo, Videos, training manuals, attendance, etc...)
   - 1.3 Did the trainer have a follow up schedule and show as evidence?
   - 1.4 Evidences show to the observer to investigate knowledge about industry extension service?
   - 1.5 Did the trainer has conducted an impact assessment to show that the industry extension service implemented so far is effective?
2. ***TVET Leaders (Deans, Vice Deans, and Training Coordinators***
   - 2.1 Evidence about the budget proposal about industry extension service.
   - 2.2 Annual schedule of industry extension service.
3. ***Operators of the MSEs***
   - 3.1 Evidence about the start of at least one of the industry extension service packages (kaizen board and signs, transferred technologies, financial records, identified skill gaps, etc...)
4. ***Stakeholders (Omo Micro finance, City and Woreda MSEs Offices, City and Woredas Trade and Industry Offices)***
   - 4.1 Annual schedule for the industry extension service
   - 4.2 Recorded evidences of the previously implemented industry extension services (the packages, the number of MSEs and operators capacitated, the number of trainers involved, etc...)
   - 4.3 Evidence shown to evaluate the effectiveness and impact of the industry extension service

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Data Collection Form

Interview questionnaire

1. What is industry extension service? Can you mention and briefly describe each of the packages involved?
2. Who is the responsible person in the implementation of industry extension service in your organization?
3. What challenges can you mention in the implementation of industry extension service in your town/Woreda?
4. Did you conduct industry extension service until this time? If your answer is yes, where did you conduct?
5. Do you think the industry extension service implemented so far is effective? Why?
6. How do you evaluate the roles and contribution of the stakeholders? Why?
7. What do you suggest to be done in the future for better improvement of the implementation of the industry extension service in Guraghe Zone?
8. Do you think that all the packages of the industry extension service are proportionally implemented?
9. What is the benefit of industry extension service to the MSEs and to the country?
10. Why do you think is industry extension service is conducted by the TVETs?

Thank You!

DECLARATION

This thesis is my original work, has not been presented for a degree in any other University and that all sources of materials used for the thesis have been duly acknowledged.

Name: Fita Ayalew Dehnie

Signature: _____

Date of Submission: _____

SUBMISSION APPROVAL SHEET

This thesis has been submitted for examination with my approval as a university advisor.

Name: Girma Zewdie (Associate Proffessor)

Signature: _____

Date of Submission: _____