MINISTRY OF INDUSTRY
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

THE STUDY ON QUALITY AND PRODUCTIVITY IMPROVEMENT (KAIZEN) IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

FINAL REPORT

JUNE 2011

JAPAN INTERNATIONAL COOPERATION AGENCY
（JICA）

GLOBAL DEVELOPMENT &
MANAGEMENT CONSULTANTS INC.

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MAP of The Federal Democratic Republic of Ethiopia

A Post-Seminar photo with participants of the 1st group pilot companies
(24th August 2010: KAIZEN Experience Workshop)

A Post-Seminar photo with participants of the 2nd group pilot companies
(27th August 2010: KAIZEN Experience Workshop)

Basic KAIZEN Knowledge Seminar for the 1st group pilot companies
(13th July, 2010)

KU members and JICA study team members: before two member' departure for Japan
(25th February, 2011)

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LIST OF ABBREVIATIONS

3S	Three S: Sort; Set-in-order; Shine (First three S's of 5S)
5S	Five S: Sort; Set-in-order; Shine; Standardise; Sustain
AAU	Addis Ababa University
ADLI	Agricultural Development-Led Industrialisation
AGR	Agro-Processing (sub-sector)
BME	Basic Metal and Engineering (sub-sector)
BPR	Business Process Reengineering
CHM	Chemical (sub-sector)
CSA	Central Statistic Agency
ecbp	Engineering Capacity Building Programme
E.C.	Ethiopian Calendar
EDRI	Ethiopian Development and Research Institute
EIS	Ethiopian Industrial Standard
EKI	Ethiopian KAIZEN Institute
ES	Ethiopian Standards
FDRE	Federal Democratic Republic of Ethiopia
FeMSEDA	Federal Micro and Small Enterprises Development Agency
GDP	Gross Domestic Product
GRIPS	National Graduate Institute for Policy Studies
GTP	Growth and Transformation Plan
GVP	Gross Value of Production
HLF	High Level Forum
HR	Human Resources
IE	Industrial Engineering
IEO	Industrial Extension Officer
ISDIC	International Standard Industrial Classification of All Economic Activities
ISO	International Organisation for Standardisation
JICA	Japan International Cooperation Agency
KU	KAIZEN Unit (A unit of MOI)
KYT	Kiken Yochi Training (Hazard-prediction training)
LTH	Leather (sub-sector)
LITI	Leather Industry Development Institute
MIDI	Metal Industry Development Institute
MDGs	Millennium Development Goals
MLCs	Medium and Large Companies
M/M	Minutes of meeting
MOE	Ministry of Education

MOI	Ministry of Industry
MOT	Ministry of Trade
MOTI	Ministry of Trade and Industry
MoUDC	Ministry of Urban Development and Construction
MSE	Micro and Small Enterprises
PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
PDCA	Plan, Do, Check and Act
P.L.C. (or PLC or plc)	Private Limited Company
PP	Pilot project
QC	Quality Control
QCC	QC Circle
QCD	Quality, Cost, and Delivery
QMS	Quality Management System
QPM Sheet	Qualitative Performance Monitoring Sheet
QSAE	Quality and Standard Agency of Ethiopia
ReMSEDA	Regional Micro and Small Enterprises Development Agency
S.C. (or SC or sc)	Share Company
SDPRP	Sustainable Development and Poverty Reduction Program
S/W	Scope of Work
SME	Small and Medium Enterprises
SQC	Statistical Quality Control
TICAD	Tokyo International Conference for African Development
TIDI	Textile Industry Development Institute
TPM	Total Productive Maintenance
TRA-KZN	Training in KAIZEN
TQC	Total Quality Control
TQM	Total Quality Management
TXT	Textile (sub-sector)
TVET	Technical Vocational Education and Training

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Chapter 1: Introduction

1.1 Background of the Study

The Study on Quality and Productivity Improvement (KAIZEN) in the Federal Democratic Republic of Ethiopia is a technical cooperation for development planning jointly undertaken by Japan International Cooperation Agency (JICA) and Ministry of Industry (MOI)[1] of the Government of Ethiopia. The Study originated from the request expressed by the Prime Minister Mr. Meles Zenawi at the African Taskforce meeting of the Initiative for Policy Dialogue (IPD) held in Addis Ababa in July 2008. After the deliberation of cooperation framework, the Scope of Work agreement was signed between JICA and the Government of Ethiopia in June 2009. The study was then started in October 2009 with the planned completion date of May 2011.

Ethiopia has been pursuing economic development and poverty reduction under the proactive national development strategy - Agricultural Development Led Industrialisation (ADLI) and the 5-year national economic development strategy – Plan for Accelerated and Sustained Development to End Poverty (PASDEP: 2005/2006 – 2009/2010)[2]. While Ethiopia's economic growth rate has been around 10% in annual real GDP growth since 2004, the manufacturing industry's share of GDP has remained at 13%. At the same time, the country's external trade deficit has remained high and the negative balance of payments has continued to be a significant pressure and constraint on its economic development.

Against this backdrop, the Prime Minister's request to Japan for industrial development support was made in 2008, shortly after the Fourth Tokyo International Conference for African Development (TICAD IV) in Yokohama. In response to the request, two industrial development cooperation projects were instituted, namely, this Study, and the Industrial Policy Dialogue. The Study thus formulated was to deal with assistance to improve productivity, competitiveness and business expertise in promising industries, which was a part of the agenda of private sector development assistance included in the Yokohama Action Plan announced by the Japanese Government in conjunction with the TICAD IV in May 2008. The Study focused on the KAIZEN practice, an effective means of quality and productivity improvement, which had been verified not only in Japan but also in many countries, particularly in East Asian countries. The Study was implemented in accordance with the Scope of Work signed by JICA and MOI on June 4, 2009.

The Study that started in October 2009 made steady progress under strong ownership and leadership of the Government of Ethiopia during the past 18 months. With the pilot project activities completed, the Study is now drawing to a close with very positive results that create the basis of the adaptation of

[1] The Study's counterpart agency of the Government of Ethiopia was originally the Ministry of Trade and Industry (MOTI). After the October 2010 government reorganisation that involved MOTI's restructuring into two ministries, the function of the counterpart agency of this Study was succeeded by the Ministry of Industry (MOI).

[2] PASDEP was succeeded in September 2010 by the new 5-year national plan, Growth and Transformation Plan (GTP)

KAIZEN in Ethiopia and its nation-wide dissemination going forward.

1.2 Objectives and Framework of the Study

1.2.1 Objectives of the Study

The objectives of the Study were defined by the Scope of Work as summarised below:

1) Formulate a national plan to enhance activity on quality and productivity improvement (KAIZEN) for Ethiopian enterprises in the industrial sector[3];
2) Formulate a manual which can be used for quality and productivity improvement activity (KAIZEN)[4];
3) Transfer relevant skills and techniques to the staff members of the KAIZEN Unit of the Ministry of Industry (MOI).

1.2.2 Framework of the Study

The basic framework of the Study is as follows;

1) Institutional setup:
   The Study is a joint undertaking of JICA and the Government of Ethiopia. JICA's study team (JICA study team) works with the Ministry of Industry (MOI), who forms KAIZEN Units (KU), to execute the study.
2) Study period:
   October 2009 – May 2011
3) Geographical area of the Study:
   The Study output covers the entire area of Ethiopia.
   The Study activity is conducted in Addis Ababa and its vicinity.

1.2.3 Scope and Timeframe of the Study

The Scope of Work defines the Study activities in three phases.

Phase 1 [Late October 2009 - January 2010]

- Situation analyses of the Ethiopian industrial sector
- Preparation of the pilot project (Selection of the pilot companies, developing methodological framework for the pilot project, etc.)

Phase 2 [Late January 2010 - December 2010]

- Planning on the implementation of the pilot project

[3] Based on further request from the Government of Ethiopia and discussion after the start of this study, National Plan has been re-defined to include the three parts of: (1) Dissemination (2) Institutionalisation, (3) National Movement. The Dissemination component of national plan will be formulated in this study.

[4] In relation to the manual formulation required by the Scope of Work, a set of audio-visual materials is also to be created as a tool to supplement the manual and to promote dissemination of KAIZEN.

- Implementation and evaluation of the pilot project with the selected pilot companies
- Creation and finalisation of the manual based on the evaluation of the pilot project

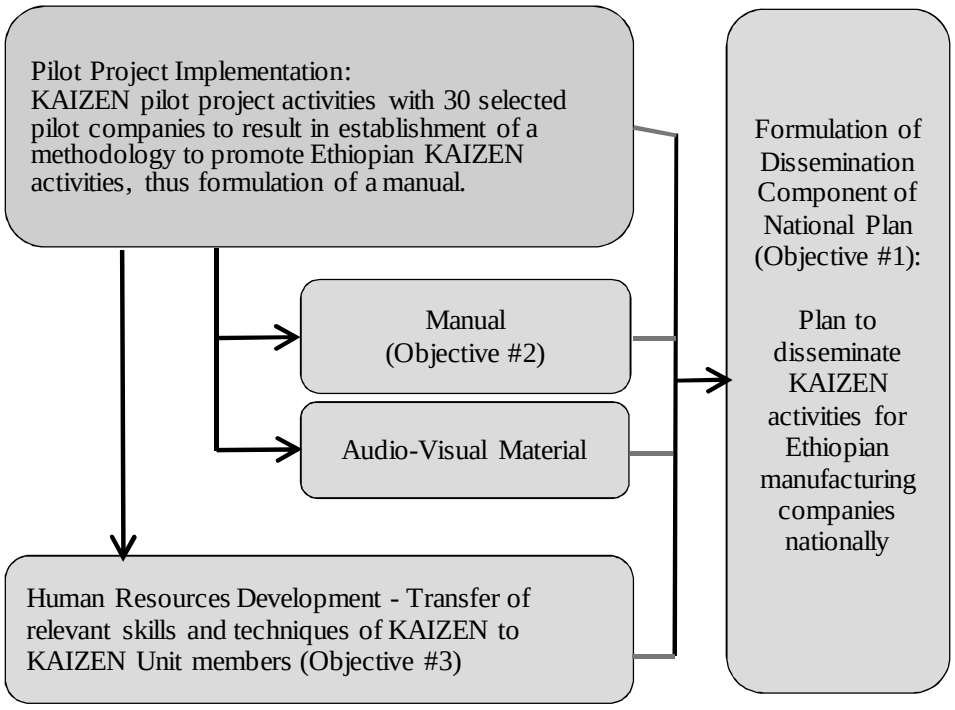
Phase 3 [January 2011 - May 2011]

- Drafting of the national plan for enhancing the KAIZEN activities in Ethiopia
- Seminars for demonstrating the pilot project outputs and methods for a wide dissemination of KAIZEN across the country
- Final capacity development activities for KU members to ensure that they complete the activities of transferring skills and techniques that take place throughout the Study period.

1.2.4 Implementation Strategy of the Study

Under the guidance specified in the Scope of Work and with the consideration of effective implementation, the Study's implementation strategy has been to place priority on the pilot project and to make the most of it for the formulation of the Study's final outputs. As the pillar of the Study activities, the pilot project is to develop and establish basic methodology of the KAIZEN activities in Ethiopia to be disseminated nationally, to develop and create the manual, to transfer relevant skills and techniques to the KU members, and to accumulate findings that will be essential in the formulation of the national plan. The implementation strategy has also been to capitalise on the training in Japan in terms of the capacity development of the KU members and key personnel of the pilot companies.

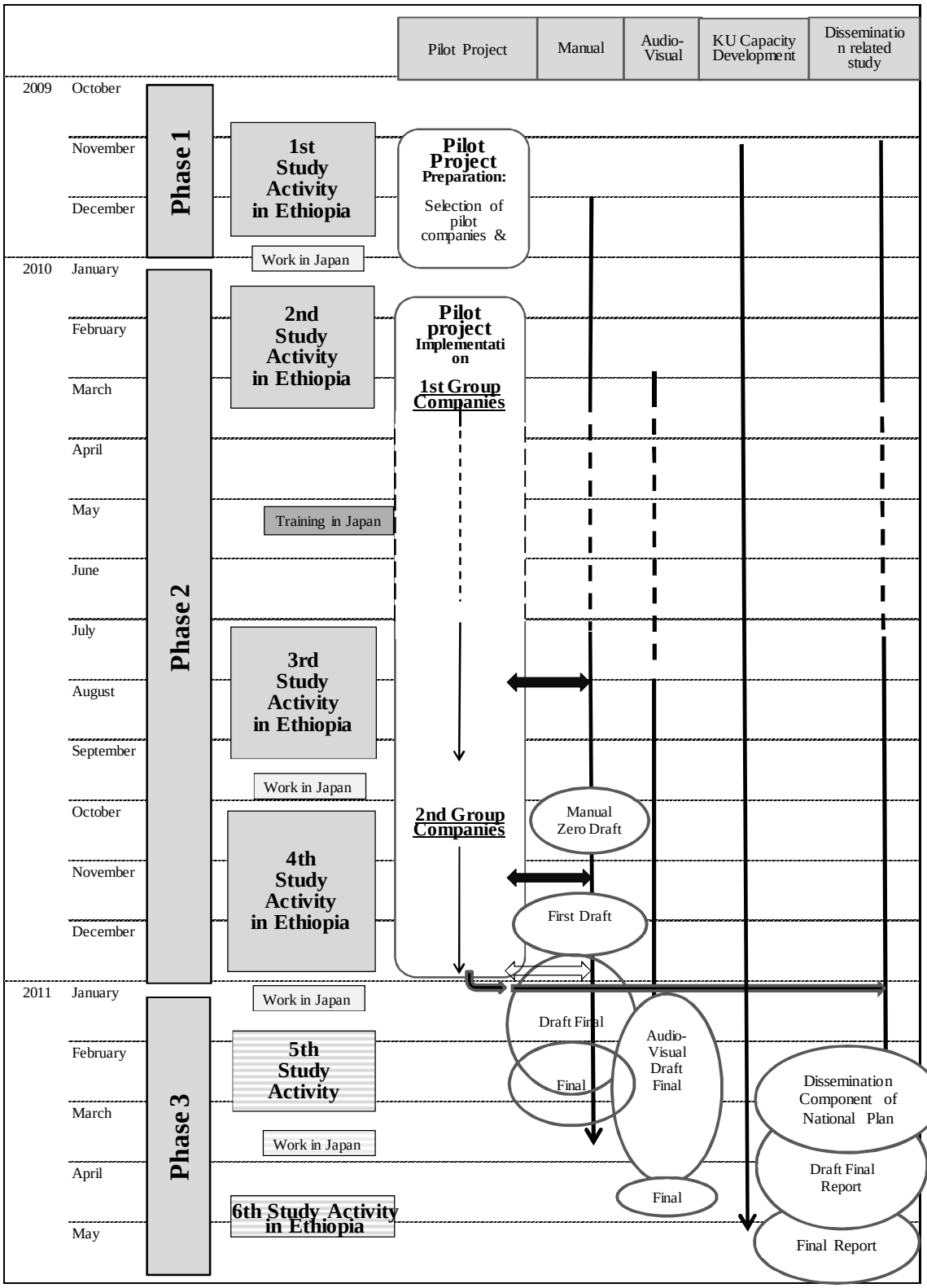
Figure- 1: Implementation Strategy of the Study



Source: JICA study team

The figure-2 is a visual presentation of the Study implementation activities in the chronological order.

Figure- 2: Schedule of Study Implementation Activities

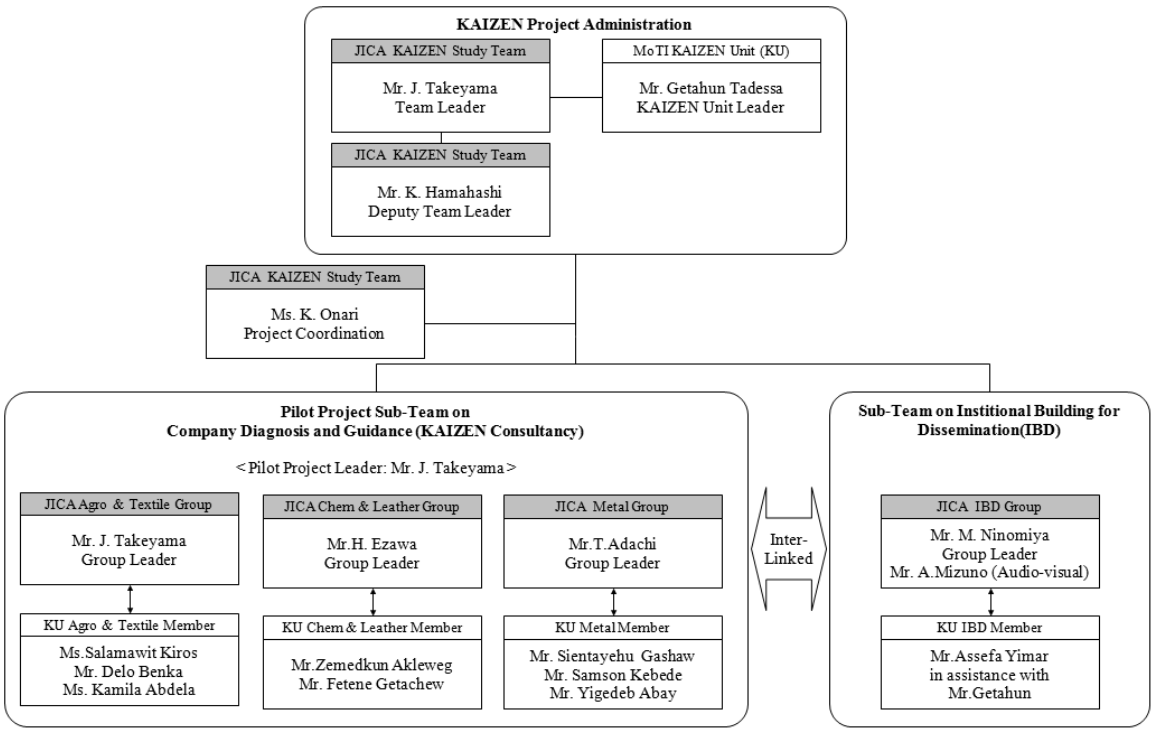


Source: JICA study team

1.2.5 Organisation for the Study

The figure-3 shows the composition of the KAIZEN Project Unit as of December 2010. The KAIZEN Project Unit is the Study's implementation organisation that is made up of JICA study team members and KAIZEN Unit members. The project office was provided by the Ministry of Industry in the Metal Industry Development Institute building.

Figure- 3: Organisation for the Study Implementation



Source: JICA study team and KU

KAIZEN Unit (KU) is an organisation established by MOI for the purpose of implementing this Study as a temporary unit within MOI which is operative for the duration of the Study. Ten members were assigned to KU from the following six organisations of MOI: Metal Industry Development Institute; Textile Industry Development Institute; Leather Industry Development Institute; Agro-processing Department; Chemical Industry Development Directorate; and Privatisation & Public Enterprises Supervising Agency. Pairing with the JICA study team members, as shown in the Figure-3, KU members are to acquire KAIZEN-related technical knowledge and skills through on-the-job training with the JICA study team members as well as through other training opportunities available in the Study activities. It is expected that the KU members become the core group in a future permanent institution to lead KAIZEN dissemination in Ethiopia. (See Appendix 2 for the list of KU members with their original organisations and assignment dates.)

The JICA study team is a group of Japanese consultants organised for this Study. The team's Study

activities in Ethiopia were undertaken in six periods as shown in Figure-2. The names of the JICA study team members for each of the study activity periods are shown in Table-1. (See Appendix 1 for the list of all JICA study team members with their respective assignments.)

Following are some of the terms used in this report to refer to certain members or sub-teams of the Study organisation:

- '*The JICA study team members*' : Members of the JICA study team. '*The JICA team members*' is also used a shorter form.
- '*The KU members*': Members of KU.
- '*The pilot project team*': Members of JICA study team and KU who participated in the pilot project activities. '*The project team*' is also used as a shorter form.

Table-1: JICA Study Team Members of Each Study Activity Period in Ethiopia

Assignment	First Period (Oct.2009－)	Scond Period (Jan.2010 -)	Third Period (July 2010-)	Forth Period (Oct. 2010 -)	Fifth Period (Jan. 2011 -)	Sixth Period (Apr. 2011 -)
Team Leader	Motokazu Kanokogi	Motokazu Kanokogi				
Team Leader / Quality and Productivity Improvement No.1			Jun Takeyama	Jun Takeyama	Jun Takeyama	Jun Takeyama
Sub Team Leader / Quality and Productivity Improvement No.1	Jun Takeyama	Jun Takeyama				
Sub Team leader / Dissemination			Katsuyoshi Hamahashi	Katsuyoshi Hamahashi	Katsuyoshi Hamahashi	Katsuyoshi Hamahashi
Planning and Construction of Dissemination (Dissemination Strategy)	Masanobu Ninomiya	Masanobu Ninomiya	Masanobu Ninomiya	Masanobu Ninomiya	Masanobu Ninomiya	Masanobu Ninomiya
Planning and construction of dissemination (Audio Visual Material)	Masanobu Ninomiya	Masanobu Ninomiya	Akinobu Mizuno	Akinobu Mizuno	Akinobu Mizuno	
Quality and Productivity Improvement No.2	Yasuhira Takeshi	Yasuhira Takeshi	Takeshi Adachi	Takeshi Adachi	Takeshi Adachi	Takeshi Adachi
Quality and Productivity Improvement No.3	Toru Tomoshige	Toru Tomoshige	Toru Tomoshige	Hiroshi Ezawa	Hiroshi Ezawa	
Quality and Productivity Improvement No.4			Hiroshi Ezawa			

Source: JICA study team

Chapter 2: Brief Overview of Industrial Development in Ethiopia

2.1 Policy Background on Industrial Development in Ethiopia

2.1.1 Fundamental National Development Policy[1]

Ethiopia was reborn to be a federal state with nine regional states and two city administrations in 1991. Since then, Ethiopia has embarked on the continued transformation of the nation from a command economic planning system to a market-oriented economic system as well as from a centralised undemocratic state to a democratic state. For the transformation of the nation, the Government of Ethiopia formulated a long-term policy principle, a medium-term national development programme as well as a short-term plan. Such formulation can be summarised and viewed in Table-2.

Table-2: Brief Outline of National Development Policy and Strategy

Term	Comprehensive Framework	Main Sector Development Plan (in the context of industrial development)
Long-term	Agriculture Development Led Industrialisation (ADLI)	- Rural and Agricultural Development Strategy - Foreign Policy - Democratisation and Governance Strategy - Industrial Development Strategy - Capacity-building Strategy
Medium-term	Growth and Transformation Plan (GTP): 2010/11-2014/15	- Micro and Small Enterprises Development Policy and Strategy - Strategy for Development of Medium Industries
Short-term	Annual Plan of Actions	Annual Plan of Action

Source: JICA study team

The transformation of a nation requires a policy principle in order to direct stakeholders into various forms of reformation. Ethiopia adopted Agricultural Development Led Industrialisation (ADLI) as the policy principle in order to promote its national development. The initial idea of ADLI was formulated with the establishment of the Transitional Government in 1991, which was subsequently elaborated in stages and put into serious implementation in the early 2000s. As an expression of the policy thrust of the Transitional Government, Economic Policy for the Transitional Period (1992) proclaimed a shift toward market orientation, removal of most restrictions on private sector activities, and liberalisation and reforms in sector investment, and public enterprise laws. The policy also retained some features of the previous regime such as the state ownership of land and development centred on agriculture and rural areas. The idea of Agricultural Development Led Industrialisation took its concrete shape as an overarching economic strategy between 1992 and 1994, and An Economic Development Strategy for Ethiopia (1994) introduced the term ADLI to define its strategic direction. These policy features were

[1] Various policy and programmes documents were referred to prepare this section. Among these, a paper presented by Professor Kenichi Ohno in a series of the High-Level Forum in policy dialogue jointly organised by JICA, GRIPS and EDRI was closely referred. For more details, see the paper entitled 'Ethiopia: Political Regime and Development Policies' by Prof.Kenichi Ohno in 2009, National Graduate Institute for Policy Studies (http://www.grips.ac.jp/forum-e/af-growth/support_ethiopia/support_ethiopia2.htm).

also manifested in the new constitution which established the Federal Democratic Republic of Ethiopia in August 1995.

Through the course of the transformation, the Government of Ethiopia has elaborated the policy principle of ADLI and emphasised on the five strategic fields that were; (i) rural and agricultural development strategy; (ii) democratisation and governance strategy; (iii) foreign policy strategy; (iv) industrial development strategy; and (v) capacity-building strategy. The combination of the last two strategies served as crucial elements for industrial development. The Industrial Development Strategy (2002) clarified several policy directives for industrialisation that includes the key role of the private sector, export orientation, use of domestic resources, and enhancement of labour-intensive industries. The Strategy addressed the increase of the contribution of private sector as an integral part of various reform programmes that included a wide range of measures aiming to improve the investment climate (including privatisation), trade policy, reduce the regulatory burden (including tax policy and administration) and improve access to infrastructure (telecommunication, power and transport), land and finance. In parallel with this, Capacity-building Strategy (2001) clarified directives to improve and enhance implementation capacity of public and private agencies. For improvement of implementation capacity, the Strategy highlighted three distinct but interrelated pillars; (i) human resources development; (ii) institutional setting up; and, (iii) improving working system (referring to rules, procedures, manuals and guidelines) with strong emphasis on the realisation of integrated and harmonised efforts among the three elements. Improvement of implementation capacity simultaneously requires the change of popular mind-settings from the present patterns into the one suitable towards international competitiveness. Present patterns of public mind-settings, which are considered to be changed, can be referred to various forms of mind-settings that hinder any processes to improve quality and productivity in a society. These mind-settings include management culture or attitudes towards work in terms of time management, commitment to accomplish tasks requested by outside demands on time, observation and respect of standards or rules set at each work station. Not only management culture or attitudes towards work but also general attitudes towards quality of products are addressed to be changed. Oftentimes public expressed their views as ‘foreign products are better than domestic products’. In such context, the Government of Ethiopia has committed herself in selecting, introducing and adapting methodologies for institutional reform of the nation encompassing all the stakeholders including public agencies, private organisations as well as cooperative societies. These methodologies include business-process-reengineering (BPR), benchmarking, KAIZEN and others.

In parallel with the above, the main ideas of ADLI has been interpreted in the form of a medium-term socio and economic development programme and incorporated into the poverty reduction strategy paper. Sustainable Development and Poverty Reduction Program (SDPRP) 2002/03-2004/05 was the first product of the medium-term socio-economic development programme as such. The SDPRP consisted of the four building blocks, namely 1) food security and agricultural development, 2) judiciary and civil service reform, 3) decentralisation and empowerment, and 4) capacity building in

public and private sectors. Among others, agricultural development served to play the central role of the Program with a focus on development of smallholder agriculture. The SDPRP was followed through critical review and adjustment by the subsequent five-year plan called A Plan for Accelerated and Sustained Development to End Poverty (PASDEP) 2005/06-2009/10. The PASDEP broadened the policy scope from smallholder agriculture to other sectors with strong emphasis on growth acceleration through commercialisation of agriculture and private sector development. During the five years from 2005 to 2010, the Ethiopian economy recorded a double-digit real growth rate of GDP at an average of 11 % under the average population growth of 2.6%. The registered real GDP growth rate implied that average annual per capita income growth rate was 8.4%. Based on the past economic performance as well as in consideration of economic growth projections in the country, the Government of Ethiopia continued elaborating the main ideas of ADLI and announced the next medium-term five year development plan entitled 'Growth and Transformation Plan'.

2.1.2 Growth and Transformation Plan

(1) General

The Growth and Transformation Plan (GTP) was formulated to attain four major objectives that are; 1) to maintain at least an average GDP growth rate at 11.2 % in order to meet Millennium Development Goals (MDGs) by 2015 as base scenario; 2) to expand and ensure the qualities of education and health services; 3) to establish favourable conditions for sustainable state building through the creation of democratic and developmental state, and 4) to ensure growth sustainability by realising all the objectives within stable macroeconomic framework. The GTP aims to foster broad based development in a sustainable manner to achieve the Millennium Development Goals through strategically coordinated efforts on seven main pillars that are 1) sustaining faster equitable economic growth, 2) maintaining agriculture as a major source of economic growth, 3) creating favourable conditions for industry to play a key role in the economy, 4) enhancing expansion and quality of infrastructure development, 5) enhancing expansion and quality of social development, 6) building capacity and deepen good governance, and 7) promoting women and youth empowerment and equitable benefit. For the attainment of the goals, the industrial sector and the agricultural sector are highly emphasised as driving forces and the industrial sector is intended to take up a leading position in the overall national economy at the end of GTP implementation by intensifying the sector's contribution to employment generation, import substitution and foreign exchange earnings.

In order to achieve goals, building and maintaining sound business management system is the most crucial factor. The GTP continues to emphasise on the enhancement of implementation capacity of all the sectors, especially of industrial development sector, through inculcation of new management tools appropriate for the change of the popular mind-setting.

(2) Medium and large company development strategy

Within the framework of the GTP, industrial development sector is broadly divided into two

categories; 1) micro and small enterprises development, and 2) medium and large industries development. In the medium and large industries development, eight (8) sub-sectors were prioritised consisting of 1) textile and apparel industry, 2) leather and leather products industry, 3) sugar and sugar related industries, 4) cement industry, 5) metal and engineering industry, 6) chemical industry, 7) pharmaceutical industry, and 8) agro-processing industry. The respective targets of the individual sub-sectors of industry were set and the summary of development targets and indicators is presented in Table-3.

Table-3: Development Targets and Indicators by Sector

No.	Sub-Sector	Indicators / Parameters	Baseline	Target	Degree
			2009	2015	
1	Textile and apparel industry	Gross value of Products (in USD)	470 mill.	2.545 bill.	5 fold
		Export (in USD)	21.8 mill.	1 bill.	
		No. of new employment	-	40,000	
		Capacity utilisation (in %)	40	90	
		Cotton farm (in hectare)	43,000	395,000	
2	Leather and leather products industry	Export (in USD)	75.73 mill.	496.9 mill.	6 fold
		Capacity utilisation (in %)	10	30	
3	Sugar and sugar related industry	Production (ton)	314,000	2.25 mill.	7 fold
		Export (million tons)	-	1.2463 mill.	
		No. of new employment	-	200,000	
		Sugar cane farming (in ha)	-	200,000	
4	Cement industry	Production (in tons)	2.7 mill.	27 mill.	10 fold
		Per capita consumption (in kg)	35	300	
5	Metal and engineering industry	Production (in Birr)	6 bill.	101.4 bill.	16 fold
		Capacity utilisation (%)	N.A.	100	
		Per capita consumption (in kg)	12	34.72	
6	Chemical industry	Fertiliser (urea) per year (in ton)	-	300,000	-
		Caustic soda (production in ton)	-	50,000	-
		Soda Ash (production in ton)	-	35,000	-
		Soap & detergent (production in ton)	-	166,000	-
		Ditto (capacity utilisation in %)	32	90	-
		Paper (production in ton)	-	410,000	-
		Ditto (capacity utilisation in %)	61	98	
		Pulp (production in ton)	-	315,000	-
		Plastic (production in ton)	-	37,000	-
		Rubber (production in ton)	-	6,700	-
		Ditto (rubber plantation in ha)	-	3,000	-
7	Pharmaceutical industry	Essential drugs (import substitution in %)	-	50	-
		Export (USD)	-	20 mill.	
8	Agro-processing industry	Beverage (capacity utilisation)	60	90	
		Export (USD)	35.2 mill.	300 mill.	8.5 fold

Source: FDRE (2010), Growth and Transformation Plan 2010/11 – 2014/15 Volume II: Policy Matrix

Among the above medium and large industries, those who contributes towards construction services by supplying construction materials including cement, metal products (hollow section and ribs) and electrical and ceramic materials (cable L.V., electrical wire, socket, switch, junction box, conduit, bulb and distributor board) are prioritised in the five-year period to increase their production capacities

through three modes of actions; (i) to improve capacity utilisation, (ii) to expand production capacity, (iii) to build new factories and plants. The increase in production capacity implies the increase of domestic production capacity rather than the expansion of import supplies, and in this perspective, thus, a strategy for development of medium industries was formulated as a part of the import substitution strategy in the GTP. In this strategy, the following companies are addressed.

For cement industry, 11 existing cement factories are identified and expected to increase capacity utilisation, and out of 11 factories, four factories are expected to expand their production capacity while 8 companies are expected to undertake new projects to construct additional or new factories. For metal industry, 8 companies producing ribs and 4 companies producing hollow section are identified to increase their production capacities, while electrical and ceramic supply; only four companies are identified to increase their production capacities.

Among other instruments such as business process reengineering, benchmarking and the like, KAIZEN has been recognised as relevant tool and methodology and expected to serve for the purpose of improving implementing capacity of public and private agencies and companies and enterprises.

(3) MSEs development strategy

With regards to micro and small enterprises, the 1997 MSEs development strategy was reviewed and revised in response to urgently growing needs prevailing in the country. The revised MSEs development strategy in Amharic version was formulated in 2010 and officially endorsed by the Cabinet in January 2011. The revised MSEs strategy involved the whole planning exercises including situation analysis, review on relevant development policies related to the sub-sectors, analysis of currently available means of interventions, formulation of revised strategy including re-defining MSEs, discussions of MSEs contributions toward national economy, setting up updated policy directives and targets as well as institutional framework and supporting mechanism and schemes, and budgetary arrangements. In so doing, five countries were benchmarked for the study including India, Malaysia, the Philippines, Indonesia and Japan. Based on the study, among various findings and policy recommendations made, MSEs are re-defined. The new definition is presented in Table-4.

Table-4: Definitions of Micro and Small Enterprise

Term	Sector	Capital	No. of Person engaged
Micro Enterprise	Industry	Not exceeding Birr 100,000	≦ 5
	Service	Not exceeding Birr 50,000	≦ 5
Small Enterprise	Industry	Birr 100,001 to Birr 1,500,000	6 to 30
	Service	Birr 50,001 to Birr 500,000	6 to 30

Source: Draft Council of Ministers Regulations

Note:

(1) Capital: A total capital does not include an asset of a building.
(2) Person engaged: Persons include the owner, his or her family members and other employees
(3) Draft Council of Ministers Regulations: These Regulations are to be issued by the Council of Ministers in accordance with Article 5 and 34 of the Definition of Powers and Duties of the Executive Organs of the Federal Democratic Republic of Ethiopia Proclamation No.691/2010. This particular Regulation may be entitled 'Federal Micro and Small Enterprises Development Agency Establishment Council of Ministers Regulations.

The Study further suggested the development scenario of MSEs by attempting to broadly categorise MSEs into three groups; i.e., (i) start-up, (ii) growth, and (iii) maturity, in accordance with various aspects of capabilities of human resources development, infrastructure facilities and development, financing, information management, marketing, and technological research and development The revised strategy presents the sequential scenario to bring up MSEs from start-up state to growth expecting that MSEs at the stage of maturity may enter into a category of medium and large companies for further growth scenario. To assist MSEs in this developmental scenario, the revised MSEs development strategy attempts to articulate supporting schemes including governance system and roles demarcation among public agencies including MoUDC, MOI, FeMSEDA and ReMSEDAs MOE, TVET, National Bank and other stakeholders, monitoring system, legal frameworks relating to business registration and licensing as well as procedures and mechanism to assess financial schemes, human resource development supports including entrepreneurship development, managerial skill development and upgrading, management consultancy skill, marketing supports, clustering and incubating supports, technological development support, information management support, institutional capacity building support as well as women and youth support.

The revised strategy attempted to categorise MSEs in terms of type of businesses or sub-sector of industries. Five (5) groups are broadly identified and prioritised in the context of policy implementation. Table-5 indicates five groups of MSEs.

Table-5: Category of Prioritised MSEs in terms of Types of Industry

No	Group	Sub-sector
1	Manufacturing	● Textile and apparel ● Leather goods ● Agro-processing ● Metal Engineering ● Wood working ● Food and beverage ● Packaging ● Electrical and electronics
2	Agri-business	● Urban agriculture linked with processing ● Modern commercial poultry linked with processing ● Modern commercial animal husbandry linked with processing ● Apiculture linked with processing ● Modern animal feed processing
3	Construction	● Rural road works ● Low cost housing construction ● Production and supply of construction materials
4	Trade	● Local products wholesale ● Raw materials suppliers to MSEs ● Exclusively local products retail shops
5	Service	● ICT ● Maintenance support for the strategic industries ● Eco-tourism ● Cooperative based resort ● Low cost rural transport ● Storage container and packaging services

Source: Former MOTI, Revised Micro and Small Enterprises Development Policy and Strategy (draft)
Newly reformed FeMSEDA, List of on-going registration of MSEs in Addis Ababa and SNNPRN, March 2011

As an integral part of the GTP based on ADLI principal directive, management skill human resources development as well as institutional capacity building are emphasised in the revised MSEs Strategy. With regard to instruments for this, KAIZEN is recognised as one of core tools or methodologies.

The revised strategy was formulated in line with new institutional arrangements for implementation. The new institutional arrangements were made as an integral part of the administrative restructuring which was promulgated in October 2010. The main features of the administrative restructuring related to MSEs development are summarised as follows: (i) split of the former Ministry of Trade and Industry into MOI and MOT; (ii) transfer of a mandatory duty of MSEs development from MOI to MoUDC (including transfer of FeMSEDA from MOI to MoUDC); and (iii) re-organisation of FeMSEDA into a policy implementation and management body rather than an implementing agency. Along with this restructuring, under coordinated leadership guided by the MoUDC with MOI and MOE, TVET agency is officially appointed to hold the mandate to serve as a central body to provide MSEs with management consultancy services. The respective TVETs will designate relevant teachers to be newly established position called Industrial Extension Officers who are supposed to discharge the duty for the provision of management consultancy services. According to MOI and MOE, TVET teachers are broadly categorised into three; (i) grade-A who holds a master degree and is given a occupation qualification of level-4[2], (ii) grade-B who holds a bachelor degree and is given a occupational qualification of level-3, and (iii) grade-C who holds a bachelor degree and is given a occupational qualification of level-2. Table-6 presents the number of TVET schools in the country as of February 2011. TVET schools accounts for 814 schools in total which are categorised into three entities in accordance with types of ownership: (i) 257 public TVET schools; (ii) 523 private TVET schools; and (iii) 34 TVET schools run by NGOs.

Table-6: TVET (Technical and Vocational Education and Training) Schools

No.	Region	Public	Private	NGO	Total	No. of CRC
1	Tigray	26	26	3	55	5
2	Afar	4	0	0	4	0
3	Amhara	58	46	1	105	12
4	Oromiya	103	125	5	233	18
5	SNNP	20	67	5	92	5
6	Harari	2	6	0	8	0
7	Somali	5	2	0	7	0
8	Dire Dawa	2	6	0	8	0
9	Benishangul	2	5	0	7	0
10	Gambela	2	6	0	8	0
11	Addis Ababa	33	234	20	287	8
Total		257	523	34	814	48

Source: Ministry of Education (based on original source from MOE)

[2] Level of occupation qualification seems to refer to professional grade determined by the Ministry of Civil Services in accordance mainly with the duration of service years. Yet TVET occupation qualification is subject to clarification in the future, as the reformation of TVET was in process during the Study's period.

Also by mobilising experiences in education development in the country, cluster-resource centre approach is mobilised and employed, and 48 TVET schools are identified as cluster-resource centre to strengthen established networking. According to MOI and MOE, these 48 TVET schools are intended to serve as regional centres to provide MSEs with KAIZEN management consultancy services. The list of 48 TVET centres is shown in Appendix 16.

(4) Area-based development approach

Maintaining continued enhancement of decentralisation in development administration, the Government of Ethiopia has been exercising resource-based area approach to social and economic development. Through such exercises, two distinct but to some extent interrelated concepts have been emerged. One is the concept of development corridor that is recently further interpreted as growth corridor, while the other is the concept of industrial zone as spatial approach to industrial development.

The planning exercises on the formulation of concepts and delineation of such spatial areas dated back to the middle of 1990s. It is understood that exercises on the creation of the spatial zones is closely concerned with three ideas separately or integrated modality: 1) connection with and attraction for domestic and international investors; 2) realisation of industrial clusters to bring about effects from consolidation of industries arranged in value-chain or supply-chain resulting in minimisation of transaction costs as well as transportation costs, and 3) synergy effects through collaboration among government, private sector and academicians. At the early stage, the planning exercises involved three kinds of spatial areas including industrial area, industrial zone and industrial estate. Through pilot activities on the creation of industrial estate, it was found out that such estate would be very costly resulting in declining interests of investors. With critical lessons learnt from the early stage of the pilot activities, it was understood that creation of industrial zone would become more attractive to international investors.

As of January 2011, the concept of growth corridors are in the process of formulating further articulated conceptual framework, while the idea on industrial zones is becoming a picture of implementation. Four (4) industrial zones are under preparation.

Table-7: Industrial Zone / Cluster (as of January 2011)

No	Industrial Zone / Cluster	Selected salient feature
1	Eastern Industrial Zone	200 hectare in Dukam, 30 km south of Addis Ababa Developer and investment from China. USD 250 million worthy of investment
2	Ethio-Turkish Industrial Zone	1,460 hectare in Lagatafo, 12 km north of Addis Ababa Developer and investment from Turkey USD 3 billion worthy of investment
3	Kombolcha Industrial Zone (cluster)	Kombolcha, 375 km north of Addis Ababa Textile and apparel industrial clustering
4	Addis Ababa Industrial Cluster	Akaki cluster and Addis Ababa Cluster

Source: JICA study team and a presentation material by MOI in the 7th HLF

In addition to the above four industrial zones or clusters, the following areas were reportedly under the planning exercises including Dire Dawa, Mekelle, Jimma, Bahir Dar and Hawassa.

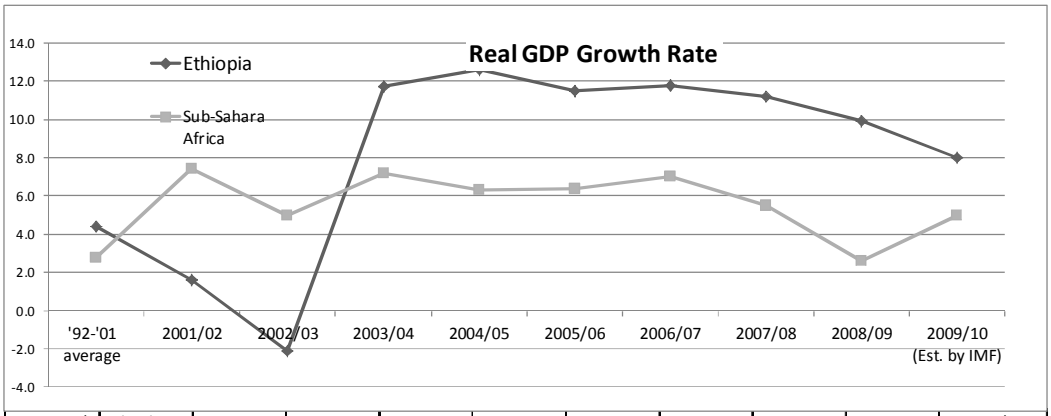
As expressed in the High-level forum of the policy dialogue, the area-based approach is an integral part of the industrial development approaches, and hence, enhancement of implementation capacity through improved management skills and techniques is required for the effective establishment of industrial zones. The Government of Ethiopia expects that the establishment of industrial zones may provide with the creation of employment opportunities for skilled and unskilled labours as well as managerial workers. Those workers are expected to change their mind-setting that shall fit into a new working circumstance in pursuit of international competitiveness. In policy perspectives, KAIZEN, among other methodological tools, is expected to serve as systematic tools for changing the mind-setting into the one suitable for international competitiveness in order to realise expected outcomes from that area-based approach in industrial development.

2.2 Current Condition of Industrial Sector

2.2.1 Industrial Sector in Ethiopian Economy

Ethiopia has continued a robust economic growth since its recovery from the drought-related contraction in 2002/2003. In the past six years, Ethiopia's GDP growth has been one of the fastest in Africa. Although the GDP growth has slowed down in the aftermath of the 2008 global economic crisis, Ethiopia managed to maintain its real GDP growth at near 10% level in the most recent years.

Figure-4: Real GDP Growth Rate



Country / Region	'92-'01 average	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10 (Est. by IMF)
Ethiopia	4.4	1.6	-2.1	11.7	12.6	11.5	11.8	11.2	9.9	8.0
Sub-Sahara Africa	2.8	7.4	5.0	7.2	6.3	6.4	7.0	5.5	2.6	5.0

Source: World Economic Outlook,IMF

Ethiopia's economic growth has been driven by the service sector which has been growing around 13% annually since 2004. The agriculture sector moderated to 7% annual growth in the past three years after its strong performance in the previous years. The industrial sector has maintained its growth consistently at about 10% annually in keeping with the total GDP growth, resulting in the unchanged 13% share of the industrial sector relative to GDP.

Figure-5: GDP Distribution by Sector

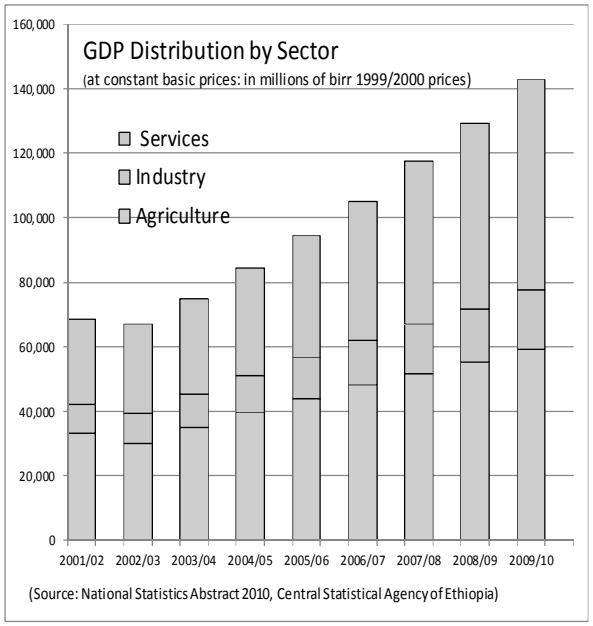
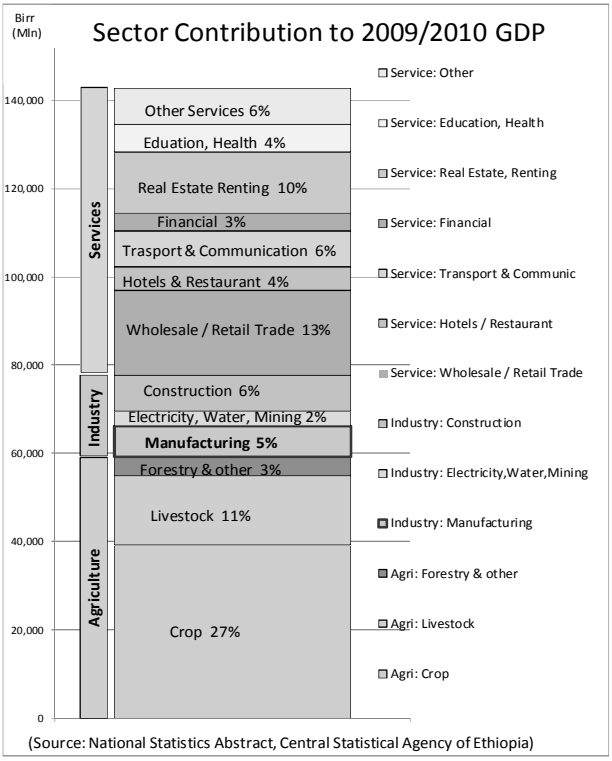


Figure-6: Sector Contribution to 2009/2010 GDP



Inside the industrial sector, the manufacturing sector has been growing from its small base. Figure-6 confirms the dominant status of the agriculture sector in contrast to the manufacturing sector's small relative size with its 5% contribution to the total GDP. The 5% share of the manufacturing sector in the national economy was unchanged in the past decade.

In the international trade perspective, Ethiopia remains under balance of payments pressures (see Figure-7. In the most recent currency adjustment, the Ethiopian authorities devalued the Birr by 16.5 per cent in September 2010 to remove an estimated overvaluation of the currency and aid competitiveness of exports. Ethiopia's exports totalled 32.3 billion Birr that contrast to the imports of 123.3 billion Birr leaving the trade gap of 91.0 billion Birr. Reducing the trade deficits remains a daunting task for the Ethiopian economy. The Figure-8 on the right shows the composition of exports. Since the middle of the 90s there has not been a clear trend towards diversification in the export structure. The manufacturing sector which remains a small contributor in the exports is required to drastically expand its capacity in promoting exports. The sector has also equally critical agenda of import substitution.

Figure-7: Trade Deficits of Ethiopia

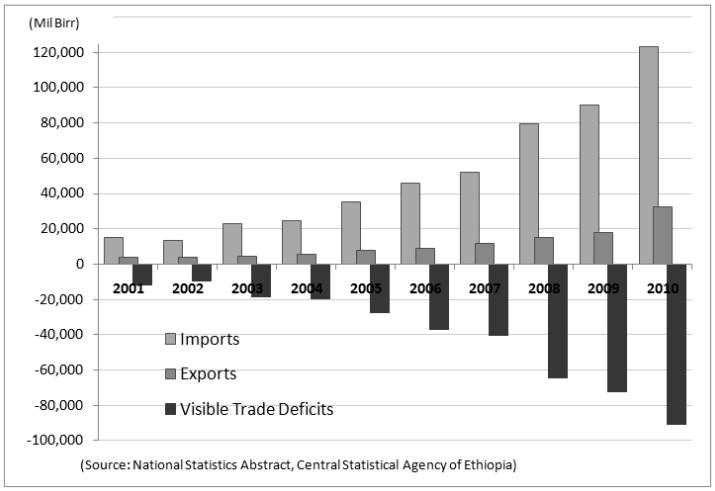
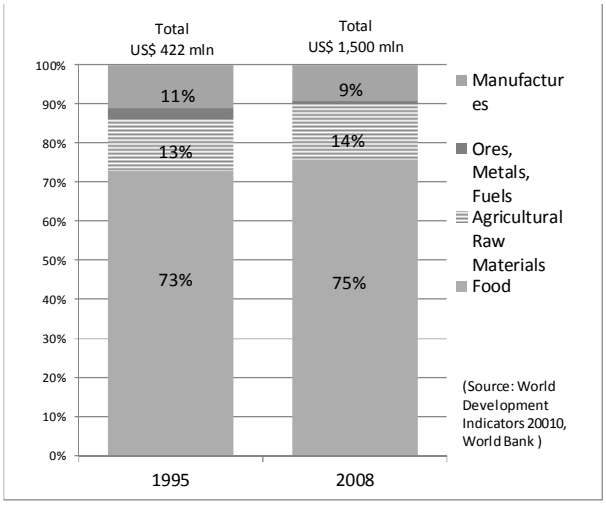


Figure-8:
Structure of Merchandise Exports of Ethiopia



2.2.2 Manufacturing Sector in Ethiopia

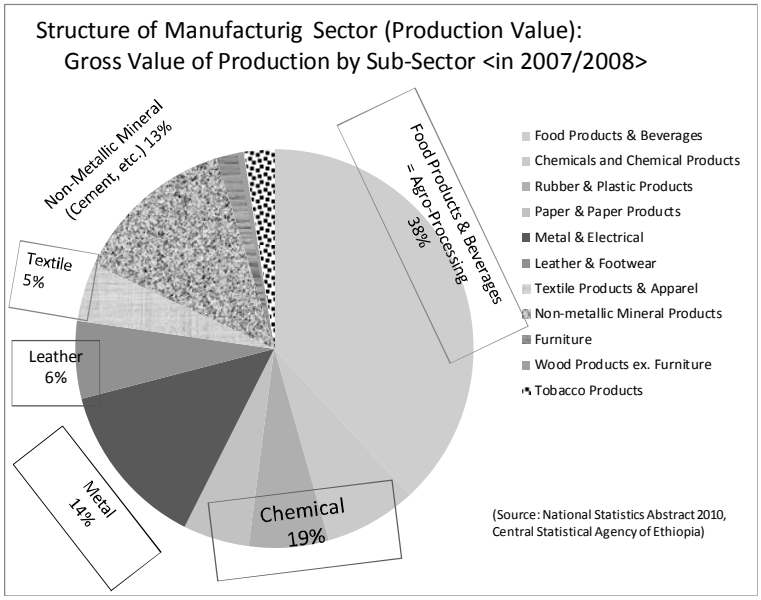
1) Structure of Manufacturing Sector

The Figure 9, 10 and 11 describe the current structure of the manufacturing sector in three dimensions, namely gross value of production, size of employment and number of companies.

<Production Value>

The Agro-processing sub-sector boasts by far the largest production value share of 38% in the manufacturing sector according to the 2008 / 2009 statistics. The distant second and third places go to the Chemical and Metal sub-sectors. Leather and Textile, which are the export contributors, account for 5-6% respectively. The Non-metallic Mineral sub-sector has a sizable share of 13% in which the cement sub-sector represents the biggest component.

Figure-9: Structure of Manufacturing sector (Production Value)



<Size of Employment>

In relation to employment, the dominance of Agro-processing is evident with a 30% share of the manufacturing sector's total employees. A major difference is in Textile where its employees represent more than 17% of total manufacturing despite the fact that its production value share is 5%. The official statistics as of 2008/2009 of enterprises engaging 10 persons or more show that 2,203 companies employ nearly 150,000 in the manufacturing sector.

<Number of Companies>

In terms of the number of enterprises, the largest sub-sector is non-metallic mineral with 27.6% of the total establishments. Agro-processing comes second with the share of 25.5%. The number of enterprises in the manufacturing sector as of 2008 / 2009 was 2,203 establishments, of which 2,076 were private companies and 127 were public or government-owned. These enterprises in the statistics are those engaging 10 persons or more, and about 70% of the total are those engaging less than 50 persons.

Figure-10: Structure of Manufacturing sector (employment)

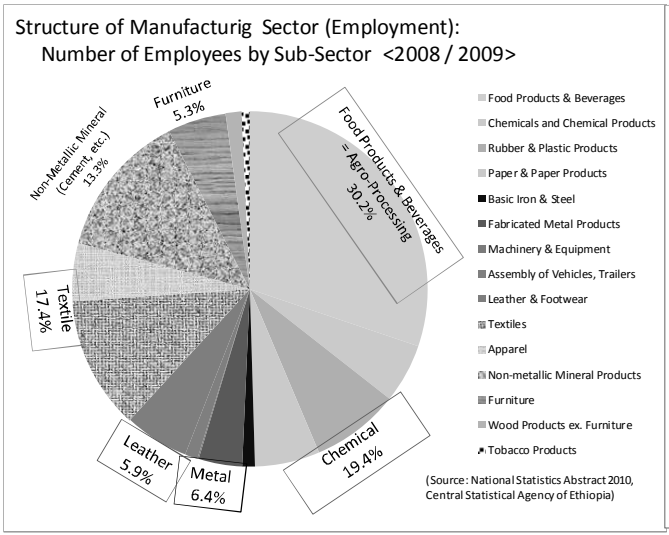


Figure-11: Structure of Manufacturing sector (companies)

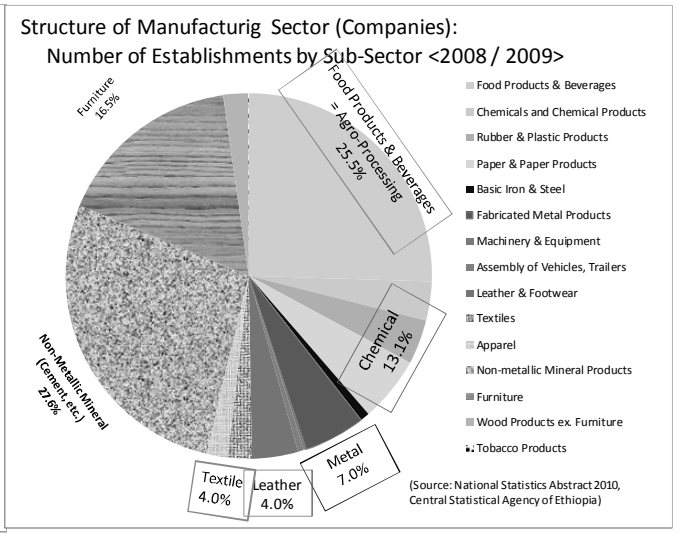


Table-8:

Manufacturing Sector: Number of Employees by Sub-Sector

National Statistics Classification	Number of Employees			Target Sub-Sectors of KAIZEN Project	
	Public	Private	Total		Share
Food Products & Beverages	16,616	28,341	44,957	Agro-Processing	30.2%
Chemicals and Chemical Products	1,871	6,160	8,031		
Rubber & Plastic Products	1,483	10,475	11,958		
Paper & Paper Products	3,598	5,224	8,822	Chemical subtotal	19.4%
Basic Iron & Steel	813	897	1,710		
Fabricated Metal Products	1,101	4,783	5,884		
Machinery & Equipment	0	190	190		
Assembly of Vehicles, Trailers	311	1,373	1,684	Metal Subtotal	6.4%
Leather & Footwear	1,766	6,984	8,750	Leather	5.9%
Textiles	7,857	10,213	18,070		
Apparel	0	7,793	7,793	Textile Subtotal	17.4%
Non-metallic Mineral Products	5,431	14,359	19,790	Non-metallic Min.	13.3%
Furniture	785	7,160	7,945	Furniture	5.3%
Wood Products ex. Furniture	696	1,415	2,111	Wood Prdcts ex. F.	1.4%
Tobacco Products	1,122	0	1,122	Tobacco Products	0.8%
	43,450	105,367	148,817	Total	100.0%

(Source: National Statistics Abstract, Central Statistical Agency of Ethiopia)

Table-9:

Manufacturing Sector: Number of Establishments by Sub-Sector

National Statistics Classification	Number of Establishments			Target Sub-Sectors of KAIZEN Project	
	Public	Private	Total		Share
Food Products & Beverages	33	529	562	Agro-Processing	25.5%
Chemicals and Chemical Products	9	66	75		
Rubber & Plastic Products	5	82	87		
Paper & Paper Products	12	115	127	Chemical subtotal	13.1%
Basic Iron & Steel	2	16	18		
Fabricated Metal Products	4	116	120		
Machinery & Equipment	0	5	5		
Assembly of Vehicles, Trailers	3	9	12	Metal Subtotal	7.0%
Leather & Footwear	3	86	89	Leather	4.0%
Textiles	7	40	47		
Apparel	0	41	41	Textile Subtotal	4.0%
Non-metallic Mineral Products	23	585	608	Non-metallic Min.	27.6%
Furniture	14	349	363	Furniture	16.5%
Wood Products ex. Furniture	11	37	48	Wood Prdcts ex. F.	2.2%
Tobacco Products	1	0	1	Tobacco Products	0.0%
Manufacturing Sector total	127	2,076	2,203	Total	100.0%

(Source: National Statistics Abstract, Central Statistical Agency of Ethiopia)

The manufacturing sector is characterised by the still small size of production value, the limited number of the enterprises operating in the sector, and the small size of operation of individual enterprises. It is also noted that enterprises with less than 10 persons or micro/small enterprises are not included in the gross value of production, the number of employees and the number of establishments presented here. The tables above are summary statistics of the size of employment and the number of companies as of 2008 / 2009 with respect to those with 10 people or more.

2) Sub-Sectors of development focus

In this Study, five sub-sectors were identified as the target of the pilot project of the Study (see Chapter 3.4.1 Selection of 30 Pilot Companies). They are: (i) agro-processing; (ii) chemical; (iii) metal; (iv) leather; (v) textile. As shown in the pie charts in the previous pages, these 5 sub-sectors constitute the major part of the manufacturing sector, i.e., close to 80% of production as well as employment of the manufacturing sector, and over 50% of the number of the companies in the sector. Among the 5 sub-sectors, leather and textile are the two sub-sectors that have received policy emphasis as the export-oriented areas within the manufacturing sector. The remaining 3 sub-sectors have also received policy focus for substantial growth in production and employment and are expected to expand import substitution.

In the GTP's industrial development strategic directions for the medium & large industries, sub-sectors to receive special support are regrouped into eight sub-sectors: (1) Textile and Apparel; (2) Leather and Leather Products; (3) Sugar and sugar-related; (4) Cement; (5) Metal & Engineering; (6) Chemical; (7) Pharmaceutical; and (8) Agro-Processing.

On the next page, a more comprehensive look at the manufacturing sector is shown in terms of gross value of production by sub-sector and by company size in relation to employment based on data for 2007 / 2008. The analyses indicate the following:

(a) In 2007/2008, the largest 565 companies (with 50 or more personnel) produced 91% of the total manufacturing production of the registered company sector.

(b) The same 565 companies employed 81% of the total manufacturing workforce of 133 thousand in the registered company sector.

(c) Within the food products & beverages sector (agro-processing sector), a concentration of production in a few companies resulted in 32 companies producing 25% of the total manufacturing gross value of production. The 32 companies consist of 6 in sugar, 8 in malt liquors (beer), and 18 in soft drinks (mineral water), which appear the best performing areas in the manufacturing sector with a certain level of economies of scale and labour productivity.

(d) Other than the sugar, beer and mineral water areas, the next best sub-sector is the metal sector in terms of productivity estimated by the measure of gross value of production per employee. Following the metal sector are the three sub-sectors of non-metallic mineral (largely cement), chemical and leather. The textile sub-sector appears to be at the bottom among the major

sub-sectors in this measure.

In the initial phase of the Study, the Study team conducted a reconnaissance survey of sixty manufacturing companies. This enabled the Study team to get a glimpse over the state of the manufacturing sector's financial management conditions. A summary of the survey is included in the Appendix-4.

In a country with a population of 81 million, the manufacturing sector in Ethiopia today still remains very small in terms of the capacity to meet the country's demands for goods, to provide employment, and to combat the balance of payments problem. Under the GTP, the manufacturing sector is re-invigorating its endeavour to establish a significant presence in the domestic markets leading to substantial import substitution, and to establish competitiveness to drive exports in the select areas of potential comparative advantage.

Table-10: Gross Value of Production of Manufacturing Sector 2007/2008

Gross Value of Production of Manufacturing Sector 2007/2008 (in Million Birr)

Sub-Sectors	1. Gross Value of Production	GVP share
Agro-Processing	**8,751**	**38.1%**
Food Products & Beverages	**8,751**	**38.1%**
Sugar	2,101	9.1%
Malt Liquors	2,215	9.6%
Soft drinks	1,433	6.2%
Other Agro-Processing	3,002	13.1%
Chemical	**4,454**	**19.4%**
Chemical & Chemcal-related	**4,454**	**19.4%**
Chemicals and Chemical Products	1,733	7.5%
Rubber & Plastic Products	1,485	6.5%
Paper & Paper Products	1,236	5.4%
Metal	**3,102**	**13.5%**
Basic Iron & Steel	1,081	4.7%
Fabricated Metal Products	1,203	5.2%
Machinery / Equipment	28	0.1%
Assembly of Vehicles/ Tralders	790	3.4%
Leather & L Products	**1,447**	**6.3%**
Leather & Footwear	**1,447**	**6.3%**
Textile & Apparel	**1,082**	**4.7%**
Textile Products	694	3.0%
Apparel	388	1.7%
Other	**3,069**	**13.4%**
Non-metallic Mineral Products	**3,069**	**13.4%**
Furniture	**392**	**1.7%**
Wood Products ex. Furniture	**119**	**0.5%**
Tobacco Products	**569**	**2.5%**
Total	**22,985**	100.0%

The analyses on this page focus on gross value of production by sub-sector and by company size in relation to employment.
The analyses indicate the following:

- In 2007/2008, the largest 565 companies (with 50 or more personnel) produced 91% of the total manufacturing production of the registered company sector.
- The same 565 companies employed 81% of the total manufacturing workforce of 133 thousand in the registered company sector.
- Within the food products & beverages sector (agro-processing sector), concentration of production in a few companies resulted in 32 companies* producing 25% of the total manufacturing gross value of production, who may be in a position to have reasonable ecommies of scale and labour productivity (See 5. *GVP per Company*, and 6.*GVP per Employee*).

[* Six in sugar, eight in malt liquors (beer), and 18 in soft drinks (mineral water)]

- Other than the sugar, beer and mineral water sub-sectors, the next best sub-sector in labour productivity is the metal sector (See 6. *GVP per Employee*). Following the metal sector are non-metallic mineral (largely cement), chemical and leather sub-sectors. The textile sub-sector is at the bottom among the major sub-sectors.

The analyses are based on the data for 2007/2008 which is the latest available year in relation to the whole sets of data required. Source: National Statistics Abstract 2010, Central Statistical Agency of Ethiopia.

2. GVP by Company Size (# of employees)

	10-19 persons	20-49 persons	50 & + persons	Total
Food Products & Beverages	**222**	**545**	**7,984**	**8,751**
Sugar	15	27	2,059	2,101
Malt Liquors	0	0	2,215	2,215
Soft drinks	0	6	1,427	1,433
Other Agro-Processing	207	512	2,283	3,002
Chemical & Chemcal-related	**63**	**369**	**4,022**	**4,454**
Chemicals and Chemical Products	10	110	1,613	1,733
Rubber & Plastic Products	27	164	1,294	1,485
Paper & Paper Products	26	95	1,115	1,236
Metal	**31**	**221**	**2,850**	**3,102**
Basic Iron & Steel	5	109	967	1,081
Fabricated Metal Products	24	60	1,119	1,203
Machinery / Equipment	1	10	17	28
Assembly of Vehicles/ Tralders	1	42	747	790
Leather & Footwear	**16**	**50**	**1,381**	**1,447**
Textile & Apparel	**6**	**30**	**1,046**	**1,082**
Textile Products	3	9	682	694
Apparel	3	21	364	388
Non-metallic Mineral Products	**109**	**73**	**2,887**	**3,069**
Furniture	**69**	**73**	**250**	**392**
Wood Products ex. Furniture	**15**	**14**	**90**	**119**
Tobacco Products	**0**	**0**	**569**	**569**
Total	**531**	**1,375**	**21,079**	**22,985**
	2.3%	**6.0%**	**91.7%**	**100.0%**

3. Number of Companies by Company Size

	10-19 persons	20-49 persons	50 & + persons	Total
Food Products & Beverages	**183**	**152**	**150**	**485**
Sugar	11	4	6	21
Malt Liquors	0	0	8	8
Soft drinks	0	1	18	19
Other Agro-Processing	172	147	118	437
Chemical & Chemcal-related	**51**	**102**	**152**	**305**
Chemicals and Chemical Products	12	19	49	80
Rubber & Plastic Products	11	23	48	82
Paper & Paper Products	28	60	55	143
Metal	**52**	**34**	**49**	**135**
Basic Iron & Steel	1	4	10	15
Fabricated Metal Products	47	24	30	101
Machinery / Equipment	1	1	2	4
Assembly of Vehicles/ Tralders	3	5	7	15
Leather & Footwear	**19**	**20**	**44**	83
Textile & Apparel	**10**	**15**	**39**	64
Textile Products	2	4	19	25
Apparel	8	11	20	39
Non-metallic Mineral Products	**299**	**121**	**68**	488
Furniture	**203**	**63**	**33**	299
Wood Products ex. Furniture	**29**	**12**	**29**	70
Tobacco Products	**0**	**0**	1	1
Total	**846**	**519**	**565**	**1,930**
	43.8%	**26.9%**	**29.3%**	**100.0%**

4. Employees by Company Size

	10-19 persons	20-49 persons	50 & + persons	Total
Food Products & Beverages	**2,379**	**4,382**	**34,920**	**41,681**
Sugar	132	124	8,081	8,337
Malt Liquors	0	0	3,582	3,582
Soft drinks	0	42	6,939	6,981
Other Agro-Processing	2,247	4,216	16,318	22,781
Chemical & Chemcal-related	**627**	**2,994**	**21,849**	**25,470**
Chemicals and Chemical Products	165	635	6,978	7,778
Rubber & Plastic Products	162	797	7,792	8751
Paper & Paper Products	300	1,562	7,079	8,941
Metal	**679**	**918**	**6,902**	**8,499**
Basic Iron & Steel	16	109	1,204	1,329
Fabricated Metal Products	607	598	4,032	5,237
Machinery / Equipment	13	20	173	206
Assembly of Vehicles/ Tralders	43	191	1,493	1,727
Leather & Footwear	**267**	**607**	**7,776**	**8,650**
Textile & Apparel	**143**	**437**	**19,150**	**19,730**
Textile Products	29	127	11,939	12,095
Apparel	114	310	7,211	7,635
Non-metallic Mineral Products	**3,741**	**3,253**	**10,693**	**17,687**
Furniture	**2,478**	**1,771**	**3,233**	**7,482**
Wood Products ex. Furniture	**376**	**395**	**2,460**	3,231
Tobacco Products	**0**	**0**	**1,254**	**1,254**
Total	**10,690**	**14,757**	**108,237**	**133,684**
	8.0%	**11.0%**	**81.0%**	**100.0%**

5. GVP per Company (in Thousand Birr)

	10-19	20-49	50 & +	Overall
Food Products & Beverages	**1,213**	**3,586**	**53,227**	**18,043**
Sugar	1,364	6,750	343,167	100,048
Malt Liquors			276,875	276,875
Soft drinks		6,000	79,278	75,421
Other Agro-Processing	1,203	3,483	19,347	6,870
Chemical & Chemcal-related	**1,235**	**3,618**	**26,461**	**14,603**
Chemicals and Chemical Products	833	5,789	32,918	21,663
Rubber & Plastic Products	2,455	7,130	26,958	18,110
Paper & Paper Products	929	1,583	20,273	8,643
Metal	**596**	**6,500**	**58,163**	**22,978**
Basic Iron & Steel	5,000	27,250	96,700	72,067
Fabricated Metal Products	511	2,500	37,300	11,911
Machinery / Equipment	1,000	10,000	8,500	7,000
Assembly of Vehicles/ Tralders	333	8,400	106,714	52,667
Leather & Footwear	**842**	**2,500**	**31,386**	**17,434**
Textile & Apparel	**600**	**2,000**	**26,821**	**16,906**
Textile Products	1,500	2,250	35,895	27,760
Apparel	375	1,909	18,200	9,949
Non-metallic Mineral Products	**365**	**603**	**42,456**	**6,289**
Furniture	**340**	**1,159**	**7,576**	**1,311**
Wood Products ex. Furniture	517	1,167	3,103	1,700
Tobacco Products			569,000	569,000
Total	628	2,649	37,308	11,909

6. GVP per Employee (in Thousand Birr)

	10-19	20-49	50 & +	Overall
Food Products & Beverages	**93**	**124**	**229**	**210**
Sugar	114	218	255	252
Malt Liquors			618	618
Soft drinks		143	206	205
Other Agro-Processing	92	121	140	132
Chemical & Chemcal-related	**100**	**123**	**184**	**175**
Chemicals and Chemical Products	61	173	231	223
Rubber & Plastic Products	167	206	166	170
Paper & Paper Products	87	61	158	138
Metal	**46**	**241**	**413**	**365**
Basic Iron & Steel	313	1,000	803	813
Fabricated Metal Products	40	100	278	230
Machinery / Equipment	77	500	98	136
Assembly of Vehicles/ Tralders	23	220	500	457
Leather & Footwear	**60**	**82**	**178**	**167**
Textile & Apparel	**42**	**69**	**55**	**55**
Textile Products	103	71	57	57
Apparel	26	68	50	51
Non-metallic Mineral Products	**29**	**22**	**270**	**174**
Furniture	**28**	**41**	**77**	**52**
Wood Products ex. Furniture	40	35	37	37
Tobacco Products			454	454
Total	50	93	195	172

Source: National Statistics Abstract 2010, Central Statistical Agency of Ethiopia

Chapter 3: Pilot Project – Designing & Implementing KAIZEN Guidance with Pilot Companies

3.1 Objectives of Pilot Project

The goals of the pilot project in this Study have been broad and multi-faceted. The core activity of the pilot project is to conduct the KAIZEN diagnosis and guidance ("the KAIZEN Guidance") with the companies selected to participate in it ("the pilot companies"). In the context of the Study objectives, the pilot project has been implemented for the purposes of: 1) formulating a manual, 2) providing an empirical basis for the formulation of the dissemination component of a KAIZEN national plan, and 3) transferring skills and techniques to the KU members. As discussed in 1.2.4 (Implementation strategy of the Study), the pilot project has been the pillar of the Study activities.

Based on the above, the pilot project's implementation objectives are summarised below:

(1) Develop and establish a KAIZEN guidance method and its implementation programme for Ethiopian manufacturing companies
(2) Conduct the KAIZEN guidance activities with the pilot companies (on-site diagnosis and guidance, in-company self-exercise as well as group training)
(3) Develop a manual of the KAIZEN guidance method and activities by documenting the accomplishments with (1) and (2)
(4) Transfer relevant skills and techniques to the KU members, primarily in the process of (2) and secondarily in the process of (1) and (3)

It should be noted that the Study, whose direct objectives were to formulate and verify the basis of introduction of KAIZEN and its dissemination in Ethiopia's manufacturing sector, was to ultimately serve the capacity development goal of Ethiopian companies. In this respect, the pilot project's primary capacity development objective was targeted at KU as described in 3) above, in view of its critical importance as the test case for training of trainers of KAIZEN in Ethiopia as well as the initial step of human resources development for KAIZEN dissemination in the country. However, in addition to KU, capacity development of the pilot companies which was expected in the implementation of the pilot project was also an important aspect of the Study.

In fulfilling these objectives, the pilot project team was formed by the JICA study team consultants and the KU members at the initiation of the Study, followed by the selection of 30 pilot companies and the initial planning of the guidance activities in Phase 1. The main implementation activities took place throughout the entire period of Phase 2.

In this Chapter, with respect to the implementation objective (1), the methodology of the KAIZEN guidance is explained in 3.2, followed by the methodology of monitoring and assessment of KAIZEN activities in 3.3. With regard to (2), the KAIZEN guidance implementation activities are presented in detail in 3.4. In terms of (3), the main contents of the manual and the audio-visual materials are

discussed in 3.5. With respect to (4), the capacity development of the KU members is presented in Chapter 4.

3.2 Methodology of Pilot Project KAIZEN Guidance

In the early stages of the Study period, the Study team spent considerable time and efforts in defining the KAIZEN concepts and determining the methodology of KAIZEN activities in a way that allows KAIZEN to be adapted in the Ethiopian situation and to take root in the manufacturing companies. Following are the results of such efforts that were further refined through the pilot project activities.

3.2.1 Defining KAIZEN Concepts

1) Definition of KAIZEN

The definition of KAIZEN for the purpose of this Study and its pilot project was provided in the perspective of this Study's goal of promoting adaptation and dissemination of KAIZEN in Ethiopia as the quality / productivity improvement practice in its manufacturing sector.

<Definition of KAIZEN>

KAIZEN is a system of continual undertaking by an organisation to improve its business activities and processes with the goal to always improve quality of products and services so that the organisation can meet full customer satisfaction. KAIZEN can be built in and run with an integrated and company-wide approach through the collaboration of all the levels of the organisation that are top management, middle managers and front-line employees. Commitment, genuine participation and motivation of all the three actors are critical factors. KAIZEN normally places the foremost importance in improvements at the front-line workplaces as the foundation of all the improvement efforts.

KAIZEN encompasses all the areas that are related to quality, cost, and delivery, whose-simultaneous improvements are essential in achieving customer satisfaction and success of the organisation. KAIZEN, as undertaken by an organisation, involves continual, dynamic and self-disciplined practice in the quest of improvement towards ever higher quality and productivity. In this perspective, the practice of KAIZEN is conducive to creation of a corporate culture in which the organisation's members are endogenously self-motivated to work together to continually self-innovate and improve their organisation. It also promotes the realisation of human potentials of all members of the organisation.

Supplementing the definition above, the guiding principles of KAIZEN can be summarised as follows:

<KAIZEN's Guiding Principles>

(1) Integrated total company approach: Genuine participation of top management, middle managers and front-line employees throughout the company organisations

(2) Proactive and spontaneous participation of employees of front-line workplaces with their own initiatives

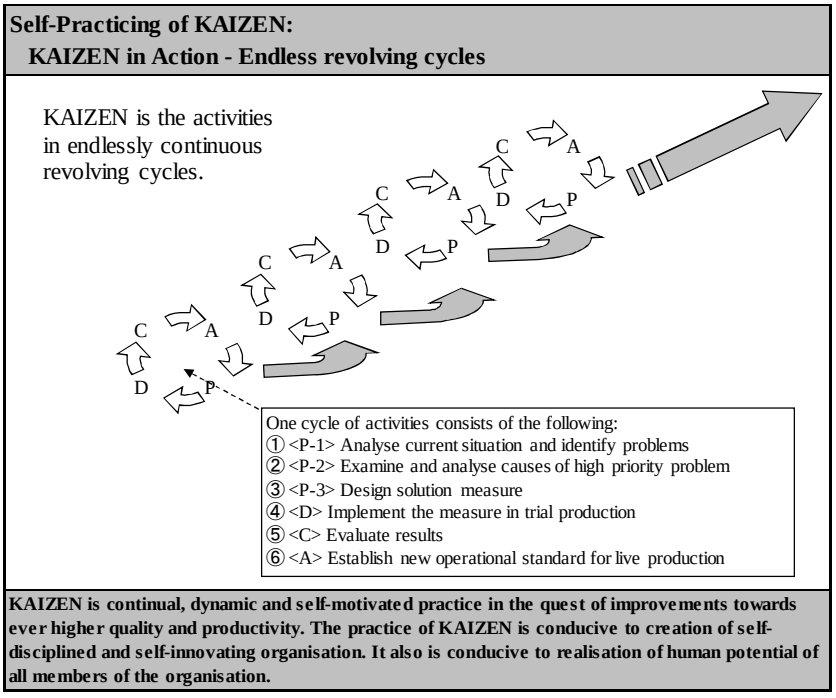
(3) Focus on the workplace that encourages improvements of efficiency in existing resources allowing low cost improvements to accumulate for a significant contribution to the company goals

(4) Continuous and endless activities in revolving cycles of PDCA resulting in significant improvements

(5) Endogenous undertaking conducive to change in organisational culture: Practicing KAIZEN in itself will lead to a corporate culture of continually self-innovative organisation and self-motivated workforce.

2) KAIZEN in action and KAIZEN's knowledge bases

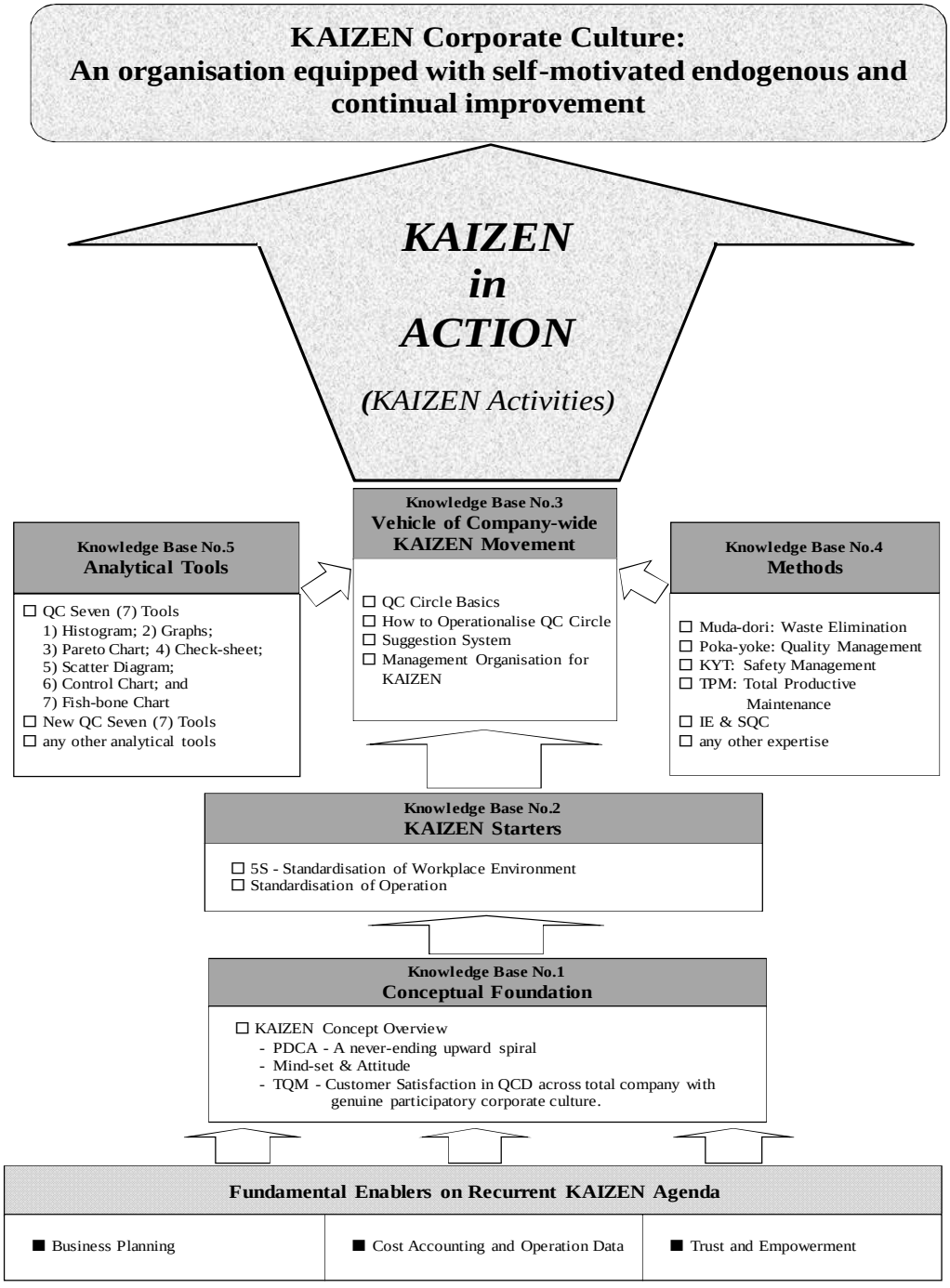
The most significant difference between KAIZEN and other business improvement methods is that KAIZEN is continual undertaking. KAIZEN is a dynamic activity in revolving cycles of PDCA, or Plan, Do, Check and Act. For detail, see the Figure-12. Each one of the KAIZEN cycles has its steps from the start to the end in the PDCA process. Once a new improvement becomes a new standard, the next cycle is set up to seek further improvement. KAIZEN is a continual challenge towards ever higher-level improvement, cycle by cycle, without an end.



Source: JICA study team; KAIZEN Manual

Figure-12: KAIZEN in Action – Endless Revolving Activities

The Figure-12 diagram shows not only that KAIZEN is continual undertaking without an end, but also that KAIZEN is action, not static knowledge. KAIZEN in action, or KAIZEN activities, employ diverse knowledge from various areas. Such knowledge can be categorised into five knowledge bases of KAIZEN. The Figure-13, the KAIZEN Tree, shows those knowledge bases that support KAIZEN in action, and relationship between them.



Source: JICA study team; KAIZEN Manual

Figure-13: KAIZEN Tree: A System of Knowledge in Action

When major knowledge pieces related to KAIZEN are put together in this way, the first three knowledge bases: (i) Conceptual Foundation, (ii) KAIZEN Starters and (iii) Vehicle of Company-wide Movement are the building blocks to construct the main pillar of knowledge, which is associated with developing capability to self-organise KAIZEN within a company. Once the main pillar is in place, starting KAIZEN activities is recommended. Knowledge of (iv) Methods and (v) Analytical Tools can be learned over time. KAIZEN is not a set of static knowledge, but dynamic activities in revolving cycles of PDCA. Learning by doing and self-learning are important elements in developing one's KAIZEN capability. Practitioners of KAIZEN will continue to learn and expand knowledge and skills as they face their challenges towards ever higher-level improvement, cycle by cycle.

It is worthy to add a few notes on Fundamental Enablers on Recurrent KAIZEN Agenda shown at the bottom of the KAIZEN Tree. Fundamental Enablers on Recurrent KAIZEN Agenda are a set of basic management capabilities and practices that enable KAIZEN activities to take root and grow in a company.

- The first is Business Planning which is the management capability of formulating and managing business plans including the long-term business plan and the production plan. Such plans make management self-assessment of current situation easier and make effective management of company operation possible. They also provide the basis of analysis used in KAIZEN activities.

- The second is Cost Accounting and Operation Data. As KAIZEN activities at a company advance, cost accounting, especially unit product cost information, becomes indispensable not only with current situation analyses but also goal-setting and verifying of results whenever costs are involved in the KAIZEN activities. Operation data is a similarly indispensable supporting element that should be exploited in KAIZEN's fact-based analyses, planning and reviewing.

- The third is Trust and Empowerment. Because KAIZEN is based on collaboration of top management, middle managers and front-line employees and proactive and spontaneous participation of employees, it is critically important that the top management supports employees' participation, ensures appropriate delegation of authority, and provides employee training programmes.

The capabilities in these three areas may not be fully sufficient in many companies. In such cases, they should be enhanced in support of the advancement of KAIZEN activities within the company.

3.2.2 Defining Scope and Method of KAIZEN Guidance of the Pilot Project

1) Two phases of KAIZEN activities and the scope of KAIZEN Guidance

As discussed above, KAIZEN is continual undertaking of dynamic activities by an organisation's members in endless revolving cycles. Before the self-practicing of KAIZEN starts, however, every company that is new to KAIZEN would need an intensive phase of the introductory process of preparing themselves to start KAIZEN activity by themselves. This phase is called "Self-organising

Source: JICA study team

Figure-14:
Two phases of KAIZEN Activities

process of KAIZEN." After this phase comes the phase of "Self-practicing of KAIZEN". The Self-organising process of KAIZEN can be a project-type engagement of a company's management and employees with a planned end-date and a set agenda to be accomplished. During this phase, the company implements tasks such as learning the basic knowledge, experimenting the basic KAIZEN activities, and institutionalising the framework to make KAIZEN take root and expand on a company-wide scale. This initial phase of Self-organisation is a critical period for the company to build the KAIZEN framework in its organisation.

In implementing the pilot project, it was determined that the KAIZEN guidance for the pilot companies should solely focus on assisting the companies' Self-organising process of KAIZEN, in other words, helping their learning of the basic knowledge, experiments of the basic activities and institutionalisation of management framework.

2) Focus on KAIZEN at the workplace

As mentioned in the definition of KAIZEN earlier, foremost important in KAIZEN are the improvement activities at the front-line workplaces. In the third guiding principle, focus on the workplace is emphasised. KAIZEN at the workplace is the foundation of improvement efforts at KAIZEN-practicing companies. A success in KAIZEN results in higher morale at the workplace, in general. This reinforces the momentum of KAIZEN activities at the workplace. This in turn makes continued development of KAIZEN activities at the company all the more likely. Thus KAIZEN at the workplace is the key to the entry to the self-practicing phase in which the endless revolving activities of KAIZEN should develop. For this reason, the KAIZEN guidance focuses on the company's self-organisation for KAIZEN at the workplace.

3) Uniform KAIZEN guidance programme

Having identified the focused scope, the project team devised the programme of KAIZEN guidance of the pilot project. Directly dealing with the self-organisation phase with focus on KAIZEN at the workplace, the programme is to help the companies with six definitive steps of guidance as shown in the Table-11.

Table-11: Pilot project KAIZEN Guidance Programme (Applied to the second group)

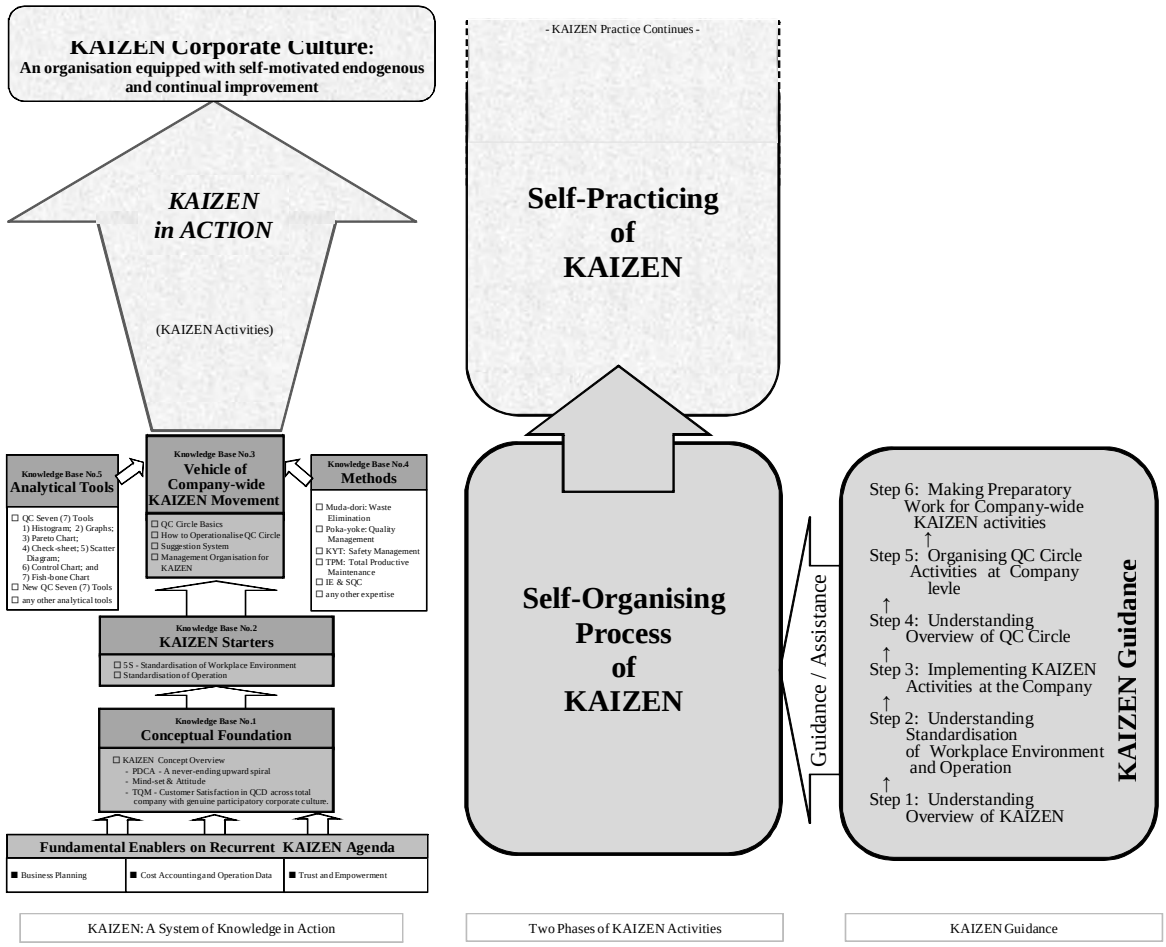
Session #	Step	Session Agenda (Theme / Action)	Format
1	**Step-1**:. Understanding Overview of KAIZEN	Overview of KAIZEN	Seminar: Group training
2	**Step-2**: Understanding Standardisation of Workplace & Operation	5S – Standardisation of Workplace Environment	
3		Operation Standard & Time Study	
4		Elimination of Waste (MUDA)	
5	**Step-3**: Implementing KAIZEN Activities at the company	Organising 'Sort' activity	On-site guidance at company
6		Understanding '3S' activities in Elimination of MUDA	
7		Standardising Operations at Selected Workplace	
8	**Step-4**: Understanding Overview of QCC	How to Organize QC Circles; What is QC Story?	Seminar: Group training
9		What is QCC Presentation Meeting? How are QC 7 Tools utilised?	
10	**Step-5**: Organizing QCC Activities at the Company	Conducting QCC Meeting	On-site guidance at company
11		Conducting QCC Presentation Meeting	
12	**Step-6**:. Preparatory work for Company-wide KAIZEN activities	▸Review KAIZEN conditions & company-wide dissemination direction. Define deficiency knowledge if necessary. ▸Review performance of company operation. Complement deficiency knowledge if necessary.	

Source: JICA study team; KAIZEN Manual

It should be noted that the KAIZEN guidance, directly assisting the company's self-organising process, is to be uniformly applied to all the pilot companies. It should also be noted, however, that in the on-site guidance (sessions # 5~7 and #10~12), each company does KAIZEN exercise at their workplaces, and the company is thus to utilise the guidance opportunities to apply to their own problems in order to build the capability to carry out KAIZEN activities by themselves in their unique situations.

Also noteworthy about the KAIZEN guidance activities is the fact that each company is required to engage in three kinds of activities under the guidance, namely, (i) group training (seminar), (ii) on-site guidance at company, and (iii) in-company self-exercise between guidance sessions (homework assignments). With regard to (iii) in-company self-exercise, it is critical for the success of KAIZEN guidance that the company at minimum diligently performs homework assignments given at the end of each guidance session.

In summary for this subsection, Figure-15 illustrates the KAIZEN guidance concept that assists the self-organising process.



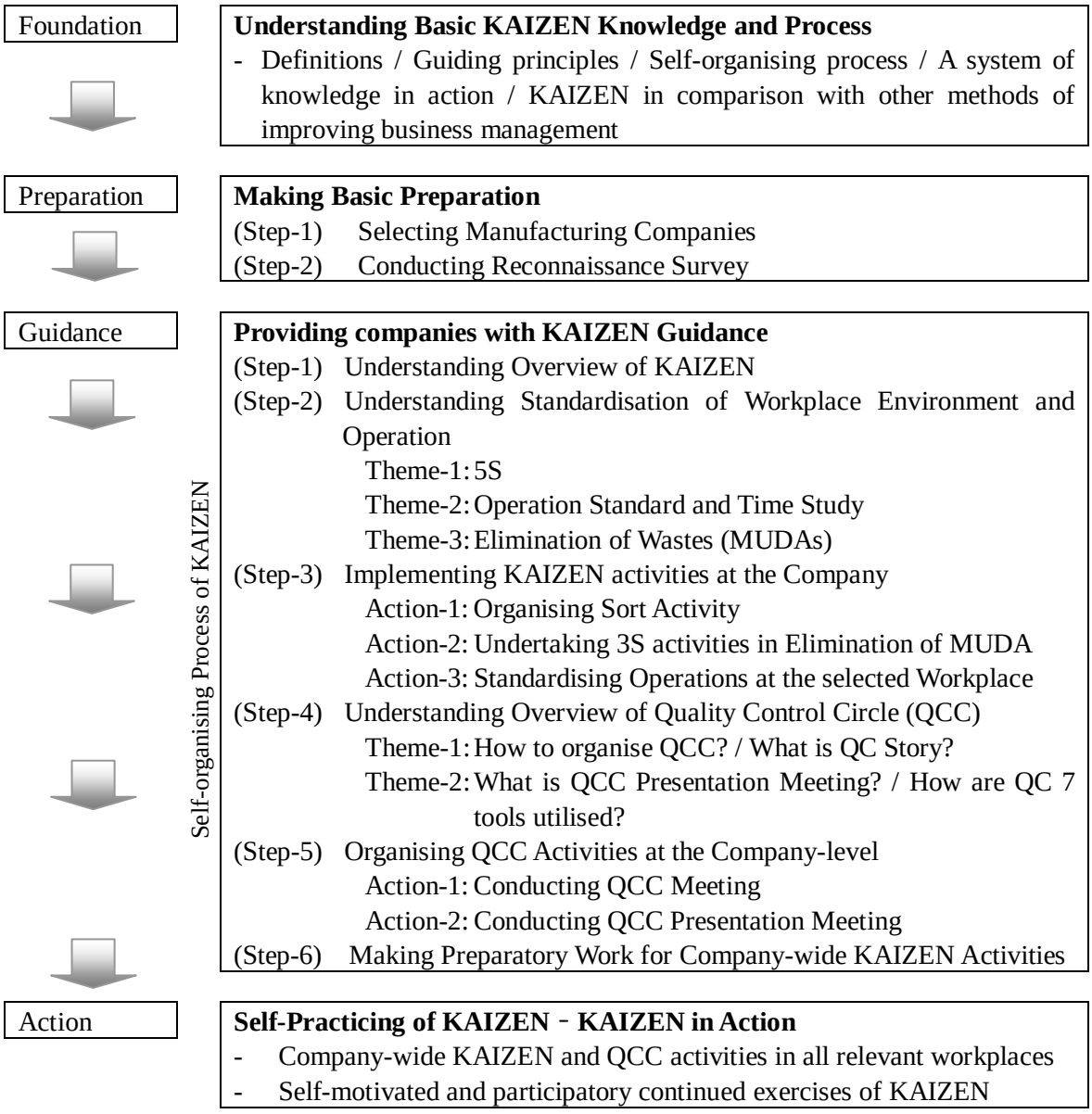
Source: JICA study team

Figure-15: KAIZEN Guidance Assists the Self-Organising Process

Within the knowledge bases on the left in this figure, the three pillar knowledge bases (shaded) are the most directly related to the self-organising process to build the groundwork for self-practicing of KAIZEN or KAIZEN in action. Therefore, the KAIZEN guidance spends a significant amount of time providing training and guidance on these three knowledge bases.

3.2.3 A Roadmap of KAIZEN for Ethiopian Companies

With the defining of the scope and method of the KAIZEN guidance to assist companies with their self-organising process of KAIZEN, a roadmap of KAIZEN is now drawn for manufacturing companies in Ethiopia.



Source: JICA study team

Figure-16: Roadmap of KAIZEN for Ethiopian Companies

3.2.4 Modality of KAIZEN Guidance for Company-wide Expansion

It was found during the pilot project that the modality of conducting KAIZEN activities at selected workplaces is operational and effective. Under the KAIZEN guidance, the activities were designed to be conducted first in two model workplaces chosen by each company, and then expanded into the company-wide activities. At the beginning, it is observed that some executives and managerial staff of the companies oftentimes had a sceptical attitude, or a sense of reservation, against KAIZEN or any form of a new managerial system. This mind-set barrier can significantly hinder the introduction of KAIZEN. Thus, the approach of setting up a limited number of model areas or pilot areas within each

company should mitigate this negative psychology and then build on the initial success at the model workplaces.

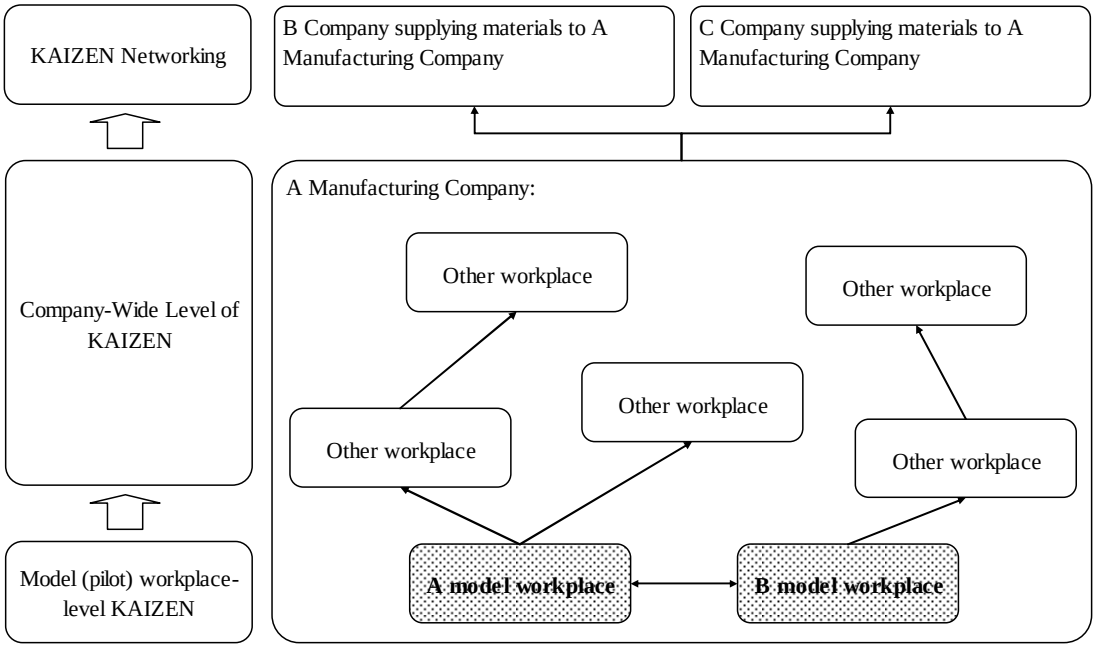
Two model workplaces can be selected in accordance with type of workplaces.

One workplace:	one workplace that deals with many materials in the process shall be selected.
Another workplace:	another workplace whose process can be labour intensive or handled by relatively a large number of workers shall be selected.

KAIZEN always emphasises genuine participatory actions at the workplace connecting systematically with the company management for improvement of quality and productivity. Sharing information within the company by visualising effects and results from KAIZEN at the selected workplaces is found to motivate other company staff in different sections to initiate KAIZEN activities. The figure shown below is an attempt to illustrate a company-based dissemination flow of KAIZEN.

KAIZEN at model (pilot) workplace level:

Two shadowed boxes in Figure-17 indicate two model workplaces in a company, where KAIZEN activities are conducted mainly by the KAIZEN core team as well as the QC circles. Through these activities, the company exercises self-organisation of KAIZEN. Only after certain recognition on both visible and invisible results from KAIZEN, the company shall move into company-wide KAIZEN activities. In other words, in the event that such results from two model workplace do not reach expectations, the company shall be advised that top management reviews their own commitment and considers interventions.



Source: JICA study team; KAIZEN Manual

Figure-17: Company-Based Dissemination of KAIZEN

KAIZEN at the company level:

Building on the success in the model workplaces and their QCCs' activities, the company shall expand KAIZEN activities in the company-wide scale. The company will organise QCCs in the relevant workplaces across the company by replicating the two model QCCs. At the same time, the company needs to institutionalise the support system of KAIZEN activities. This includes (i) inter-QCC activities such as QCC leader meetings and company-wide QCC presentation meetings and (ii) the company's annual KAIZEN action plan which may include various events to promote QCC and other KAIZEN activities.

KAIZEN networking:

In order for the company to maximise effects from company-wide KAIZEN activity, the company may move into further quality assurance activities to be even extended to suppliers. Such extended mechanism is here referred to as KAIZEN Networking.

3.2.5 Notes on Initial Approach and Subsequent Changes in the Method of Pilot Project

The methodology of the pilot project, the KAIZEN guidance, presented in the preceding sections is a product of various efforts of initial studies and planning followed by testing and modification in the course of the pilot project implementation. After the initial roll-out of the pilot project followed by intensive reviews of the approaches, the JICA study team and KU set up the methodology which is based on the 'workplace KAIZEN' approach. The methodology then continued to be reviewed, and some improvements were made. The following summarises the initial reviews and subsequent changes in the methodology of the pilot project, the KAIZEN guidance.

1) Initial approach: Management diagnosis approach

When the pilot project activities started in Phase 2 in January 2010, the initial method that the JICA study team proposed and adopted was the management-diagnosis approach. This approach starts with the analysis of company management to identify problems to be tackled. It is generally regarded as an effective approach in the consulting practice of operation/process improvement, and is in contrast to the workplace KAIZEN (GENBA KAIZEN) approach which generally takes more time to implement.

In the initial management-diagnosis approach, the management diagnosis in the first phase was followed by a joint review of the diagnosis results, which leads to identifying the problems that the company management wants to solve. The identified problems are then addressed with the consultant's guidance: from selecting problem-solving tools to implementing a solution measure to establishing new standards. In this problem-solving process with participation of front-line workers, managers and employees are expected to acquire basic KAIZEN skills that can be applied by themselves in future. However, the JICA study team and KU came to realise that this approach had certain difficulties in the perspective of adaptation for Ethiopian KAIZEN consultancy in the following three areas.

(1) During the management diagnosis of the pilot companies, the pilot project team experienced the problem of diverse responses from the pilot company management ranging from as many as sixty problems presented at one company to unfocused topics raised at the management meeting at another company. The management problems presented were in many cases difficult to analyse due to lack of supporting data. The pilot project team realised that under these circumstances it would take much more time than expected to proceed on a fruitful management diagnosis that would lead to the guidance on problem solving in the workplace KAIZEN activities.

(2) Under the management diagnosis approach, after the diagnosis is done, its activity focuses on individual problem-solving efforts. As a result, the guidance activities vary from company to company with different tools and methods, some of which can be very technical. This created a challenge in the capacity development of the KU members. The focus on particular problem-solving also poses a challenge for company managers and employees in gaining the general KAIZEN knowledge and skills to continue and develop their own KAIZEN activities after the diagnosis and guidance are completed.

(3) There was a need identified by the KU side for more uniform and systematised explanation of KAIZEN concepts. Given the task of the technology transfer in the country where conceptual clarity is consciously called for, weakness in the systematised structure of KAIZEN concepts and multiplicity in the use of terminology created a barrier for the pilot companies as well as for KU.

2) A standardised common KAIZEN guidance method based on workplace KAIZEN

In response to these identified issues, the JICA study team determined that following changes be made to enhance effectiveness in the implementation of the project activities:

(1) Change the pilot project method from the management-diagnosis approach to the workplace KAIZEN approach and establish a standardised method of the KAIZEN guidance based on this approach. The workplace KAIZEN approach should be more efficient in that it deals with KAIZEN at the bottom from the outset directly. Changes at the workplace from the bottom will eventually force management to improve their management practices.

With the revised method, the diagnosis and guidance activities focus on providing companies with training and assistance to make them learn and acquire the capability of self-practicing of the workplace KAIZEN by themselves. The new method can be applied to all the pilot project sectors. Despite use of the common method, each company will still apply the KAIZEN methods to their own unique situations and do KAIZEN exercise on their own problems.

(2) Re-establish the conceptual definition of KAIZEN by giving a systematised structure to the KAIZEN-related concept in alignment with the purpose of KAIZEN's adaptation and dissemination in Ethiopia. The re-establishment of the definition was needed in part due to the selection of the workplace KAIZEN approach.

These revisions were implemented to the first group companies of the pilot project during the mid-course in July 2010.

(3) Further improvements

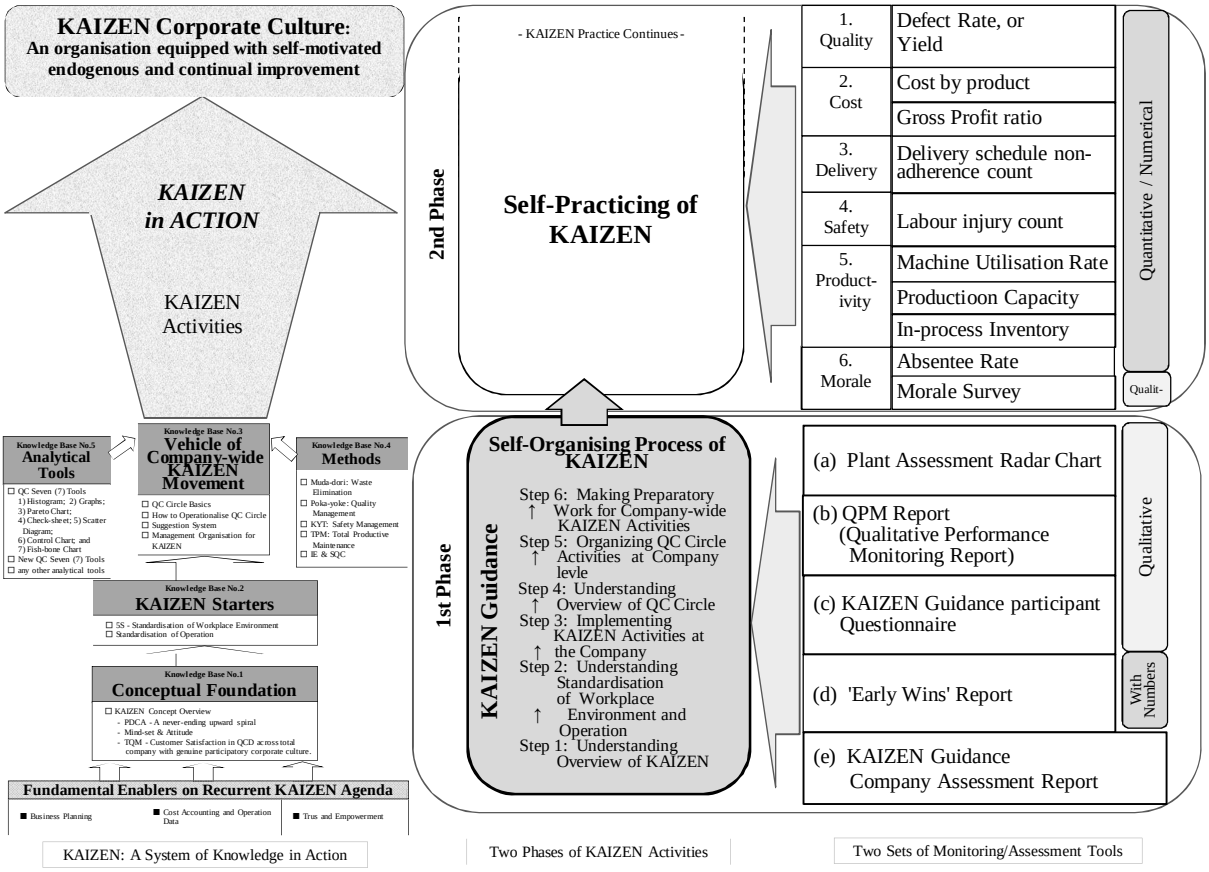
The revised KAIZEN guidance method and its programme were further reviewed for improvement. Before the second group guidance activities started in October 2010, the guidance programme was revised to include additional seminar sessions (on QC Circle) and additional follow-up days for the on-site company visit guidance in order to enhance effectiveness in the area of QC Circle and the preparation of company-wide practices. With respect to the KAIZEN knowledge bases ("KAIZEN Tree") the areas of company management capabilities regarded as "Pre-requisites for KAIZEN" were reviewed with the experiences from both the first and second groups, as discussed in the section 2.6. As a result, the categorisation as "pre-requisites" has been revised to "Fundamental Enablers on Recurrent KAIZEN Agenda".

The KAIZEN guidance methodology described in the previous sections reflects all the revisions and changes described above.

3.3 Methodology of Monitoring and Assessment of KAIZEN Activities

3.3.1 Two Sets of Monitoring Tools for the Two Phases of KAIZEN Activities

The methodology for monitoring and assessment of KAIZEN activities was studied and developed by the pilot project team in conjunction with the development of the KAIZEN guidance methodology presented in 3.2. As presented in 3.2.2 1) Two phases of KAIZEN activities and the scope of KAIZEN guidance in the last section, it is recognised that there are two phases in KAIZEN activities. The first phase is for the self-organising process of KAIZEN, for which the KAIZEN guidance provides assistance. Once the company graduates from the first phase, the company starts its KAIZEN activities, marking the beginning of the self-practicing phase of KAIZEN with revolving cycles of continuous improvement.



Source: JICA study team; KAIZEN Manual

Figure-18: Two phases of KAIZEN Activities and Corresponding Monitoring/Assessment

For the KAIZEN guidance which was designed to help the first phase of the companies' self-organising process, the monitoring and assessment focuses on the companies' self-organisation achievements. The purpose of the assessment is in part for mid-course progress review and in major part for overall review of the companies' activities in the entire KAIZEN guidance period.

In the post-guidance phase, i.e., the self-practicing phase, the companies' overall goal of KAIZEN activities at the company management level will centre on the improvements in quality and productivity of the company operation. The monitoring and assessment of the self-practicing KAIZEN activities should be a part of the companies' own business review process.

Based on the difference in the objectives of the activities of these two phases, two separate sets of tools of monitoring and assessment are needed for the two phases as illustrated in the figure above. At the bottom right are the monitoring / assessment tools for the activities during the KAIZEN guidance that should be prepared by the consultants. These will be presented in more detail in the next section. At the upper right are the monitoring and assessment tools recommended for the KAIZEN activities for the self-practicing phase.

3.3.2 Monitoring and Assessment Method for KAIZEN Guidance Activities (First phase)

The monitoring and assessment method for the activities in the KAIZEN guidance phase has been developed based on the characteristics of the phase described above. The method utilises the tools shown in the Table-12. Plant Assessment Radar Chart (a) is prepared and used by the consultants for the mid-course progress assessment of each company. QPM Report (b) reviews achievements of companies in all steps of the guidance in terms of understanding, skills, attitude, and actions, which are assessed by the consultants. The KAIZEN Guidance Questionnaire (c) supplements QPM Report with the assessment by the company personnel regarding their understanding and attitude. 'Early Wins' Report (d) is based on reporting from the companies of their early benefits and improvements as a result of the exercise of KAIZEN activities. The KAIZEN Guidance Company Assessment Report (e) is the final assessment of each company's prospect of the KAIZEN activity development going forward.

Table-12: Tools of Monitoring & Assessment for KAIZEN Guidance

Monitoring Tools	In Summary	Description
(a) Plant Assessment Radar Chart	Mid-course progress assessment by consultants	Assessment by the consultant on the degree of standardisation of workplace environment in terms of 3S with reference to residual wastes observed in the workplace. It can be done easily at any time. In the KAIZEN guidance, it is done at the time of the first company-site guidance and also at the mid-term of the guidance to assess the companies' progress before moving onto the QCC-based KAIZEN exercise.
(b) KAIZEN Guidance Qualitative Performance Monitoring Report (QPM Report)	Overall assessment by consultants	Assessment by the consultant on the companies in terms of understanding, skills, attitude and actions taken in accordance with each of the 6 steps of the guidance. The performance levels of all assessment items are indexed and the results are listed in the QPM Sheet. Its Radar Chart versions are also used for sector-based assessment and individual company assessment.
(c) KAIZEN Guidance Participant Questionnaire	Supplements above with company personnel's self-assessment.	Questionnaire survey to the key personnel among the participants of the KAIZEN guidance activities of each company. Responses of one company's participants are summed up and averaged to arrive at company-group responses. Survey is done twice using the same questionnaire and the same respondents: First at the initial phase of the guidance as the entry point survey; Second at the end of the guidance as the exit point survey. Comparing the two surveys would reveal changes in understanding, skills and attitudes of the key personnel involved in KAIZEN at each company during the guidance period.

(d) 'Early Wins' Report	Early benefits / improvements compiled by consultants based on company reporting	A brief analysis compiled by the consultants based on reports from the companies with respect to tangible benefits and improvements from the KAIZEN exercises during the guidance. The results are presented with numbers to the extent possible. Examples of results would include: (i) monetary gains from sale of unnecessary items after sort exercise; (ii) shortening of search time for tools/parts; (iii) waste eliminated after the first exercise of standardisation of operation.
(e) KAIZEN Guidance Company Assessment Report	Assessment on company by consultants	Assessment of the companies with respect to KAIZEN. The assessment incorporates two elements: (i) the company's activities in the self-organising process measured by the assessment tools (a) through (d); and (ii) the management situation and issues of the company. The report assesses the prospect of future development of the company's KAIZEN activities.

Source: JICA study team; KAIZEN Manual

Of the monitoring tools above, (a), (b) and (c) focus on achievement of the KAIZEN guidance's objective, while (d) 'Early Wins' Report deals with tangible benefits and improvements materialised through the KAIZEN guidance activities. The KAIZEN Guidance's objective is to make the company prepared for their own KAIZEN activities that should take root within their organisation. In assessing the achievement with respect to this objective, the primary outcome to look for is the companies' attainment of requisite knowledge and skills, actions taken, and attitude of people, which together form the basis of the self-practicing of KAIZEN going forward. From the objective-consistent point of view, benefits and improvements accomplished under the KAIZEN guidance are a secondary outcome that should be welcomed. Such tangible benefits and improvements through the exercises of the guidance do not normally indicate achievements of the objective of the KAIZEN guidance.

'Early Wins' Report, however, deserves additional notes with respect to (i) characteristics of the early benefits and improvement, and (ii) limitations on quantification.

(i) The early benefits and improvement that 'Early Wins' Report covers are valuable success experiences for managers and employees in terms of motivation and confidence-building in the KAIZEN activities. After all, KAIZEN needs to be fun so that it can be sustained. In this regard, the companies should collect information associated with such early successes and share the information with managers and employees within the company.

(ii) In the 'Early Wins' Report, it is helpful to quantify the benefits and improvements to the extent possible in order to present the successes objectively. However, it should be noted that limitations exist in objectively measuring and quantifying improvements For instance, quantifying change from "before" to "after" is normally difficult, since such early improvements are made from where standards barely existed. Nevertheless, the 'Early Wins' Report with indicative and tentative calculations to the extent possible serves the purpose of sharing the success story with the managers

and employees within the company. It also helps the consultants with monitoring general effectiveness of the guidance.

Lastly, with regards to (e) KAIZEN Guidance Company Assessment Report, it should be noted that, although the report takes into account the KAIZEN guidance activity performance, its focus lies in the assessment of the company. The report also takes management factors and other issues into consideration to make an assessment on the company's prospect of a successful development of KAIZEN activities in future. This assessment is useful in relation to government intervention strategies for KAIZEN dissemination.

The practical application of these KAIZEN guidance monitoring tools is presented in subsection 3.3.4 *KAIZEN Guidance Monitoring and Assessment in Practice*.

3.3.3 Basic indicators for management of production: Monitoring tools for Self-Practicing of KAIZEN (Second phase)

The indicators listed in the Table-13 below represent a set of basic indicators used in managing production operations. These indicators enable company managers to better understand the current situation and changes in the production operations. They will have to be captured and recorded periodically over a long time.

These same indicators are also applicable to KAIZEN activities in the phase of self-practicing. From the KAIZEN perspective, the following points are noted:

- The indicators will capture the results of KAIZEN activities over time as the activities achieve and consolidate business improvements in continuous revolving cycles.
- The operation data behind these indicators are the data used in the workplace KAIZEN activities. These include QC Circles' analyses of current situation, problem causes and so on. The data including those at the workplace level should be collected, saved and managed under company-wide standards. The data expressed in monetary terms need to be consistent with the corporate accounting. Proper data management is the basis of objective performance assessment of KAIZEN activities at various workplaces.
- In the area of morale, KAIZEN activities play a significant role in improving morale of employees and creating the motivated workforce. The monitoring focus is therefore placed on employee's enthusiasm and initiatives towards work at the company, and those of the company's workforce at large. With respect to the management, monitoring is related to management attitude, communication, management framework and actions that support employees' proactive participations and initiatives. These morale surveys, if done periodically, will complement human resources statistics ((6-1) in the Table-13) to monitor an organisation's morale in the broader perspective of mind-set and attitude of the organisation members.

Table-13: Basic Indicators for Management of Production

Area	Indicator	Formula	Notes
1.Quality	(1-1) Defect Rate	(Quantity of defects) / (Quantity of product produced)	Either one of the two should be used depending on the nature of production process.
	(1-2) Yield	(Quantity of good products produced) / (Quantity of material input)	
2. Cost	(2-1) Product cost (per unit product)	(Direct material cost + Direct labour cost + Manufacturing overhead[as applied to product line]) / quantity of units produced	*Gross Profit Ratio: by product, as well as total company
	(2-2) Gross Profit Ratio *	(Sales – Cost of Goods Sold) / (Sales) [for the product]	
3. Delivery	(3-1) Delivery schedule non-adherence count	Number of occurrence of delivery schedule non-adherence	Associated records needed: Description including reason and background of each non-adherence case.
4. Safety	(4-1) Labour injury count	Number of labour injuries	Associated records needed: Description of incidence including reason and background.
5.Productivity	(5-1) Machine Utilisation Rate	(Actual time machine utilised) / (Planned machine utilisation time)	Associated records needed: Time & duration and reason of each facility stoppage occurrence.
	(5-2) Production Capacity	Quantity of products produced per unit time	
	(5-3) In-process Inventory [Turn-over of In-process Inventory]	Quantity of total In-process inventory at each process [(Quantity of total In-process inventory of a process) / (Monthly total quantity of usage of user processes*)]	*Numerator: a monthly stocktaking on a designated day of the month. *Denominator: Latest 3-month average of usage by the user processes.
6. Morale	(6-1) Absentee Ratio	(Number of absent employees) / (Total number of employees)	(HR data)
	<Monitoring tool> (6-2) Morale Survey (a) Managers (b) Employees	Survey using questionnaires to understand morale and motivation within the organization. (a) Manager questionnaire (manager's attitude and actions to improve morale & motivation of workforce) (b) Employee questionnaire (attitude & motivation towards participation, self-initiative, etc.)	

Source: JICA study team; KAIZEN Manual

In addition, the Table-14 contains general management indicators for manufacturing companies, which are generally used to monitor the total company direction as a business concern. It is up to the company management to review these indicators. At the same time, these indicators represent the minimum set of indicators for the government to consider collecting to create a financial data bank for the industrial sector. Such a data bank would be beneficial for the company managers as well if the data of sub-sector averages can be made public. A quick analysis can be done by a company manager as to where the company stands relative to the sub-sector average. It would be similarly helpful for KAIZEN consultants.

Table-14: Basic General Management Indicators for Manufacturing Companies

General Management Statistics	Sales Revenue	
	Gross Profit	Sales – Cost of Goods Sold
	Number of Employees	
	Capital (Stockholders' Equity)	
General Management Indices	Gross Profit Ratio [Total company]	(Sales – Cost of Goods Sold) / Sales
	Sales per head	Sales / Number of employees
	Gross Profit per head	Gross Profit / Number of employees
	Capital per head	Capital / Number of employees
	Capital Turnover	Sales / Capital

Source: JICA study team; KAIZEN Manual

Management indicators and data management are part of what is regarded as 'fundamental enablers' of KAIZEN as discussed in 3.2.1. However, the pilot project team realised in the course of the project implementation that such numerical indicators and related operation data were oftentimes missing at the companies. To take a closer look at this matter, the team conducted a survey on the availability of the numerical indicators at the pilot companies at the end of the pilot project activity. In conjunction with the indicator survey, it also conducted a trial morale survey at the pilot companies, using model versions of the morale survey questionnaires in Table-13 ((6-2) (a)) for management and ((b) for employees). The survey results are presented in 3.4.4 in the next section.

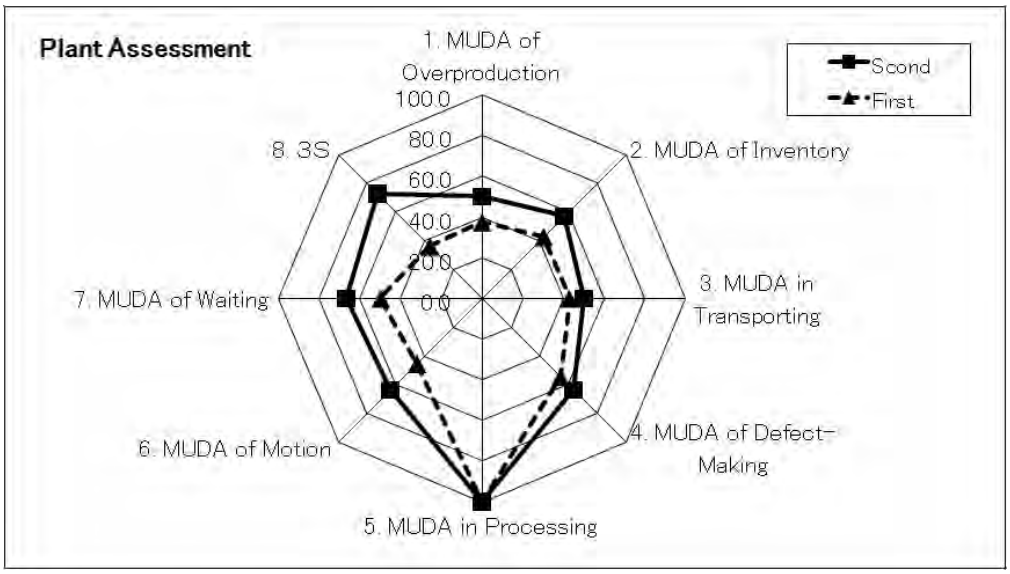
3.3.4 KAIZEN Guidance Monitoring and Assessment in Practice

As discussed in 2) in the previous subsection, the monitoring and assessment method for the KAIZEN guidance activities was developed through the pilot project. The following is a brief presentation of how the method works with descriptions of the tools during/after the KAIZEN guidance.

1) Plant Assessment Radar Chart

Plant Assessment Radar Chart is used to make an assessment of the progress in standardisation of the workplace environment as well as the operation of the participating company.

The first assessment is done at the time of the first company-site guidance (Action 1 of Step-3) in the Figure-16. The first assessment results represent the initial condition of the model workplaces of the company. During the course of the guidance, the first results can be used as a benchmark to review progress being made. The second assessment is done at the end of Step-3 after the standardisation exercise sessions are finished to determine whether the company should move onto the QCC activity guidance.



Source: JICA study team

Figure-19: Plant Assessment Radar Chart (Example)

Muda Checklist

Shop: ASM Process: SUB Date: Person in charge:

Type of MUDA	Wasteful or Bad Condition	There is(bad)	There isn't	Cause and corrective actions
1. MUDA of overproduction	1. No Production plan and Control board			
	2. Not Leveled production plan			
	3. Production not according to plan			
	4. Surplus manpower			
	5. Surplus production capacity			
	6. Batch production			
	7. Push System			
	8. Operation in a caravan			
	9. Unbalanced volume between following processes			
	Sub Total	#DIV/0!		
inventory	1. Overstock on racks and inventory			
	2. Over-space for inventory			
	3. Parts and Material on passage			
	4. In-process stocks in one process			
	5. In-process stocks between operators			

Type of MUDA	Wasteful or Bad Condition	There is(bad)	There isn't	Cause and corrective actions
5. MUDA in processing	1. Unnecessary processing not required performance quality			
	2. Elimination of unnecessary processing			
	3. Alternatives of unnecessary processing			
	4. Simplification of processing not involved performance quality			
	Sub Total	#DIV/0!		
MUDA of motion	1. Walking movement			
	2. Operation turning around			
	3. Operation turning sideways			
	4. Operation moving shoulders up and down			
	5. Operation moving elbows			
	6. Operation moving wrists			
	7. Free hand of right or left in operation			
	8. Surveillance, gawking, rest in operation			
	9. Not repetitive operation			

Source: JICA study team; KAIZEN Manual

Figure-20: Checklist for Plant Assessment (partial image only)

Plant Assessment is done by the consultant using a checklist which should be filled out on-site at the workplace. A sample image of the checklist is shown Figure-20. Some of the check points in the checklist are modified for each industry sub-sector to suit sector-specific situations. The checklist was designed to make a quick assessment with simplified questions and two-choice answers. The choice is positive or negative, such as 'yes' or 'no', or 'existing' or 'non existing' in terms of conditions of seven MUDA (wastes) and other questions that allow the consultant to answer instantly with common sense based on his/her factory observation experiences. The results from each of the eight groups in the questions in the checklist are 'indexed' in term of percentage of the number of positive answers over the total number of questions in the group. The questions that do not apply to the situation of the company are left unanswered and removed from calculation.

2) KAIZEN Guidance Qualitative Performance Monitoring Report (QPM Report)

KAIZEN Guidance Qualitative Performance Monitoring Report, or QPM for short, is to assess the performances of companies in terms of acquisition of knowledge, skills and actions taken in accordance with each of the 6 steps of the guidance. QPM is completed by the consultants towards the conclusion of the guidance as part of the final assessment of each company.

In QPM Report, assessment targets are designated and grouped into nine groups along the six steps of the guidance. The performance of all target items are graded at either of 1 ~ 4 grade levels based on an assessment table in which four grade-discriminating statements are assigned to each of the assessment target items. The Figure-21 shows an example of QPM Report Sheet in which all the assessment items are listed with assessment values.

QPM Report Sheet

No.	Company Name	Preparation – Initial Preparation: Top managements announce the decision to promote KAIZEN activities to employees.	KAIZEN Core Team is organized.	Average	Steps-1~2 – Basic KAIZEN Knowledge Seminar: **1:** Questionnaire Session No1 :Overview of KAIZEN	**2a:** Questionnaire Session No2:Standardisation of Workplace Environment	**2b:** Questionnaire Session No3: Operation Standardand Time Study	**2c:** Questionnaire Session No4: Seminar on Various Aspects of KAIZEN	Average
2-01	Company A	4	4	4	3	3	3	3	3
2-02	Company B	4	4	4	3	3	3	3	3
2-03	Company C	4	4	4	3	3	3	3	3
	Sector Average	4	4	4	3	3	3	3	3
2-04	Company D	4	4	4	4	3	3	4	3.5
2-05	Company E	4	4	4	2	2	2	2	2
2-06	Company F	4	4	4	3	3	2	3	2.75
	Sector Average	4	4	4	3	2.7	2.3	3	2.75
1-09	Company G	4	4	4	2	3	2	3	2.5
1-10	Company H	4	4	4	4	3	3	3	3.25
1-11	Company I	4	4	4	4	3	2	3	3
	Sector Average	4	4	4	3.3	3	2.3	3	2.92
2-07	Company J	4	4	4	3	2	3	3	2.75
2-08	Company J	4	4	4	4	3	3	4	3.5
2-09	Company K	4	4	4	4	3	2	3	3
	Sector Average	4	4	4	3.7	2.7	2.7	3.3	3.08
2-10	Company L	4	4	4	4	1	3	3	2.75
	Sector Average	4	4	4	4	1	3	3	2.75
	All Sector Average	4	4	4	3.4	2.5	2.7	3.1	2.9

No.	Company Name	Step-3 – Standardisation of Workplace Environment: Model workplaces were sufficiently utilized as the trial ground for KAIZEN activities	Sort activities were conducted at the model workplaces.	Set-in-order activities were conducted at the model workplaces	Shine activities were conducted at the model workplaces	Understanding of work environment standardisation was broadened for company-wide expansion.	Average	Standardisation of Operation: Layout charts are utilised.	Standard operation sheets are utilised.	Operation procedure sheets are utilised.	Flow charts are utilised.	Understanding of company-wide standardisation of operation was broadened.	Average
2-01	Company A	4	4	4	4	4	4	4	3	3	4	3	3.4
2-02	Company B	3	3	3	3	3	3	3	2	1	4	1	2.2
2-03	Company C	3	3	2	2	2	2	2	1	1	4	1	1.8
	Sector Average	3	3	3	3	3	3	3	2	2	4	2	2.47
2-04	Company D	3	3	3	4	2	3	3	3	3	3	2	2.8
2-05	Company E	3	3	3	3	2	3	3	3	3	3	2	2.8
2-06	Company F	1	1	1	1	1	1	2	1	1	1	1	1.2
	Sector Average	2.3	2.3	2.3	2.7	1.667	2	2.7	2.3	2.3	2.3	1.7	2.27
1-09	Company G	4	4	4	4	3	4	4	4	4	4	4	4
1-10	Company H	4	3	4	4	3	4	3	3	3	4	4	3.4
1-11	Company I	3	3	3	3	3	3	3	3	3	3	2	2.8
	Sector Average	3.7	3.3	3.7	3.7	3	3	3.3	3.3	3.3	3.7	3.3	3.4
2-07	Company J	4	4	4	3	3	4	3	3	3	3	3	3
2-08	Company J	4	4	4	4	3	4	3	3	3	3	3	3
2-09	Company K	4	4	4	4	3	4	3	2	3	2	2	2.4
	Sector Average	4	4	4	3.7	3	4	3	2.7	3	2.7	2.7	2.8
2-10	Company L	4	4	4	4	3	4	3	3	3	3	3	3
	Sector Average	4	4	4	4	3	4	3	3	3	3	3	3
	All Sector Average	3.5	3.4	3.4	3.4	2.733	3	3	2.7	2.7	3.1	2.5	2.79

No.	Company Name	Step-3 – Elemination of Muda & other Tools: Importance of Sustained Activities: Elimination of Muda was understood.	KAIZEN Board is utilised.	Importance of suggestion system is understood.	Importance of layout is understood.	PDCA cycle is embraced.	Average	Step-4 – QCC Senimar: Questionnaire : QCC 1st day	Questionnaire : QCC 2nd day	Average
2-01	Company A	4	4	1	2	2	2.6	3	3	3
2-02	Company B	3	3	1	2	1	2	3	3	3
2-03	Company C	3	1	1	1	1	1.4	3	3	3
	Sector Average	3	3	1	2	1	2	[illegible]	[illegible]	3
2-04	Company D	3	2	1	3	2	2.2	[illegible]	[illegible]	3.5
2-05	Company E	3	3	1	3	2	2.4	4	3	3.5
2-06	Company F	1	1	1	2	1	1.2	[illegible]	[illegible]	3
	Sector Average	2.3	2	1	2.7	1.67	1.93	3	[illegible]	3.3
1-09	Company G	3	4	1	4	3	3	2	[illegible]	2.5
1-10	Company H	3	3	1	4	3	2.8	[illegible]	[illegible]	3
1-11	Company I	3	3	1	3	3	2.6	[illegible]	[illegible]	3
	Sector Average	3	3.3	1	3.7	3	2.8	2.7	[illegible]	2.8
2-07	Company J	4	4	1	2	3	2.8	[illegible]	[illegible]	3
2-08	Company J	4	4	1	2	3	2.8	[illegible]	[illegible]	3
2-09	Company K	4	4	1	2	3	2.8	[illegible]	4	3.5
	Sector Average	4	4	1	2	3	2.8	[illegible]	[illegible]	3.2
2-10	Company L	4	4	1	2	3	2.8	[illegible]	[illegible]	3
	Sector Average	4	4	1	2	3	2.8	3	3	3
	All Sector Average	3.3	3.2	1	2.4	2.4	2.47	3.1	3.1	3.1

No.	Company Name	Step-5 – QCC Activities: QCCs are organised.	Importance of skill map is understood.	Importance of training based on skill map is understood.	QC Story is utilised.	QCC company-wide expansion is being prepared.	Average
2-01	Company A	3	1	1	2	2	1.8
2-02	Company B	3	4	2	1	1	2.2
2-03	Company C	2	0	0	0	0	0.4
	Sector Average	3	2	1	1	1	1.5
2-04	Company D	3	1	0	1	1	1.2
2-05	Company E	3	1	0	1	1	1.2
2-06	Company F	1	0	0	0	0	0.2
	Sector Average	2.3	0.7	0	0.7	0.7	0.9
1-09	Company G	4	1	1	2	4	2.4
1-10	Company H	4	1	0	2	3	2
1-11	Company I	3	1	0	2	2	1.6
	Sector Average	3.7	1	0.3	2	3	2
2-07	Company J	4	2	1	3	2	2.4
2-08	Company J	4	2	1	2	2	2.2
2-09	Company K	4	2	1	1	2	2
	Sector Average	4	2	1	2	2	2.2
2-10	Company L	4	2	1	1	2	2
	Sector Average	4	2	1	1	2	2
	All Sector Average	3.3	1.5	0.7	1.3	1.7	1.7

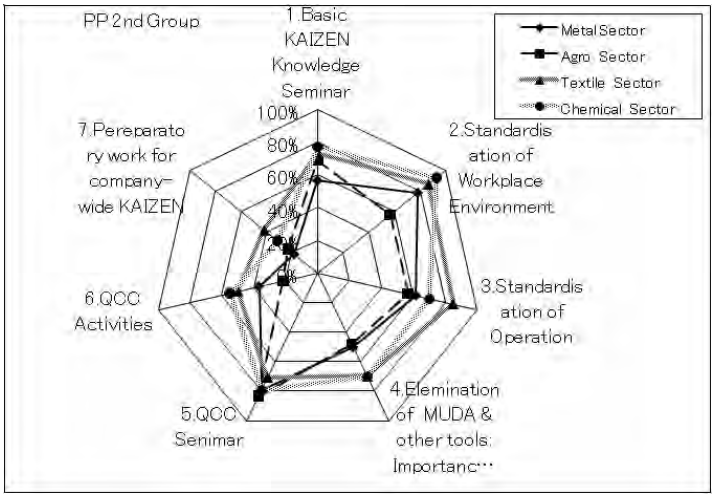
No.	Company Name	Step-6 – Pereparatory work for company-wide KAIZEN: Institutionalisation for company-wide KAIZEN activities is under way	A practice is established to formulate business plan by the company themselves and to review and revise it periodically.	Cpmpany-wide quality management is being established	Company-wide cost management is being established.	Importance of employee motivation and employee satisfaction is understood.	Average	Number of Visitw
2-01	Company A	2	1	1	1	2	1.4	6
2-02	Company B	0	0	1	0	1	0.4	6
2-03	Company C	0	0	1	0	1	0.4	6
	Sector Average	1	0	1	0	1	0.7	6
2-04	Company D	1	1	1	2	2	1.4	6
2-05	Company E	1	1	1	1	1	1.0	5
2-06	Company F	0	1	0	1	0	0.4	6
	Sector Average	0.7	1	0.7	1.3	1	0.9	6
1-09	Company G	2	2	2	4	3	2.6	8
1-10	Company H	1	2	1	3	2	1.8	9
1-11	Company I	0	0	1	1	1	0.6	9
	Sector Average	1	1.33	1.3	2.7	2	1.7	9
2-07	Company J	1	1	1	1	2	1.2	6
2-08	Company J	1	2	1	1	3	1.6	6
2-09	Company K	1	1	1	0	2	1.0	6
	Sector Average	1	1.33	1	0.7	2.3	1.3	6
2-10	Company L	1	1	1	1	2	1.2	6
	Sector Average	1	1	1	1	2	1.2	6
	All Sector Average	0.9	1	1	1.2	1.7	1.2	7

Assessment values in the sheet are for example purposes only.

Source: JICA study team; KAIZEN Manual

Figure-21: KAIZEN Guidance Qualitative Performance Monitoring (QPM) Report Sheet (sample only)

QPM can also be presented in the form of a Radar Chart.



Source: JICA study team

Figure-22: QPM Radar Chart (Example)

To fill out QPM Sheet, QPM assessment table is used (Figure-23). The QPM assessment table contains four grade-discriminator statements (corresponding to the 4 levels: 1~4) for each assessment target item. For the assessment targets for understanding of seminar contents Steps 1-2 and 4, the seminars' daily questionnaire results are used for the determination of the levels.

QPM Assessment Table:
Assessment Targets and Discriminating Statements ([1] ~ [4])

Guidance Steps	Assessment Target Items	Grade-Discriminators	Grade Determined
Steps-1~2: Basic Seminar (4-day)	1. Seminar Day 1 questionnaire	(Average point of the respondents' answers to be graded into 1~4)	
	2. Seminar Day 2 questionnaire	(Average point of the respondents' answers to be graded into 1~4)	
	3. Seminar Day 3 questionnaire	(Average point of the respondents' answers to be graded into 1~4)	
	4. Seminar Day 4 questionnaire	(Average point of the respondents' answers to be graded into 1~4)	
Step-3(1): Standardisation of Workplace Environment	1. Model workplaces were sufficiently utilized as the trial ground for KAIZEN activities.	1: Model workplaces were designated.	
		2: KAIZEN activities were started at the model workplaces.	
		3: Objectives of KAIZEN activities at the model workplaces were understood.	
		4: What has been learned through the model workplace activities can now be applied to self-initiated KAIZEN activities.	
	2. Sort activities were conducted at the model workplaces.	1: Process of establishing Sort rules was understood.	
		2: Sort rules were established.	
		3: Sort activities were implemented at the model workplaces.	
		4: The experience of implementing Sort at the model workplaces can now be applied to further 5S activities.	
	3. Set-in-order activities were conducted at the model workplaces.	1: Process of establishing Set-in-order rules was understood.	
		2: Steps of implementing Set-in-order activities were understood.	
		3: Set-in-order activities were implemented at the model workplaces.	
		4: The experience of implementing Set-in-order at the model workplaces can now be applied to further 5S activities.	
	4. Shine activities were conducted at the model workplaces.	1: Objectives of Shine activities were understood.	
		2: Steps of implementing Shine activities were understood.	
		3: It was understood that Shine and inspection were a combined single set of activities.	
		4: The experience of implementing Shine at the model workplaces can now be applied to further 5S activities.	
	5. Understanding of work environment standardisation was broadened for company-wide expansion.	1: Necessity of standardisation of workplace environment was understood.	
		2: Steps of establishing rules for standardising workplace environment were understood.	
		3: Rules for standardising work environment at the model workplaces were established.	
		4: Rules for company-wide standardisation of workplace environment were established.	
Step-3(b): Standardisation of Operation	1. Layout charts are utilised.	1: Necessity of layout charts was understood.	
		2: Steps of creating layout charts were understood.	
		3: How to make use of layout charts was understood.	
		4: The experience of utilising layout charts can now be applied to further KAIZEN activities.	
	2. Standard operation sheets are utilised.	1: Objectives of standard operation sheet was understood.	
		2: Steps of creating a standard operation sheet was understood.	
		3: How to make use of standard operation sheet was understood.	
		4: A framework was established to manage standard operation sheets at the workplaces.	
	3. Operation procedure sheets are utilised.	1: Objectives of operation procedure sheet were understood.	
		2: Steps of creating an operation procedure sheet was understood.	
		3: How to make use of operation procedure sheet was understood.	

Source: JICA study team; KAIZEN Manual

Figure-23: QPM Assessment Table (partial image only)

3) KAIZEN Guidance Participant Questionnaire

KAIZEN Guidance Participant Questionnaire monitors the participants' understanding of basic knowledge, skills, motivation and their companies' willingness towards KAIZEN. By conducting the survey twice during the course of the Guidance, an entry point survey and an exit point survey using an identical set of questions, the survey can gauge changes in the knowledge and attitude of the key personnel and management direction of their respective companies.

Basic Knowledge of KAIZEN

Questionnaire Sheet

Thank you in advance for extending your cooperation into filling out this questionnaire. Some of you may have filled out a questionnaire a few months ago. Now that you have gone through the activities of KAIZEN guidance with us, we are asking you to answer similar questions as listed below. Your answers are believed to help us improve contents and methods of our KAIZEN guidance activities.

(1) Basic Information

1	Name of your company	
2	Your name	
3	Title	
4	Responsibilities for KAIZEN activities in your company	

(2) Questions

(Q-1)	Do you understand necessity of KAIZEN? 1. not yet _____ 2. a little _____ 3. almost _____ 4. with confidence _____ 5. possible to teach others _____
(Q-2)	Are you self-motivated to conduct on KAIZEN activities in your company? 1. not yet _____ 2. ready to do myself _____ 3. ready to work with colleagues _____ 4. working with colleagues _____ 5. working with other departments _____
(Q-3)	Is 5S movement active in your company? 1. not yet _____ 2. all members understand 5S _____ 3. first 2S already in place _____ 4. first 3S already in place _____ 5. 5S sustained all motivated employees _____
(Q-4)	Do you understand importance of 5S? 1. not convinced _____ 2. yes a little fully _____ 3. already working willingly _____ 4. encouraging colleagues _____ 5. leading colleagues actively _____
(Q-5)	Is the operation standard established in your company? 1. not yet 2. yes partly 3. for most of operation

Source: JICA study team

Figure-24: KAIZEN Guidance Participant Questionnaire (partial image only)

4) 'Early Wins' Report

'Early Wins' Report is a brief analysis compiled based on reporting from the guidance-participating companies that addresses tangible benefits and improvements with the KAIZEN exercises during the guidance. The results are presented with numbers to the extent possible.

No.	Name of Company	Issues for Improvement		'Early Wins' during project implementation period
		Before KAIZEN	After KAIZEN	
1	A	Piles of non-core assets were stocked in anywhere in the company	The necessary and unnecessary assets are sorted out or sold, and those fit for re-use recycles as input for processing work	The company recovered additional revenue with an amount of Birr 118, 995.
2	B	Usable raw materials were disposed of with scraps	Utilizable inputs are identified and re-used again and those unwanted are sold out	The company recovered additional revenue with an amount of Birr 25, 500.
		Wastage of time for searching of manufacturing tools which were jumbled together	The disorderly stocked tools were set in order suitably	The company reduced the time loss for searching reduced by 50%
3	C	There were big down time in the production line	The production process is made to be uninterrupted	The company would be able to recover additional revenue with estimated amount of Birr 1.1 million per annum
		The mechanical work shop was in a messy condition. Tools were placed in a disorganized manner resulting wasting of	Waste of searching time for tools is reduced as a result of the tools arranged orderly	Time for bringing and searching is reduced by 76%, in monetary term of 6.74 cents per labour

Source: JICA study team

Figure-25: 'Early Wins' Report (partial image only)

The 'Early Wins' Report is compiled at the end of the guidance period as part of the final assessment of each company.

5) KAIZEN Guidance Company Assessment Report

KAIZEN Guidance Company Assessment Report provides a final assessment of the KAIZEN activities of the guidance-participating companies. The report is an overall assessment incorporating two elements: 1) the company's activities during the self-organising process with the help of the guidance, which have been assessed by the tools (a) through (d); and 2) the consultant's assessment of company's management factors and other issues in terms of their implications for the KAIZEN activities in the future. Thus the final assessment provides an overall assessment of the company's KAIZEN activities in terms of the current state and the future development. In other words, it assesses the prospect of each company with their self-disciplined management and self-initiated continuous efforts of company-wide KAIZEN dissemination, to be a company that continuously realises quality/productivity improvements through self-motivated KAIZEN activities. It is noted that, with respect to the management-related assessment in 2) above, the consultants are required of knowledge and capability for making judgement in terms of management situations including: organisational stability of the company such as whether key members of the company will continue to engage in KAIZEN activities over a long period; technical operation management issues such as stabilisation of material/product quality and management of facility maintenance; and supply-chain management such as channels and routes of sales as well as procurement. A sample format of the report is shown in the figure below.

KAIZEN Guidance Company Assessment Report
Evaluation of KAIZN Progress Level

Sector	Company Name	KAIZEN Progress Level	Potential Threats to KAIZEN Development	Evaluation Grade
Metal	A	They understood the purpose and execution process of 5S. They trained all employees before starting KAIZEN activities. They established the standard for "Sort" and "Set in Order" They understood the purpose and making process of Standard Work Sheet and they are studying effective layout utilizing Standard Working Sheet. They understood QCC activities and started concrete activities.	Nothing specially.	5
Metal	B	They understood the purpose and execution process of 5S. They need more effort, because some of the necessary standard for "Sort" and "Set in Order" are not established yet. They understood the purpose and making process of Standard Work Sheet and utilizing it to make effective layout. They must establish to verify KAIZEN effect comparing before and after. They understood QCC activities and started concrete activities.	The plant manager, who understood KAIZEN activities deeply, was retired. KAIZEN activity is operated continuously because some of KAIZEN core team members are 4-day seminar participant. We must watch the condition after coming new plant manager.	4

Legend: Evaluation Grades

Grade 5: High possibility to be a KAIZEN model company.
Grade 4: Good possibility to be a KAIZEN model company.
Grade 3: Some possibility to be a KAIZEN model company. Requires big effort to achieve it.
Grade 2: Low possibility to be a KAIZEN model company. Requires substantial corrective actions.
Grade 1: No possibility to be a KAIZEN model company.

* A KAIZEN model company means a company who continuously practices KAIZEN and as the result realises achievements that significantly excel other companies in terms of quality/productivity improvement.

Source: JICA study team

Figure-26: KAIZEN Guidance Company Assessment Report (sample format)

3.4 Pilot Project KAIZEN Guidance Implementation

3.4.1 Selection of 30 Companies

The first preparation task for the pilot project in Ethiopia was the selection of the 30 pilot companies to participate in the KAIZEN pilot project.

In order to select these 30 companies, the JICA study team and KU followed the four step process:
1) Set up criteria for selecting 60 candidates companies; 2) Do a preliminary survey on 60 candidate companies; 3) Determine weights on criteria; and 4) Select 30 companies in accordance with the criteria and weights.

1) Criteria for selecting 60 candidate companies (and subsequently narrowing down to 30 pilot companies) were determined by the JICA study team and KU.

The criteria are as follows:

(1) Proximity to Addis Ababa with distance less than 100 km from Addis Ababa
(2) Contribution towards export trade and/or import substitution
(3) Scale of capital
(4) Size of number of employees (The smaller the number of employees relative to capital, the more highly evaluated.)
(5) Diversity of products (within the 30 companies as a group)
(6) Avoidance of duplication with other donors
(7) Operational considerations for the pilot project, including:
  (i) Interest in and commitment to KAIZEN of the company management
  (ii) Characteristics of problems of the company
  (iii) Effectiveness of the pilot project in relation to company characteristics
(8) No direct and indirect links to military purposes

2) A preliminary survey (reconnaissance survey) with 60 candidate companies was conducted.
From the initial 'long list' of candidate companies, their information was collected from the government's sector institutes/departments and from Ethiopian Investment Agency, and a total of 63 candidate companies were selected for the reconnaissance survey based on the eight criteria. The survey was conducted by means of visiting all the companies from late November to early December 2009 with the objective of collecting basic information of each company and making a rapid assessment of preparedness for KAIZEN activities. The information that the project team was able to obtain through the survey also included some numerical management data of the companies. The data provided the team with a certain insight on management conditions of the manufacturing sector. A summary of the analysis of the data collected in this survey is included in the Appendix-4.

3) Weights on the selection criteria were determined

Table-15: Weights on Selection Criteria

No.	Selection Criteria	Weight (in %)
1	Close location to Addis Ababa	5
2	Contributing to export trade and/or import substitution	20
3	Capital	15
4	Number of employees	15
5	Diversity of products	10
6	Avoidance of duplication with other donors	5
7	Operational considerations for the pilot project	30

Source: JICA study team

4) Thirty companies were selected as participants of the pilot project (pilot companies).

In accordance with the selection criteria and their weights, the JICA study team and KU came to the consensus on the final 30 companies for the pilot project, which was confirmed in the minutes of meeting dated December 18, 2009.

Table-14: 30 Pilot Project Participating Companies Selected

No	Name of Company (Group / alphabetical order)	Sub-Sector	Group	Sector Total
1	Alem International Steels P.L.C	Metal	1st	**10**
2	Gelan Metal Industry P.L.C	Metal	1st	
3	Sintec Ethiopia plc	Metal	1st	
4	Techtra Engineering P.L.C	Metal	1st	
5	Walia Steel Industry P.L.C	Metal	1st	
6	Akaki Spare Part and Hand Tools Share Company	Metal	2nd	
7	Gatepro P.L.C	Metal	2nd	
8	Maru Metal Industry	Metal	2nd	
9	Mesfin Industerial Engineering P.L.C	Metal	2nd	
10	Nehemia Engineering	Metal	2nd	
11	Addis Mojo Edible Oil	Agro	1st	**6**
12	Sebeta Agro	Agro	1st	
13	Universal food	Agro	1st	
14	Kaliti Food S. Co.	Agro	2nd	
15	Nas Foods P.L.C.	Agro	2nd	
16	SEKA BUSINESS GROUP Pvt. Ltd. Co.	Agro	2nd	
17	Matador Addis Tyre Factory	Chemical	1st	**6**
18	Oromia Pipe Factory P.L.C	Chemical	1st	
19	Ethiopian Pulp & Paper SC	Chemical	1st	
20	East African Group(Ethopia) P.L.C	Chemical	2nd	
21	Zenith Gebs Eshet Eth. Ltd.	Chemical	2nd	
22	KADISCO Chemical Industries P.L.C	Chemical	2nd	
23	DIRE INDUSTRIES Pvt. Ltd. Co.	Leather	1st	**4**
24	Ramsay Shoes	Leather	1st	
25	Ethio Leather Industries PLC (ELICO)	Leather	2nd	
26	Wallia Industries LTD	Leather	2nd	
27	Ediget Yarn & Sewing Thread	Textile	1st	**4**
28	G Seven Trade & Industry P.L.C.	Textile	1st	
29	Adama Spinning Factory	Textile	2nd	
30	Ethio-Japan Synthetic Textile S.C.	Textile	2nd	
Total Number of Companies and Enterprises for Pilot Project				**30**

Source: JICA study team

The pilot companies were selected from five sub-sectors as recommended by KU, which reflected the Ethiopian government's sector priority in the development policy. The five sub-sectors are: (i) agro-processing; (ii) chemical; (iii) metal; (iv) leather; and (v) textile. As discussed in 2.2.2 in the last Chapter, the 5 sub-sectors account for a substantial majority portion of the manufacturing sector in terms of both production value and employment. Under the Ethiopian government policy priority, the agro-processing, chemical and metal sub-sectors are expected to substantial growth and contribution to import substitution. The leather and textile sub-sectors are expected to spearhead growth in exports in the manufacturing sector.

Among the initially selected companies, one company of the metal subsector (Nehemia Engineering) withdrew itself from the pilot project before the pilot project activities began. In replacement, addition of Ambassador Garment (textile subsector) was recommended by KU and included as the pilot project participant, which was subsequently confirmed in the minutes of meeting dated August 6, 2010.

The 30 pilot project companies were divided into two groups in accordance with the pilot project implementation schedule, in which the project activities were to be conducted in sequence with the first group activities in the first half of the Phase 2 and the second group in the latter half. Among the second group companies, two companies (Akaki Spare Parts and Ethio Leather) withdrew from the project before the second group project activities.

3.4.2 KAIZEN Guidance Implementation: January – September 2010 (First Group)

1) January-March 2010 implementation under the initial method

As explained in 3.2.3 (*Notes on initial approach and subsequent changes in the method of the pilot project*), the management diagnosis approach was employed as the method of the KAIZEN guidance in this initial period. The diagnosis and guidance programme starts with a management diagnosis followed by problem identification and problem-solving activities. The programme details are found in the Appendix 5. All the diagnosis and guidance activities are carried out through company visits.

2) Results of implementation of January –March 2010

(1) Company visits - results and assessments

Table-17: Company Visits – Dates and Number of Visits

Company name	Sector	First session	Second session	Third session	Fourth session	Fifth session
Addis Modjo Oil	Agro	Feb. 11	Feb. 18	Mar. 5	Mar. 11	
Sebata Agro	Agro	Feb. 9	Feb. 16	Feb. 22	Mar. 1	
Universal Food	Agro	Feb. 10	Feb. 17	Feb. 25	Mar. 8	
Ediget Yarn	Textile	Feb. 23	Mar. 3	Mar. 9		
G Seven Trade	Textile	Feb. 24	Mar. 4	Mar 10		
Dire Tannery	Leather	Jan. 27	Feb. 9	Feb. 17	Feb. 25	Mar. 3
Ramsay Shoe	Leather	Jan. 22	Feb. 2	Feb. 10	Feb. 19	Mar. 1
Matador Tire	Chemical	Van. 26	Feb. 3	Feb. 11	Feb. 19	Mar. 1
Oromia Pipe	Chemical	Jan. 27	Feb. 4	Feb. 12	Feb. 23	Mar. 5

Ethiopian Pulp	Chemical	Jan. 28	Feb. 5	Feb. 16	Feb. 24	Mar. 5
Alem Steels	Metal	Jan. 26	Feb. 2	Feb. 11	Feb. 19	Mar. 3
Gelan Metal	Metal	Jan. 20	Jan. 29	Feb. 9	Feb. 17	Feb. 25
Sintec Ethiopia	Metal	Jan. 27	Feb. 4	Feb. 12	Feb. 23	Mar. 3
Techtra Eng	Metal	Jan. 21	Feb. 5	Feb. 16	Mar. 1	Mar. 4
Walia Steel	Metal	Jan. 22	Jan. 28	Feb. 3	Feb. 10	Feb. 18

Source: JICA study team

Achievements in the initial activities run parallel to the issues from the management diagnosis. A number of management-related issues were recognised and reviewed by the project team members. They included a lack of managerial standards, insufficient cost data, a lack of business plans, and other managerial issues. These issues are discussed in detail in section 3.7 (Drawing Lessons Learnt from Pilot Project Implementation.) In the initial roll-out of the pilot project, it was recognised that the management diagnosis approach was not efficient as the method of the pilot project. First, management diagnosis encountered difficulty with the management environment referred to above and too much time was spent. Second, it was difficult to create a uniform strategy in the management diagnosis due to the very nature of that approach that is largely dependent on the client company's situation, which was exacerbated by the different consulting styles of the JICA study team members. This led the JICA study team to review the pilot project method in order to make it more effective in promoting KAIZEN and more feasible in terms of capacity development. As discussed in 3.2.3, the review resulted in a revised method based on the workplace KAIZEN approach. In the revised method, the guidance for the workplace KAIZEN started immediately. It was planned to take up the management issues at the end of the guidance activities after the workplace KAIZEN has been progressed.

(2) Company visits by KU

The KU members conducted follow-up visits at the companies of the first group pilot companies between the second study period in Ethiopia and the third study period in Ethiopia. For the most part, guidance related to QC Circle activities was provided.

Table-18: KU's Follow-up Company Visits

Company name	Sector	First session	Second session	Third session	Fourth session	Fifth session
Addis Modjo Oil	Agro	Mar. 24	Apr. 1	Apr. 15	Apr. 28	Jun. 9
Sebata Agro	Agro	Mar. 30	Apr. 12	Apr. 20	Apr. 28	Jun. 23
Universal Food	Agro	Mar. 25	Apr. 8	Apr. 14	Apr. 27	Jun. 15
Ediget Yarn	Textile	Mar. 24	Apr. 1	Apr. 13	Apr. 22	Jun. 9
G Seven Trade	Textile	Mar. 24	Apr. 1	Apr. 13	Apr. 22	Jun. 15
Dire Tannery	Leather	Mar. 24	Apr. 6	Apr. 13	Apr. 27	June 9
Ramsay Shoe	Leather	Mar. 24	Apr. 6	Apr. 13	Apr. 27	June 8
Matador Tire	Chemical	Mar. 26	Apr. 1	Apr. 14	Apr. 22	June 9
Oromia Pipe	Chemical	Mar. 26	Apr. 1	Apr. 14	Apr. 22	June 8
Ethiopian Pulp	Chemical	Mar. 31	Apr. 7	Apr. 21	Apr. 28	June 15

Source: JICA study team

3) Revised implementation plan

(1) Revised plan structure

As explained in detail in 3.2.1 (Defining KAIZEN Concepts), the revised method of the KAIZEN guidance was designed and introduced starting with the JICA team's third study period in Ethiopia. The major characteristics of the revised guidance were: (i) Assistance to companies with their self-organising process of KAIZEN with the objective of enabling them to do KAIZEN by themselves; (ii) Focus on workplace KAIZEN; and (iii) A uniform guidance programme.

In the course of the implementation in the revised plan, a group training approach (seminar format) was added to the company visits (on-site guidance). A four-day basic KAIZEN seminar was conducted during the early period of the guidance programme, in which managers/employees from all the first group pilot companies get together and learn the basic knowledge and concepts. As such a solid understanding of KAIZEN would be shared among all the participating companies. The learning of basic knowledge and concepts are followed by KAIZEN activities under on-site guidance through individual company visits. When KAIZEN activities have been embodied in standardisation including initial 5S activities to some extent, the guidance would move onto QCC exercise. This leads to foundation building for the companywide expansion of KAIZEN activities. In the last phase of the KAIZEN guidance, advice is provided regarding overall KAIZEN activities in the areas where the company needs supplementary guidance. Also, additional advice is to be provided concerning issues including management-related problems that have been found in the Guidance process.

The most significant characteristic of this implementation plan is that all the sector teams conduct the guidance based on the same method. With this uniform approach, an effective technical transfer to the KU members is possible.

- 1st to 4th sessions (seminar format):
  Explanations about KAIZEN outline and the promotion of understanding of standardisation (environment and operation)
- 5th to 7th sessions : KAIZEN activities at the factory
- 8th to 10th sessions : QCC activity development at the factory
- 11th to 12th sessions: Follow-ups activity at the factory

(2) Contents of KAIZEN guidance

(i) Four-day seminar

The four-day seminar is to promote the understanding of KAIZEN. The themes covered in the seminar's respective sessions are as follows:

(a) 1st session: Overview of KAIZEN (Conceptual Foundation)
(b) 2nd session: 5S – Standardisation of workplace environment
(c) 3rd session : Standard operations and time study

(d) 4th session : Elimination of MUDA and various aspects of KAIZEN

(ii) On-site guidance through company visits

After the overview of KAIZEN and its basic knowledge are understood, KAIZEN activities will be promoted on site at the model workplaces that each company has selected. This is done by individual company visits by the pilot project team. In this phase, 5S implementation is promoted and standardisation of operation is assisted. In addition, elimination of MUDA *is also* put into practice.

(a) Implementation of 5S – standardisation of workplace environment
(b) Standardisation of operation
(c) Practice of elimination of MUDA

(iii) QCC Understanding and Practice

In regards to QC Circle activities, QCC formation, QCC activities, the methods of organisational activities based on QC story, and QC presentation meetings will take place at company sites during actual visits. In general, QCC activities will be mastered in three sessions.

(a) QCC organisation and theme selection
(b) Implementation of QCC activities and creation of QC story
(c) Implementation of QCC presentation meetings and QCC activity evaluation

(iv) Follow-up

The last phase of the guidance programme is the follow-up visits. On the 11th session, professional advice is provided for the company-wide expansion of KAIZEN activities and issues related to management practice, such as business plans and cost analysis and the like, depending on the managerial status of the company. The 12th session will only be held if necessary.

(a) Discussion, reflection, and advice-giving concerning problems related to the improvement of quality and productivity
(b) Understanding of actual conditions of company management
(c) How to make progress for the future

4) KAIZEN Experience Workshop

Through the group-work exercise of KAIZEN activities, the effectiveness and importance of KAIZEN will be understood to a great extent. For this purpose, KAIZEN Experience Workshop was held targeting the 30 pilot companies. Four middle managers and supervisors from each company attended. The workshop, which was a two-day course, was held twice with each for 15 companies. The term “KAIZEN Experience” refers to the workshop method in which tools and components are prepared, operations are conducted in accordance with initially specified instructions, and required time measurement of the operation. Subsequently, operational processes will be modified with improvement devised by participants, and time study will be conducted, while improvement will be measured.

5) Results and reflection on implementation of July-September 2010 KAIZEN guidance

(1) Activity overview

In relation to training, the 1st to 4th seminars (July 13 through July 16) were implemented with all targeted companies gathering at the centre. Subsequent activities conducted during company visits are summarised in the table below.

Table-19: Activities of Company Visits from the 5th session to the 10th session

Session	Actions to be implemented
5th	Confirmation of actual conditions of 5S
6th	Creation of process layout charts (including personnel allocation)
7th	Implementation classified by MUDA group
8th	QCC organisation and theme selection
9th	Provision of explanations about QCC activities and creation of QC story
10th	Provision of explanations about QCC activities and QCC activity evaluation

Source: JICA study team

(2) Results and reflection on implementation

Dates for diagnosis and guidance through company visits are given in the following table. Information on three textile companies (Ambassador, Ethio-Japan, and Adama Spinning) that belong to the second group is included in the table.

Table-20: Schedule for Diagnosis and Guidance through Company Visits

Company name	Sector	Group	First visit	Second visit	Third visit	Fourth visit	Fifth visit	Sixth visit
Addis Modjo Oil	Agro	1st	7/22	7/29	8/5	8/12	8/19	9/1
Sebata Agro	Agro	1st	7/20	7/27	8/3	8/10	8/17	9/2
Universal Food	Agro	1st	7/21	7/28	8/4	8/11	8/18	8/31
Ediget Yarn	Textile	1st	7/21	7/29	8/6	8/17	9/1	
G Seven Trade	Textile	1st	7/20	7/28	7/5	8/13	8/31	
Adama Spinning	Textile	2nd	7/22	7/30	8/10	8/18	9/2	
Ambassador	Textile	2nd	7/27	8/2	8/4	8/12	8/20	9/6
Ethio-Japan	Textile	2nd	7/23	8/3	8/11	8/19	9/3	
Dire Tannery	Leather	1st	7/23	7/29	8/6	8/17	9/1	
Ramsay Shoe	Leather	1st	7/20	7/28	8/5	8/13	8/31	
Matador Tire	Chemical	1st	7/22	7/30	8/10	8/18	9/2	
Oromia Pipe	Chemical	1st	7/23	8/3	8/11	8/19	9/3	
Ethiopian Pulp	Chemical	1st	7/27	8/4	8/12	8/20	9/6	

Alem Steels	Metal	1st	7/20	8/28	8/5	8/13	8/31	
Gelan Metal	Metal	1st	7/21	8/29	8/6	8/17	9/2	9/7
Sintec Ethiopia	Metal	1st	7/22	8/30	8/11	8/18	9/1	
Techtra Eng	Metal	1st	7/23	8/3	8/10	8/20	9/3	
Walia Steel	Metal	1st	7/27	8/4	8/12	8/19	9/6	

Source: JICA study team

Upon reflection, the four-day seminar turned out to be effective in reflecting the good performance in the subsequent 5Ss activities, the standardisation of operation and elimination of waste exercises in 5-7th sessions generally. However, in the QC Circle exercises in 8-10th sessions, some visible variance emerged in the exercise activities of the companies. Particularly, it was discovered that the understanding of QC Circle activities among three textile companies was lower than the original first group. This was in part because the three textile companies did not have the opportunity of the KU members' visits that the original first group companies had during the period of the JICA team members' absence before July, in which the KU members mainly gave guidance concerning QC Circle activities. In consideration of these results, it was determined that the use of seminar was effective, and that addition of a mid-course seminar on the QC Circle skills would be effective to help the QC Circle exercises in the latter half of the guidance. In view of the second group activity period, which was more constrained than the first group, the additional group training for all companies at the same time also benefits company visits as it produces additional time.

3.4.3 KAIZEN Guidance Implementation: October – December 2010 (First and Second Groups)

1) Remaining activities for the first group companies

The first group's guidance activities that had not been conducted during JICA team's third study period (July – September) were implemented in this period, namely, the 8th, 9th and 10th sessions of the guidance (or 4th, 5th and 6th visits). Two companies in the pilot project group suspended participation in the pilot project KAIZEN activities due to their company circumstances that led to operation suspension of their factories.

2) Changes to the KAIZEN guidance programme for the second group

(1) Addition of seminar on QC Circle activities

In the second group of KAIZEN guidance programme, an additional seminar on QC Circle was set up for two days in the eighth and ninth sessions. The seminar addresses the overview of QCC and basic QCC methods and tools. The seminar sessions are followed by the tenth & eleventh on-site guidance sessions that practice model QCC exercises at their factories. These new arrangements were applicable also to three textile companies that started in July in the middle of the first group activities.

(2) Addition of follow-up day

This is regarding setting up a follow-up day on the 12th session for the second group instead of the 11th session, and focusing not only on company-wide dissemination but also on management problems.

The above two changes to the second group were to address the shorter time period available for this group. Due to the time constraints of the pilot project, the extra visits including the visits by KU during the first group could not be repeated for the second group. Also, because the basic knowledge on QC Circle can be better handled in a seminar format rather than company visits, one additional seminar on QCC was introduced. The two-day group training sessions allowed extra company visits for the pilot project team, in which the follow-up visits can be set up for all the companies in this group.

Table-21: KAIZEN Guidance Programme in October-December 2010

Session No.	(Visit No.)	Step (I – VI)	Session Agenda (Theme / Action)	Format	Date
1		I. Understanding Overview of KAIZEN	Overview of KAIZEN	Seminar	Oct. 19
2		II. Understanding Standardisation of Workplace & Operation	5S	Seminar	Oct. 20
3			Operation Standard & Time Study	Seminar	Oct. 21
4			Elimination of Waste (MUDA)	Seminar	Oct. 22
5	**(1st)**	III. Implementing KAIZEN Activities at the company	Organising 'Sort' activity	Visit (On-site at company)	Arranged individually
6	**(2nd)**		Understanding '3S' activities in Elimination of MUDA	Visit (On-site at company)	Arranged individually
7	**(3rd)**		Standardising Operations at Selected Workplace	Visit (On-site at company)	Arranged individually
8		IV. Understanding Overview of QCC	How to Organise QC Circles; What is QC Story?	Seminar	Nov. 17
9			What is QCC Presentation Meeting? How are QC 7 Tools utilised?	Seminar	Nov. 18
10	**(4th)**	V. Organising QCC Activities at the Company	Conducting QCC Meeting	Visit (On-site at company)	Arranged individually
11	**(5th)**		Conducting QCC Presentation Meeting	Visit (On-site at company)	Arranged individually
12	**(6th)**	VI. Preparatory work for Company-wide KAIZEN activities	▸Follow up better company management ▸Review K. activities & complement deficiency knowledge if necessary, etc.	Visit (On-site at company)	Arranged individually

Source: JICA study team

3) Results of implementation in October-December 2010

Results of company visits of the first group and the second group during JICA team's fourth study period in Ethiopia are shown in the Table-22. In principle, the activity contents of the columns with visit numbers (e.g., (3rd) (5th)) in the Table-22 match the session agenda with the same visit numbers in the Table3-21: KAIZEN guidance programme in October-December 2010. In the Table-22, companies with their visits starting from (1st) are the second group companies. The first group companies received in principle 4th, 5th and 6th visits, but in some cases more visits are listed where extra make-up visits were conducted.

Table-22: Company Visits in October–December 2010

Company name	Sector	Group	(1st) visit	(2nd) visit	(3rd) visit	(4th) visit	(5th) visit	(6th) visit
Addis Modjo Oil	Agro	1st				Nov. 3	Dec. 1	Dec 15
Sebata Agro	Agro	1st				Nov 4	Nov 24	
Universal Food	Agro	1st				Nov 4	Nov 11	Nov 25
NAS Foods	Agro	2nd	Oct 26	Nov 2	Nov 9	Nov 30	De 22	
Seka Foods	Agro	2nd	Oct 27	Nov 3	Nov 10	Dec 2	Dec 9	Dec 16
Kaliti Foods	Agro	2nd	Oct 29	Nov 5	Nov 12	Dec 3	Dec 10	Dec 23
G Seven Trade	Textile	1st		Oct 28	Nov 12	Nov 26	Nov 30	Dec 10
Adama Spinning	Textile	(2nd)				Nov 19	Dec 14	Dec 21
Ethio-Japan	Textile	(2nd)			Nov 23	Dec 1	Dec 8	Dec 17
Ambassador	Textile	(2nd)			Nov 25	Nov 30	Dec 7	Dec 23
Dire Tannery	Leather	1st			Oct 26	Nov 2	Nov 9	Dec 7
Walia Leather	Leather	2nd	Oct 27	Nov 3	Nov 10	Nov 26	Dec 9	Dec 20
Matador Tire	Chemical	1st				Nov 23	Dec 2	Dec 16
Oromia Pipe	Chemical	1st				Nov 24	Dec 7	
Ethiopian Pulp	Chemical	1st				Nov 19	Dec 3	Dec 17
Zenith Gebs	Chemical	2nd	Oct 28	Nov 4	Nov 11	Nov 30	Dec 10	Dec 21
East African	Chemical	2nd	Oct 29	Nov 5	Nov 12	Dec 1	Dec 14	Dec 22
Kadisco	Chemical	2nd	Oct 28	Nov 2	Nov 9	Nov 25	Dec 8	Dec 15
Gelan Metal	Metal	1st				Dec 2		
Sintec Ethiopia	Metal	1st				Dec 1	Dec 14	
Techtra Eng	Metal	1st				Nov 23	Dec 3	Dec 15
Walia Steel	Metal	1st				Nov 24		
Maru Metal	Metal	2nd	Oct 28	Nov 4	Nov 11	Nov 26	Dec 9	Dec 22
Mesfin	Metal	2nd	Oct 29	Nov 5	Nov 12	Nov 30	Dec 10	Dec 21
Gatepro	Metal	2nd	Oct 27	Nov 3	Nov 10	Nov 25	Dec 8	Dec16

Source: JICA study team

3.4.4 Training Programmes in Japan for Pilot Company Managers

JICA implemented two concurrent training programmes in Japan for this study in May 2009. A total of 30 managers from the 30 pilot companies participated in the two programmes: one held in the Chubu area and the other in the Osaka area. 20 managers from 20 companies attended the Chubu programme while 10 managers from 10 companies attended the Osaka programme, together with another 10 members from MoI (KU). The schedules of the two programmes are shown below.

The participants from the pilot companies had significant impact from this programme in Japan. Some

participants reported they gained great confidence in KAIZEN because they found the same tools and methods in the factory in Japan as being introduced at their factory in Ethiopia as part of their KAIZEN efforts. Others obtained a clear image of how they should promote the KAIZEN activities in their factory. It was observed that the KAIZEN core members who participated in the training became strong promoters of KAIZEN activities of the pilot project in many pilot companies. The results of the training in Japan for the pilot company managers helped the progress of the pilot project activities both in the first and second group companies.

Table-23: Training programmes in Nagoya and Osaka

Nagoya Programme Schedule

Date		Time	Activity Type	Contents	Lecturer or Visit Place
11-May	Tue			Arrival to Japan	
12-May	Wed	AM	Cordination	Orientation	(Kanie, Iwayama, Fukuyama)
		AM	Lecture	5S as a prerequisited of management	(Iwayama)
		PM	Visit	Koto Engraving Nagoya Corporation	Kto Engraving Nagoya Corp. (Kanie)
13-May	Thu	AM	Lecture	The view of Toyota Style Cost Reduction	(Kanie)
		PM	Lecture	What did we learn from our experience?	(Fukuyama)
		PM	Practice	Work session 1	(Fukuyama, Matsue)
14-May	Fri	AM	Practice	QC Story (Problem-Solving)	(Kanie)
		PM	Visit	Shikishima Baking Co. LTD	Shikishima Baking (Iwayama)
		PM	Visit	Owari Textile Technical Center	Owari Textile (Kanie)
15-May	Sat	AM	Practice	Securing Quality &	(Kanie)
		PM	Visit	Industrial Technology Memorial holeHall	(Kanie)
16-May	Sun				
17-May	Mon	AM	Lecture	QC Circle Presentation	(Kanie)
		PM	Practice	QC Circle Presentation Pructice	(Kanie)
		PM	Visit	Work session 2	(Kanie, Matsuzaki)
18-May	Tue	AM	Practice	Case study of Toyota Motor	(Kanie)
		PM	Lecture	Introduction to TPM	(Terashima)
19-May	Wed	AM	Lecture	KAIZEN Example	(Shirane)
		PM	Practice	Work session 3	(Kanie, Matsuzaki)
20-May	Thu	AM	Lecture	Policy Management in Quality Management	(Kanie)
		PM	Visit	Toyota Weaving Machine Company	Toyota Weaving Machine (Kanie)
21-May	Fri	AM	Practice	QC Presentation on Model Company	(Kanie, Fukuyama)
		PM	Cordination	Evaluation, Closing Ceremony and Information sharing	JICA
22-May	Sat			Leaving Japan	

Osak Programme Schedule

Date		Time	Activity Type	Contents	Lecturer or Visit Place
9-May	Sun			Arrival to Japan	
10-May	Mon	AM	Introduction	JICA Briefing	JICA
		14:00-17:00	Introduction	Program Orientation and making a target report	PREX
11-May	Tue	9:30-12:00	Discussion	Target setting and presentation	Summit Labo inc. Mr. Sugimura, Director
		13:30-17:00	Lecture	Kaizen Activity in Japan	Summit Labo inc. Mr. Sugimura, Director
12-May	Wed	9:30-11:30	Visit	5S and TQC: Implementataion and Effect	Nishigaki Socks inc.
		14:00-17:00	Visit	3S (Sort, Set in Order, Shine): Implementation and Effect\	Hiraoka Alloyed Metal inc.
13-May	Thu	10:00-12:00	Visit	5S Implementation in a food industry	Kyodo Food Center inc.
		14:30-17:00	Visit	Case study of a leather manufacturing industry	Kawano inc.
		10:00-17:00		Accompanied by:	Summit Labo inc. Mr. Sugimura, Director
14-May	Fri	10:00-15:00	Visit	QC Circle and Tools: Implementation and effects	Exedy inc.
15-May	Sat			Kansai Program	
16-May	Sun				
17-May	Mon	AM	Discussion	Review of learning	Summit Labo inc. Mr. Sugimura, Director
		13:00-17:00	Visit	Kaizen: Implementation and effects	Sumitomo Engineering Industry inc. Itami Plant
18-May	Tue	9:30-11:30	Visit	(For Kaizen Unit) Role and Dissemination of SME consultants scheme	SME Management Consultants association, Osaka Office
		14:00-16:00	Visit	(For Kaizen Unit) Method of SME support by a government organisation	Bureau of Economy and Industry in Kinki
		9:30-12:00	Visit	(For company trainees) Practical methods of Kaizen	Katagi Food inc.
		14:00-17:00	Visit	(For company trainees) Practical methods of Kaizen	Nakagawa Industry inc.
		9:30-17:00		Accompanied by:	Summit Labo inc. Mr. Sugimura, Director
19-May	Wed	10:00-12:00	Visit	Practical methods of Kaizen	To be decided (Chemical Industry)
		14:00-17:00	Discussion	Review of learning	Summit Labo inc. Mr. Sugimura, Director
20-May	Thu	9:30-12:00	Discussion	Information sharing of the trainees and making final reports	Summit Labo inc. Mr. Sugimura, Director
		13:30-17:30	Discussion	Final report presentation seminar	
21-May	Fri	10:00-12:00	Visit	Growth of companies and management philosophy	Konosuke Matsushita History Mesium
		PM	–	Evaluation, Closing Ceremony and Information sharing	JICA
22-May	Sat			Leaving Japan	

Source: JICA study team

After their return from Japan, the positive reviews of the training were shared among the participants and they led to the formation of an alumni forum of the Japan training of May 2010, which is a social gathering of the participants of these two training programmes. During the second round of such a meeting held on 9 August, members expressed their interest in continuing and even strengthening the social gathering in the future with certain set objectives such as:

1) To exchange views and experiences on KAIZEN activities;
2) To utilise this opportunity for training purposes;
3) To promote business linkage with foreign countries, especially with Japanese companies and;
4) To conduct for other purposes to be required.

From the perspective of KAIZEN's institutionalisation, such a forum for company owners and managers with shared interests in the KAIZEN practice is expected to become an important stakeholder inside the industry in terms of the dissemination of KAIZEN in Ethiopia in the future.

By using the opportunity of the alumni meeting, a questionnaire survey was conducted through the channel of KAIZEN Unit to each company. Out of the 30 pilot company alumni members, a total of 22 members fulfilled and sent back the questionnaire to KAIZEN Unit. The summary of the response is shown below with two angles of stratification: (1) the pilot project groups: the first group and the second group; and (2) the training programmes in Nagoya and Osaka.

Table-24: Summary of Questionnaire* Response from Participants in Training Programmes in Japan

	Category	Q-1			Q-2										Q-3
		(1)	(2)	(3)	GC	TQM	3S	5S	7M	SO	QCC	JIT	JDK	Lvl	
1	Total	2.7	2.6	2.3	40.9	13.6	31.8	40.9	22.7	13.6	31.8	9.1	4.5	4.5	2.2
2a	1st Group	3.2	3.1	2.7	46.2	7.7	46.2	15.4	15.4	7.7	30.8	7.7	7.7	7.7	2.4
2b	2nd Group	1.9	1.9	1.7	33.3	22.2	11.1	77.8	33.3	22.2	33.3	11.1	0.0	0.0	2.0
3a	Nagoya Team	3.4	3.3	2.5	33.3	13.3	26.7	40.0	20.0	13.3	26.7	6.7	0.0	0.0	2.5
3b	Osaka Team	1.1	1.1	1.9	57.1	14.3	42.9	42.9	28.6	14.3	42.9	14.3	14.3	14.3	1.7

Source: JICA study team

* Questionnaire was made up of the following questions:

Q-1: Did you find the training in Japan useful and meaningful? If yes, please explain to us how and what you would like to share with your colleagues or staff or employee about KAIZEN? (i) with manager? (ii) with supervisor or team leader? (iii) with co-workers?

Q-2: By reviewing KAIZEN working performance, what concepts or ideas do you think are important and adaptable in your company? (Please give us the number in a way that '1' is as the highest importance and adaptability followed by '2' as the second and the subsequent

numbers).

(GC: General Concept; TQM: Total Quality Management; 7M: Seven MUDAs; SO: Standard Operation; JIT: Just-In-Time; JDK:JIDOKA; and Lvl; Levelling)

Q-3: In adapting KAIZEN into your company based on what you have learned in Japan, will you give us your own assessment on the KAIZEN working performance in your company?

[Score: Q-1 and Q-3 are scored with five grades: 0,1,2,3 & 4 (Max score is 4). Responses to Q-2 are summarised above showing each of the multiple-choice subjects with the proportion of respondents who assigned highest importance/adaptability.]

Analysis: Below are some findings from the survey results that are worthy to note.

(a) Q1: Sharing ideas of KAIZEN with staff members after they returned to Ethiopia

The first group companies revealed more willingness to share with their company staff what they learned from the training programme in Japan. This is probably because the first group company participants understood the importance of sharing KAIZEN knowledge with a wider audience of managers and workers as a result of the pilot project guidance. The second group at the time did not receive the pilot project KAIZEN guidance.

In the similar way, the Nagoya participants intended to conduct wider information sharing than the Osaka participants. This may be due to the Nagoya programme's focus on group-work exercise.

(b) Q2: Important subjects

Important subjects can be divided into several categories.

1st category: General Concepts, 5S (3S), 7 MUDA and QCC

2nd category: TQM and Standard Operation

3rd category: Just-In-Time, JIDOKA and Levelling

Regarding 5S, there is contrast between the first and second groups. It is assumed that the first group already encountered challenges in implementing 5Ss (or 3Ss) including the needs for mind-set changes. The second group who did not directly receive the pilot project guidance may have responded with fresh eyes to a wider variety of interest in the subjects.

3.5 Assessment of Pilot Companies' Activities under KAIZEN Guidance and Capacity Building

In this section, assessment of the activity results of the pilot companies' self-organising process is presented using the five tools described in 3.3.2 (Monitoring and assessment method for KAIZNEN guidance: Table-12). Because of the withdrawal of the two companies explained in 3.4.1: 4), the assessment was done for the 28 pilot companies who participated in the KAIZEN guidance.

In addition, results of special surveys on the availability of the basic indicators for management of production are included in this section.

3.5.1 Assessment of Pilot Companies' Activities using Monitoring and Assessment Method for KAIZEN Guidance

1) Plant Assessment Radar Chart

Of the five monitoring tools for the KAIZEN guidance, the Plant Assessment Radar Chart is used to assess the company's standardisation of workplace environment and the operation in the middle of the guidance course to see if it is appropriate for the company to move onto the QC Circle activity guidance.

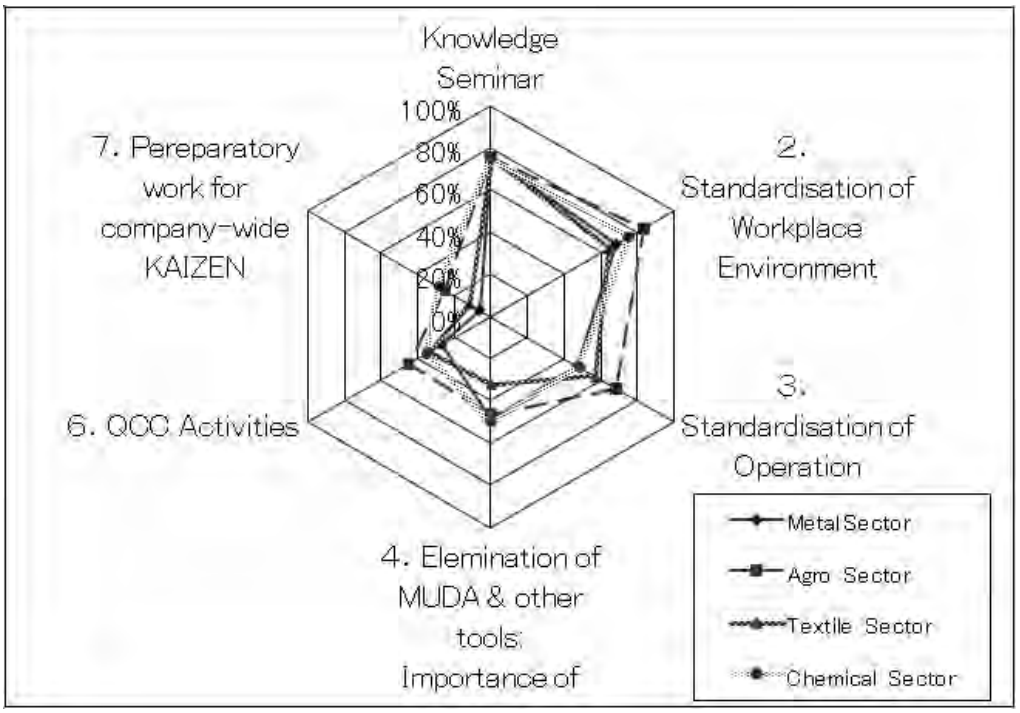
The Plant Assessment Radar Charts of the pilot companies are included in the *Photo Reports* (first group and second group) in the Appendix 6 and 7 in view of its mid-course use which makes understanding of the assessment easier when combined with the company's on-site pictures at the time of assessment. The assessment results were that all the participating pilot companies except one met the minimum level of standardisation conditions to move to the guidance of QC circle activities. The company's level of understanding of standardisation and elimination of MUDA is regarded as sufficient when all the assessment values along the spoke-like axes reach around 50% of the scale. In an ideal progress of the guidance it is expected that an unevenly-shaped or spiked star at the first assessment should expand to a larger and rounder shape of a circle.

As a result of the review of the pilot project's application of the Plant Assessment Radar Chart, it is recognised that the utilisation of the Chart has room for improvement going forward. In the pilot project, the same questions were used as the single assessment checklist was uniformly used for all the sub-sectors. Among the questions, however, there were some that were difficult to apply to all the sub-sectors. There are cases where clear answers are difficult in certain sub-sectors. For instance, in a process-oriented industry sub-sector, questions about in-process inventory between two processes may not have clear answers. Part of the questions does not fully satisfy the applicability as the checklist and requires adjustments for certain sector-specific situations. It is noted that such adjustments are recommended as application experiences accumulate in conducting the guidance going forward.

2) KAIZEN Guidance Qualitative Monitoring Report (QPM Report)

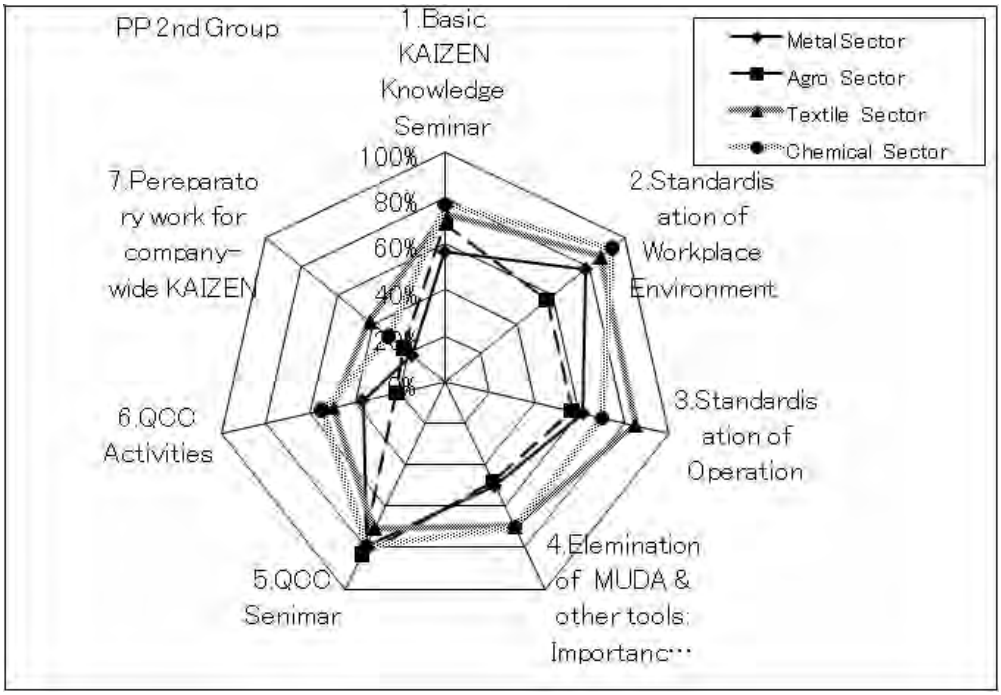
The second tool, KAIZEN Guidance Qualitative Performance Monitoring Report, or QPM for short, is to assess the companies' performances in all of the 6 steps of the guidance. Shown below are QPM Radar Charts that present a consolidated view of the assessment results of the two groups of the pilot companies. The first group's Radar Chart has only six spokes compared to the second group's seven, because the QCC seminar was not given in the first group guidance. The first group's chart shows that, in the order of the spoke number, the assessment values on the spokes get significantly smaller very quickly due to the slowness of their QCC activity progress. The second group's chart shows generally

larger assessment values than the first group, which is interpreted as the result of the uniform guidance programme applied more thoroughly to the second group.



Source: JICA study team

Figure-27: QPM Radar Chart of the First Group of Pilot Companies



Source: JICA study team

Figure-28: QPM Radar Chart of the Second Group of Pilot Companies

3) KAIZEN Guidance Participants' Questionnaire

The third tool, KAIZEN Guidance Participants' Questionnaire is the assessment based on the responses from the company side and therefore complements the QPM Report done on the consultant side. Conducted twice at the entry and exit points of the guidance using an identical set of questions, the participants' questionnaire attempts to gauge changes in the knowledge and attitude of the company's QCC leaders and mangers and their company's management direction.

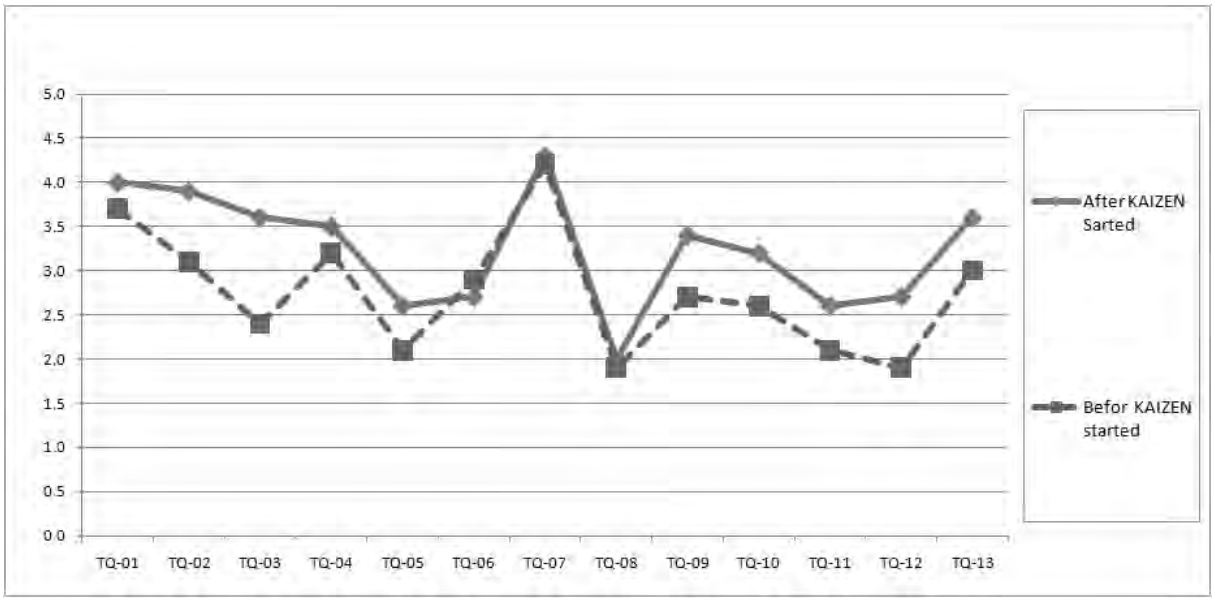
In the pilot project, the targets of the survey were the attendants of the KAIZEN basic knowledge seminar at the start of the guidance, and the same people were expected to be the exit survey targets. However, the exit survey could not be carried out to all the targeted participants as there were a number of personnel changes at the pilot companies. In response to this, the exit survey targets were expanded to include other guidance participants who were not the participants of the seminar portion.

The Table-25 and Figure-29 are based on the data set of the basic seminar attendants only in order to focus on the changes. The graph shows comparison of the entry responses and the exit responses. It shows that there was improvement from the entry to the exit in most areas, but not all of the questions. For the question 6 "Are you committed to using operation standard?" the respondents on average showed slight setback. This may be a reflection of insufficient understanding at the time of entry when the respondents attended the basic knowledge seminar. Without good understanding, they might be under the impression that dealing with operation standards was easy. Regarding the question 7 "Why is quality improvement important?", the respondents showed high understanding both at entry and at exit. On the other hand, the question 8 "How does your company assure quality?" the respondents were at low levels at both times. These two questions reveal that the people understand the importance of quality improvement but that actual work on quality management at the companies is not done sufficiently. The area that revealed most progress was 5S activity.

Table-25: Results of KAIZEN Guidance Participants' Questionnaire (The Second Group analysis with contents of questionnaire)

Question No	After KAIZEN Sarted	Befor KAIZEN started	Difference (After - Before)	Content of Questionnare
TQ-01	4.0	3.8	0.2	Do you understand neccessity of KAIZEN?
TQ-02	3.9	3.3	0.6	Are you self-motivated to conduct on KAIZEN activities in your company?
TQ-03	3.6	2.2	1.4	Is 5S movement active in your company?
TQ-04	3.5	3.3	0.2	Do you understand importance of 5S?
TQ-05	2.6	2.2	0.4	Is the operation standard established inyour company?
TQ-06	2.7	3.0	-0.3	Are you comitted to using operation standard?
TQ-07	4.3	4.3	0.0	Why is quality improvement important?
TQ-08	2.0	1.9	0.1	How does your company assure quality?
TQ-09	3.4	2.7	0.7	At which level of "elimination of MUDA" are you working?
TQ-10	3.2	2.7	0.5	Does your company encourage employees for MUDA elimination?
TQ-11	2.6	2.1	0.5	Are QC Circles organize in your company?
TQ-12	2.7	2.0	0.7	What kind of QCC program does your company have?
TQ-13	3.6	3.0	0.6	Are you motivated to organize your colleagues or managerial stuff into QCC activities?
Average	3.2	2.8	0.4	

Source: JICA study team



Source: JICA study team

Figure-29: "Before & After" Analysis of KAIZEN Guidance Participants' Questionnaire (The Second Group Pilot Companies)

4) 'Early Wins' Report

The fourth tool, the 'Early Wins' Report focuses on tangible benefits and improvements resulted from the KAIZEN exercises during the guidance. The pilot project's 'Early Wins' Reports are presented in

detail in Appendix 10 and 11. The report was compiled based on the reporting collected from 22 companies. The reported improvements are very significant. A summary on an aggregate basis is presented below.

● The average total monetary impact from the improvements reported is 500,000 Birr per company. The total monetary impact reported by a company includes non-recurring gains (e.g., scrap sale as a result of 5S) and recurring gains or savings that are annualised for this reporting. The reporting ranges from 10,000 Birr to 3,259,000 Birr. This means the reporting companies' differences in size and sector characteristics exist. Nonetheless, the average of 500,000 Birr is a large amount of money in relation to the size of the workplaces involved, each of which is typically staffed with 10 to 50 employees.

● Non-monetary measure of improvements include: (1) Search time reduction due to 5S is reported in terms of reduction ratio or in terms of time duration change in minutes. The reported reduction ratio on average is approximately 50% reduction and the search time duration change on average is from 13 minutes to 6 minutes; (2) Reduction of floor space required for the operation resulting from 5S is reported, with a typical reduction ratio around 50%. Averaging for this measure is difficult as some companies reported on a different basis such as free space available; (3) Some companies reported their defect ratio changes of the magnitude of 50% - 70% reduction; (4) Companies in some cases reported lead time reduction, but an aggregate analysis is not possible as lead tune is product-specific.

Overall, the reported 'Early Wins' are significant. However, it should be reminded once again that the early successes during the KAIZEN guidance is not an indicator of success of the guidance or success of the companies' self-organisation to start and sustain their own self-practicing of KAIZEN. Also, early successes in the initial KAIZEN exercises can typically pick "low-hanging fruits" with a reasonable harvest, which should provide a good exercise ground to get prepared to launch into the challenge of sustained practice of KAIZEN.

Lastly on the technical side of handling the information gathering from the companies, the method of collecting 'Early Wins' information should continue to be improved so that companies show their ways to measure the improvements, e.g., calculation or estimation based on their best effort and creative ideas.

Generally, companies in the self-organising process phase are not expected to be equipped for systematic numerical measurement based on standardised data collection as indicated in the survey result presented in the next sub-section. In general, companies at this phase should be encouraged with a few measures of the management's choice according to their needs. They may calculate or even estimate the size of the improvements using available information or a workaround for a lack of data. If the report can be shared among companies without names but with success stories and measurement methods, companies can learn other companies' examples to evaluate their own similar improvements and to size their impacts. Their attempt to measure should be the starting point for building capability for numerical data management that is required as they advance in their KAIZEN practice.

5) KAIZEN Guidance Company Assessment Report

Finally, the KAIZEN Guidance Company Assessment Report provides an overall assessment of the companies with respect to the assessment of the self-organising performances in the four tools ((1) Plant Assessment Radar Chart; (2) QPM Report; (3) KAIZEN Guidance Participants' Questionnaire; and (4) 'Early Wins' Report) and the consultants' assessment of management factors of the companies on a combined basis. The report attempts to go beyond what the companies have done in the self-organising process phase and make assessment about the companies' potential future development of their KAIZEN practice, or their potential to eventually become "KAIZEN model companies". The grading is given in this report in five levels.

Grade 5: High possibility to be a KAIZEN model company

Grade 4: Good possibility to be a KAIZEN model company

Grade 3: Some possibility to be a KAIZEN model company

Grade 2: Low possibility to be a KAIZEN model company

Grade 1: No possibility to be a KAIZEN model company

("KAIZEN model company" means a company who continuously practices KAIZEN and as the result realises achievements that significantly excel other companies in terms of quality / productivity improvement.)

The Table-26 is a summarised version of the report on the 28 pilot companies, followed by additional analyses to review the pilot project activities. The report in the original long form is included in the Appendix-13.

Table-26: Summary Overall Review of Pilot Companies

	Company	Group	Sub-Sector	Grade	Factors of Success (or Non-Success) in the progress of KAIZEN self-organisation and KAIZEN activities
1	0810129000514	2nd	Metal	5	Understood purpose and process of 5S well. Undertook and completed all employees' training before project activities. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheet, utilised it for layout study. Understood QCC activity well and started actual practice of QCC. KAIZEN activities developing after guidance ended.
2	0810113002704	2nd	Textile	5	Sophisticated factory of 4 years from founding. Good management-employee relations. Understood purpose and process of 5S well. Implemented training on KAIZEN of all employees before project activities. Established standards of "Sort" and "Set-in-order" and made Standard Operation Sheets. Started QCC activities. Completed preparation for company-wide dissemination of the activities.
3	0810110001614	1st	Agro-Processing	5	5-year-old young company with new facilities. Top management, especially DGM, is very active in introducing KAIZEN. Understood purpose and process of 5S well. Completed training of QCC members. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets and utilised them for layout study. Started QCC activities. Ready for company-wide dissemination of the activities

4	0810120001914	2nd	Chemical	5	Voluntary 3S activities started by workers of many workplaces other than the model workplaces. Made Standard Operation Sheets and started activities for improvement (elimination of MUDA). Started QCC activities. Undertook employee training of Amharic version. GM thinks KAIZEN's productivity improvement is significant enough to stop new investment.
5	0810120002214	2nd	Chemical	5	Three workplaces outside of the model workplaces started 3S and further expansion is planned. Company management (Core Team) made KAIZEN action plans, designated responsible personnel, implemented them including facility remodelling. Undertaking QCC activities with themes selected. Conducted employee training to front-line employees. Employee attitude is appreciative towards improving productivity and workload thanks to KAIZEN activities.
6	0810120001704	2nd	Chemical	5	Model workplace activities include: Core Team established four KAIZEN action plans, designated responsible personnel, got implementation under way. Core Team took up workload reduction theme for front-line workers. Made Standard Operation Sheets. Undertaking QCC activities actively. Employee training done in Amharic. Company management get proactively involved in KAIZEN activities.
7	0810129000614	2nd	Metal	4	Understood purpose and process of 5S well. Made Standard Operation Sheets and utilising them for layout study. Standard of "Sort" and "Set-in-order" partly unclear. Need to establish capability to verify KAIZEN effect comparing before and after such as time study. Started QCC activities. Plant manager who played core role in KAIZEN retired. Mutual understanding / communication of management - employees is understood.
8	0810125000914	1st	Metal	4	Understood purpose and process of 5S very well. Established good standards of "Sort" and "Set-in-order". Have not utilised Standard Operation Sheets fully yet, including work control. Have not started QCC activities. Standardisation of operation remains on agenda.
9	0810113003014	1st	Textile	4	Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets. Started QCC activities and readied for company-wide expansion. Company has long history. Maintenance of old facilities is their challenge. Activities under a good plan with concrete goals are expected.
10	0810110001114	1st	Agro-Processing	4	Old company with government-owned status converted to private. KAIZEN manager is very active. Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets and utilised them for layout study. Started QCC activities. Already expanded the activities to another factory (Mojo factory).
11	0810125000314	2nd	Metal	3	Understood purpose and process of 5S. Completed basic employee training that was needed on basic KAIEN knowledge. Standards for "Sort" and "Set-in-order" need to be established clearly. Standard Operation Sheets are not utilised yet. Started QCC activity. Management needs better policy / attitude towards trusting employees, listening employee opinions, encouraging employee participation in KAIZEN.

12	0810143000814	1st	Metal	3	Understood purpose and process of 5S. Despite understanding of purpose of maintenance of good workplace environment, but it is not maintained. Maintenance of 5S needs to continue to be prioritised. Management understood importance of mutual communication with employees. Unclear about process of creating Standard Operation Sheets yet. QCC was started but stopped due to production priority.
13	0810113002904	2nd	Textile	3	Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets. Trained all QCC members and started QCC activities. GM changed in the middle of KAIZEN guidance period. All Core Team members left the factory. New members restarted from scratch and recovered fast during the period of the last 4 visits of guidance. Completed preparation for company-wide dissemination of the activities.
14	0810110001414	1st	Agro-Processing	3	Being a maker of processed milk, freshness and cleanliness and hygiene control are crucial. Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets and utilised them for layout study. Problem of lack of plant management proactive involvement was remedied by GM. Started QCC activities. QCC members are motivated and active. Completed preparation for company-wide dissemination of the activities.
15	0810110001414	2nd	Chemical	3	In addition to model workplaces, started 3S at five other workplaces. Created further company-wide dissemination plan to be implemented step by step. Made Standard Operation Sheets and then exercised elimination of MUDA. Subsequently 3S activities got stalled right after guidance period ended. KAIZEN activities by QCC members are continuing and appear company is once again on the way to sustained KAIZEN activities. Owner is positive towards KAIZEN.
16	0810117001804	1st	Chemical	3	QCC leader of model workplace is confident about KAIZEN activities. Core team disseminated 3S activities to other work places. However, core team members' attendance became extremely poor in the guidance meetings at the last 3 guidance visits. Company-wide dissemination is expected to be challenged.
17	0810122002114	1st	Chemical	3	KAIZEN core team members did not understand KAIZEN's basic concepts such as 3S and standardisation. 3S implementation at model workplaces was not good. KU provided special KAIZEN group training to the employees at the request of the management. Further training and guidance, if provided, would make it possible for the company to get on track towards a KAIZEN company.
18	0810115002314	1st	Leather	3	Understand KAIZEN concepts. Workers' attitude in model workplace changed to positive through the activities. They worked to make Standard Operation Sheets and Standard Operation Distribution Sheet, but have not utilised enough.
19	0810124001004	1st	Metal	2	Understood initially understood purpose and process of 5S, but activities stopped. Management lost quality-conscious mind-set. KAIZEN activity results turned back to conditions worse than before. Standard Operation Sheets not made. Management does not change policy of priority on production of volume over quality.

20	0810124000214	1st	Metal	2	KAIZEN activities stopped after certain progress was made in understanding 5S's purpose and process, but Standard Operation Sheets have not been made. This was caused by company's operation ordered to be suspended in relation to imported products quality issue. No further KAIZEN activities expected currently.
21	0810110001514	2nd	Agro-Processing	2	Company is a division of a large business group. Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets and utilised them for layout study. QCC members are proactive. However, company has production planning problems, has experienced suspension of factory operation for about a month.
22	0810110001304	2nd	Agro-Processing	2	Understood purpose and process of 5S. Established standards of "Sort" and "Set-in-order". Made Standard Operation Sheets and utilised them for layout study. Trained QCC members before project activities. Management and all the employees together did cleaning of the factory. Good Management - employee relations. However, company has severe challenge in managing cash flows to procure materials. Recently experienced factory closure for about a month.
23	0810113003114	2nd	Textile	2	Garment sub-sector with labour-intensive operations. Understood purpose and process of 5S. Established standards for "Sort" and "Set-in-order". Made Standard Operation Sheets. Started QCC activities. After company re-assigned KAIZEN core members away to work on ISO-QMS which company decided to introduce, KAIZEN activities slowed down.
24	0810122002014	1st	Chemical	2	Implemented 3S at model workplace. But 3S activities stalled. Understanding of its basic standardisation concept appears weak. Planned company-wide expansion of 3S but not executed at all. Being a former joint venture with a Japanese company, managers have KAIZEN understanding but appear to lack implementing capacity.
25	0810124000414	1st	Metal	1	Understood purpose and process of 5S. Employees appreciative of improvement of work environment. However, management transferred employees to meet production demands away from KAIZEN activity. KAIZEN team now lacks management support, activities stalled, resumption of KAIZEN activities difficult to expect.
26	0810113002814	1st	Textile	1	Old company with continuing cash flow problem. Because of the financial problem, GM could not attend KAIZEN guidance meetings. Factory appears not operating. The meetings were repeatedly postponed. Visits to workplace were virtually refused. No meaningful KAIZEN activities took place. Therefore, guidance programme was terminated.
27	0810110001214	2nd	Agro-Processing	1	Company was government-owned but privatised in June 2010. Due to still on-going privatisation processes, KAIZEN guidance meetings often cancelled, and KAIZEN activities could not start for long time.
28	0810115002514	1st	Leather	1	Company concurrently involved in 2 quality/productivity improvement assistance programmes: KAIZEN and Benchmarking. They subsequently chose Benchmarking as their sole assistance, and stopped KAIZEN activity.

Source: JICA study team

The assessment grades of the above report are summarised by sub-sector in the Table-27. The chemical sub-sector's grade distribution is skewed to the higher end. The other sub-sectors are more or less evenly distributed. At the total level, although the 6 occurrences at grade 5 makes making the curve uneven on the high side, the distribution overall looks mounded shape.

Table-27: Grade Point Distribution by Sub-Sector

Grade / Sub-Sector		Grade 1	2	3	4	5	Total No. of Companies
Sub-Sector	Metal	1	2	2	2	1	8
	Textile	1	1	1	1	1	5
	Agro-Processing	1	2	1	1	1	6
	Chemical		1	2		3	6
	Leather	1		2			3
Total occurrences		4	6	8	4	6	28

Source: JICA study team

In the Summary Overall Review of Pilot Companies presented above, certain keywords relative to assessment grades can be extracted from the descriptions in the column of *Factors of Success (or Non-Success)*. The extracted keywords are analysed in the Table-28. As the table reveals, KAIZEN activity issue-related keywords are found in the grades from 5 to 3, but they don't differ very much between grades. On the other hand, management issue-related keywords show marked differences between grades. In grades 5 and 4, the management issue-related keywords are positive, while in grades 3 and below the keywords are negative. On the whole, keywords that impact the grade are management issue related. The most prominent keywords are as follows:

<Positive keywords (Occurring in grades 5 and 4)>

(1) Top management's positive statements (Positive towards KAIZEN; KAIZEN improvements significant enough to suspend new investment; etc.)
(2) Good management-employee relations (Importance of mutual communication with employees; Employee training for all employees; etc.)

<Negative keywords (Occurring in grades 3 – 1)>

(3) Personnel changes / transfers (GM changed; KAIZEN core manger transferred; etc.)
(4) Management prioritising production volume and not quality

(5) Suspension of operation (Production planning problem; Cash flow problem; Quality problem)

Table-28: Keywords of Assessment Comments by Grade from 'Summary Overall Review of Pilot Companies'

	KAIZEN Activity-related issues		Management-related issues	
Grade	Model Workplace Activities	General Activities (Results and Direction)	Organisation Management	Management Direction
5	・Understood purpose and process if 5S ・Established standards of "Sort" and "Set-in-order". ・Made Standard Operation Sheets ・Layout study done	・Completed employee training of basic KAIZEN knowledge ・Workload reduced	・Started QCC activities. ・Completed preparation for KAIZEN company-wide dissemination	・Top management very active in promoting KAIZEN ・Good management – employee relations. ・KAIZEN's improvement is significant enough to make new investment unnecessary. ・KAIZEN activities developing after guidance ended
4	・Understood purpose and process if 5S ・Established standards of "Sort" and "Set-in-order". ・Made Standard Operation Sheets	・Activities under a good plan with concrete goals is expected ・Maintenance of facilities is a challenge	・Completed preparation for company-wide dissemination of the activities ・Started QCC activities ・Plant manager who played core role in KAIZEN retired.	・KAIZEN manager is very active. ・Mutual understanding / communication of management - employees is understood
3	・Understood purpose and process if 5S ・Standards of "Sort" and "Set-in-order" partly not clear. ・Standard Operation Sheets not yet utilised	・Employee training on KAIZEN basic knowledge that was needed ・Understanding of good work environment not maintained. ・Maintenance of 5S needs to be prioritised	・Started QCC activities. ・QCC was started but stopped. ・GM changed in the middle of KAIZEN guidance period.	・Management needs better policy / attitude towards trusting employees, listening employee opinions, encouraging employee participation in KAIZEN.
2	・Understanding of purpose and process of 5S not clearly understood. 5S activities stalled. ・Standard Operation Sheets not made.	・	・KAIZEN activity results turned back to conditions worse than before. ・Management lost quality-conscious mind-set ・Company re-assigned KAIZEN core members away. ・Understanding of basic 3S concepts appears weak.	・Management does not change policy of priority on production of volume over quality. ・Operation suspended in relation to imported products quality issue. ・Production planning problems, suspension of factory operation for about a month. ・Severe challenge in managing cash flows to procure materials. Factory closure for about a month.

1	・Understood purpose and process of 5S. ・Employees appreciative of improved work environment.		・Employees transferred.	・KAIZEN team now lacks management support due to production volume focus. ・. Because of financial problem … meetings repeatedly postponed, visits to workplace virtually refused. ・. Due to on-going privatisation processes, KAIZEN meetings cancelled.

Source: JICA study team

In conclusion of KAIZEN Guidance Company Assessment:

1) Of the 28 companies who participated in the pilot project KAIZEN guidance, six companies are rated grade 5 and four companies are rated grade 4. These ten companies have high or good possibility to be KAIZEN model companies, i.e., high or good possibility to become capable of continuously practicing KAIZEN with a result of realising achievements that significantly excel other companies in terms of quality / productivity improvement. These 10 companies can now graduate from the self-organising process to proceed to self-practicing of KAIZEN. They are expected to start KAIZEN to accumulate tangible improvements in quality and productivity on a continual basis

The key success factors identified with respect to companies graded at 5 and 4 are: (1) management's positive attitude towards KAIZEN that indicates management's commitment; and (2) good management-employee relationship revealed in management's appreciation of communication with employees and employee training, which indicate trust and empowerment being ingrained in the management practice. In addition to these, another important factor for success is the absence of disruptive management conditions, such as shortage of operating capital or difficulty in procurement of materials, which would cause suspension of ordinary company operation.

2) In the middle of the grading spectrum are eight companies graded at 3, i.e., some possibility to become capable of continuously practice KAIZEN. These 8 companies have potential to be a successful KAIZEN-practicing company but they will need significant efforts to reach that status or additional outside guidance and assistance. In one example, three months after the pilot project ended, the JICA study team learned that one of the 3-graded companies resumed KAIZEN activities with good management support after the company restarted normal operation following resolution of their cash shortage and procurement problems. The company was graded at 3 based on their inability to practice KAIZEN activities due to the prolonged operation suspension, but after the problem resolution the company appears to be back on track in KAIZEN activities. They could be graded at 4 or even better, should the assessment have been done at this time.

3) On the other hand, six companies are rated grade 2 and three companies are rated grade 1. The factors behind them are: (1) lack of management commitment to KAIZEN as revealed by personnel

changes that neglect the KAIZEN efforts or by management priority on production volume and inattention to quality; and (2) management problems that jeopardise the company's operation as a viable going-concern. Many of the companies in this grading group lack the basic management capabilities in the area of Fundamental Enablers on Recurrent KAIZEN Agenda (see 3.2.1.).

4) As explained in 3.3.4: 5), these grade assessments in the KAIZEN Guidance Company Assessment Report were the result of the combination of (1) the assessments of the self-organising process performances by the four monitoring and assessment tools (Plant Assessment Radar Chart; QPM Report; KAIZEN Guidance Participants' Questionnaire; and 'Early Wins' Report) and (2) the additional assessment of management factors. However, caution is warranted in the use of the assessment results, due to limitations in the management factors (2), which are assessed at the end of the self-organising process. The management factors must include future capacity development in the area of Fundamental Enablers on Recurrent KAIZEN Agenda, assessment of which is judgment call that is an art rather than science.

3.5.2 Survey Results of Basic Indicators of Management of Production

The basic indicators of management of production are, as presented in 3.3.3 earlier in this Chapter, a set of tools that should be utilised by manufacturing companies that are in the phase of self-practicing of KAIZEN (3.3.3 Table-13). They consist of indicators of (1) quality, (2) cost, (3) delivery, (4) safety, (5) productivity, and (6) morale, as well as general management indicators that are made up of gross profit ratio and a few other general management indices. The morale indicators (6) include the manager questionnaire and the employee questionnaire to be conducted within a company.

Although the pilot project's KAIZEN guidance was to assist the companies' self-organising process, the pilot project team conducted a study survey on the use of the basic indicators of management of production at the end of the KAIZEN guidance period. The survey was not part of the assessment of the pilot companies, but it was to make quick review of the availability of the indicators and the feasibility of utilising them at the companies when they progress to the KAIZEN self-practicing phase. The survey was conducted in two parts, the numerical indicator survey and the morale survey. The survey results are summarised below.

The survey was carried out with the questionnaires distributed to the pilot companies in late December 2010 and the responses were collected in January – February 2011. However, the survey process was faced with some difficulties. First, not all the pilot companies could not be included as the survey target, since the questionnaire delivery and collection with many of the first group pilot companies was not easy due to limited opportunities of visits. Secondly, although companies who are proactive in the KAIZEN activities tended to respond quickly, for the majority of the companies KU had to push hard to collect the responses and could not collect responses from some of them.

1) Survey on Numerical Indicators

The questionnaire on the numerical indicators, as shown below, asked the companies whether they collect the indicators such as defect ratio, cost by product per unit and so on that constitute the set of numerical indicators recommended for companies in the phase of self-practicing of KAIZEN. The questionnaire also asked the frequency of the indicator collection, and further asked to provide recent sample data. It asked also to provide comments including alternative indicators the companies may be using in place of the ones listed.

The responses were very limited. Of the companies who received the questionnaire, only 7 companies responded. The observations that can be made from the result are:

- Of the items in the questionnaire, only about half of the items were answered by the 7 respondents.
- Companies who indicated that they update the indicators regularly are half of those who answered. Few indicated that they capture all the indicators.

It is possible that some companies did not answer due to their concern about the disclosure of their company data to an outside party. However, the fact that not many companies responded to the questionnaire combined with the limited scope of indicators that are being regularly captured by the respondents suggests it is probable that in many companies those indicators are not actively utilised at present and that in many cases the indicators are not captured regularly.

Table-29: Questionnaire on Numerical Indicators

	Indicator	**Question 1** Do you collect the indicators listed below on a regular basis?		**Question 2** If 'Yes', how frequently do you record?	**Question 3** If 'Yes', provide us with your company's recent data.
		Formula	(Circle the number.)		
Q1	Defect Rate	(Quantity of defects) / (Quantity of product produced)	1. Yes, for all main products. 2. Yes, but for limited few products only. 3. No, we don't maintain such records.		If the answer to Question 1 is 'Yes' (1 or 2) please provide us with recent data (also indicating as-of date) on separate sheet(s) as attachment.
	or Yield	(Quantity of good products produced) / (Quantity of material input)			
C1	Product Cost (per unit product)	(Direct material cost + Direct labour cost + Manufacturing overhead[as applied to product line]) / quantity of units produced	1. Yes for all main products. 2. Yes, but for limited few products only. 3. Not at the moment.		
C2	Gross Profit Ratio by product	(Sales – Cost of Goods Sold) / (Sales) [for the product]	1. Yes, for all main products & total company. 2. Yes, but for limited few products only & total company. 3. Only for total company is available.		
D1	Delivery schedule non-adherence count	Number of occurrence of delivery schedule non-adherence	1. Yes, we maintain DS Non-Adherence records for the company with associated information of reason/background. 2. Yes, but without associated information.		

			3. No, we don't maintain such records.		
S1	Labour injury count	Number of labour injuries	1. Yes, we maintain labour injury incident records with associated information. 2. Yes, but without associated information. 3. No, we don't maintain such records.		
P1	Machine Utilisation Rate	(Actual time machine utilised) / (Planned machine utilisation time)	1. Yes, we maintain machine utilisation rate records for main machines with associated information of time & duration and reason of stoppage. 2. Yes, we maintain such records without associated information. 3. No, we don't maintain such records.		
P2	Production Capacity	Quantity of products produced per unit time	1. Yes, for all of main product lines. 2. Yes, but for limited few product lines only. 3. No, we don't maintain such records.		
P3	In-process Inventory [Or, Turn-over of In-process Inventory]	Quantity of total In-process inventory at each process [(Quantity of total In-process inventory of a process) / (Monthly total quantity of usage of user processes*)]	1. Yes, we maintain such records for all main processes of the company. 2. Yes, but for limited few processes only. 3. No, we don't maintain such records.		
M1	Absentee Ratio	(Number of absent employees) / (Total number of employees)	1. Yes, we maintain such records for all departments / workplaces. 2. Yes, but for limited few departments or workplaces only. 3. No, we don't maintain such records.		

Question 4:
Write any comments in the space below, including any other indicators you use instead of the above listed.

Basic General Management Indicators for Manufacturing Companies		**Question 5** Provide us with your company's recent numbers. Formula	Recent Number	Period
Mgmnt Statistics	Sales Revenue			
	Gross Profit	Sales – Cost of Goods Sold		
	Number of Employees			
	Capital (Stockholders' Equity)			
Mgmnt Indices	Gross Profit Ratio [Total company]	(Sales – Cost of Goods Sold) / Sales		
	Sales per head	Sales / Number of employees		
	Gross Profit per head	Gross Profit / Number of employees		

	Capital per head	Capital / Number of employees		
	Capital Turnover	Sales / Capital		

Source: JICA study team

In conclusion of the numerical indicator survey results, it can be interpreted that not many companies are systematically capturing the data that are valuable for company management and for enabling KAIZEN activities. This may have implications for the future plans with regards to KAIZEN's nation-wide dissemination and development in Ethiopia, particularly in relation to the cost accounting and data management that this Study has identified as one of KAIZEN's *Fundamental Enablers*. This subject is discussed in 3.7 (Lessons Learnt from Pilot Project).

Related to the numerical management data, the following is an additional discussion on an example of industry data that individual companies can make use of, if such publicly accumulated data are made available to public. The Table-30 is a set of management indicators taken from the data of the Study's reconnaissance survey on 60 companies conducted in preparation for the selection of the pilot companies in November – December 2009. The table shows sector averages of the indicators calculated from the data of individual companies collected in the 60-company survey.

Table-30: Example of Basic Management Indicators (Sub-Sector Averages) from the 60-company survey in 2009

	Management data / indicators	Metal	Textile	Agro-Processing	Chemical	Leather
1	Sales Revenue	N.A..	N.A.	N.A.	N.A.	N.A.
2	Gross Profit	N.A.	N.A.	N.A.	N.A.	N.A.
3	Number of Employees	N.A.	N.A.	N.A.	N.A.	N.A.
4	Capital (Shareholders' Equity)	N.A.	N.A.	N.A.	N.A.	N.A.
5	Gross Profit Ratio (Total Company)	20.2%	21.6%	12.1%	22.2%	11.8%
6	Sales per head	346,355	73,810	203,607	288,165	257,585
7	Gross Profit per head	48,200	17,596	27,842	55,292	29,791
8	Capital per head	413,165	259,828	144,329	172,606	49,740
9	Capital Turnover	2.1	0.6	2.6	2.5	92

(N.A.= Not applicable)

Source: JICA study team

If a company of one of the sub-sectors in the table calculates and monitors the indicators themselves, comparing their numbers with the sector average numbers will allow the company management to see where their company stands relative to the average of the sector peers. From that observation, the management of the company can find clues to potential improvement agenda to pursue in their KAIZEN activities. For instance, let us suppose a textile company's gross profit ratio is 12.8%, sales

per head 171,598, gross profit per head 22,007, capital per head 595,084, and capital turnover 0.3. In this example, the 12.8% gross profit ratio is only about a half of the sector average of 21.6%, which leads to a judgment that the company's profit margin should have room to be improved. Then, the company manger may look into the other indicators to see where improvements should be made. The company's sales per head of 171,598 is 2.3 times the sector average and their sales volume has no problem. Their gross profit per head of 22,007 is 1.3 times relative to sector average, which means profit ratio is low relative to sales. Capital per head of 595,048 is 2.3 times the sector average, a high level in terms of the sector average similar to the sales per head. Looking at capital turnover, the company's number of 0.3 is a half of the sector average of 0.6, which means capital invested is not fully utilised. In this company, the management should look into productivity improvement thorough lifting its facility utilisation rate. Company managers could analyse their management indicators in comparison to the sector averages and find weaknesses which could be their management focus to improve the company's operation. It would be very much beneficial for future KAIZEN development in Ethiopia, if an appropriate public entity can collect those management data from individual manufacturing companies on an on-going basis, create and update indicators of sub-sector averages, and make them available to public. The indicators of subsector to be shared publicly will need to be updated regularly such as once a year or every three years.

2) Morale survey

The morale survey was conducted in the pilot project in conjunction with the numerical indicator survey. The morale survey as management indicator is part of the basic indicators for management of production, and should be conducted by the companies. The survey done in the pilot project was an experimental survey to see if a morale survey is feasible and useful in the Ethiopian manufacturing companies. The survey was done with two separate questionnaires, one for mangers and the other for employees as recommended in 3.3.3 (Table-13). The two questionnaires are included in the Appendix-15. The target managers and employees for the purpose of this survey were limited to those engaged in the KAIZEN guidance activities, which means about 5 persons each for managers and employees respectively were asked to answer the questionnaire from each company.

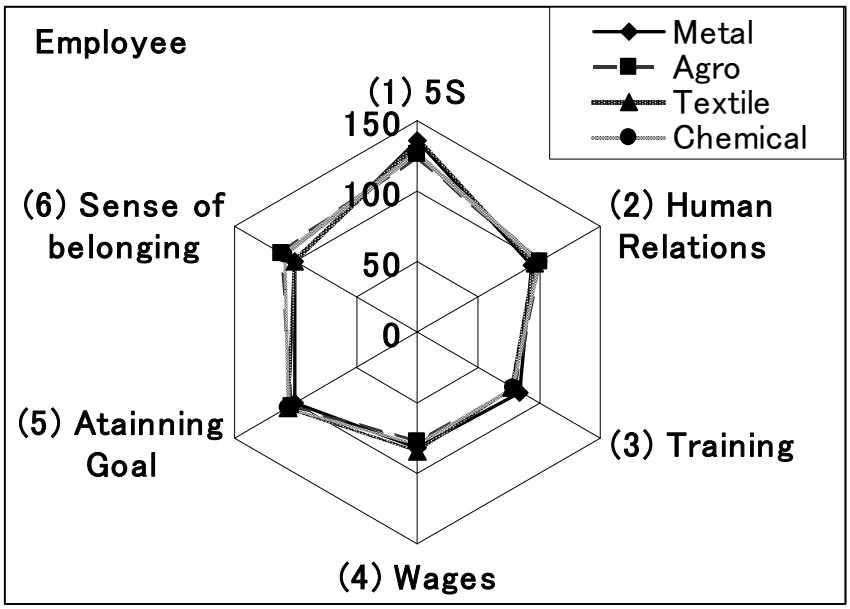
Responses from the pilot companies were reasonably good, compared to the numerical indicator survey. Of the 22 companies who received the questionnaires, 16 companies returned their managers' and employees' responses. The responses both in terms of volume and quality were meaningful and worthwhile doing analysis of the contents.

In conclusion of the morale survey, based on the response results of the companies, it is expected that a morale survey such as the trial survey can be used by the companies that practice KAIZEN as a tool to monitor their employees including mangers. KAIZEN plays a significant role in improving morale of employees, and the improved morale in the workplaces in turn makes it possible for KAIZEN to sustain and develop further. As discussed in 3.3.3, it is recommended that a morale survey should be conducted by KAIZEN-practicing companies periodically such as annually or once in two years.

The analysis was done on the responses from the 16 companies. The analyses on an aggregate basis is presented below.

●Analysis method

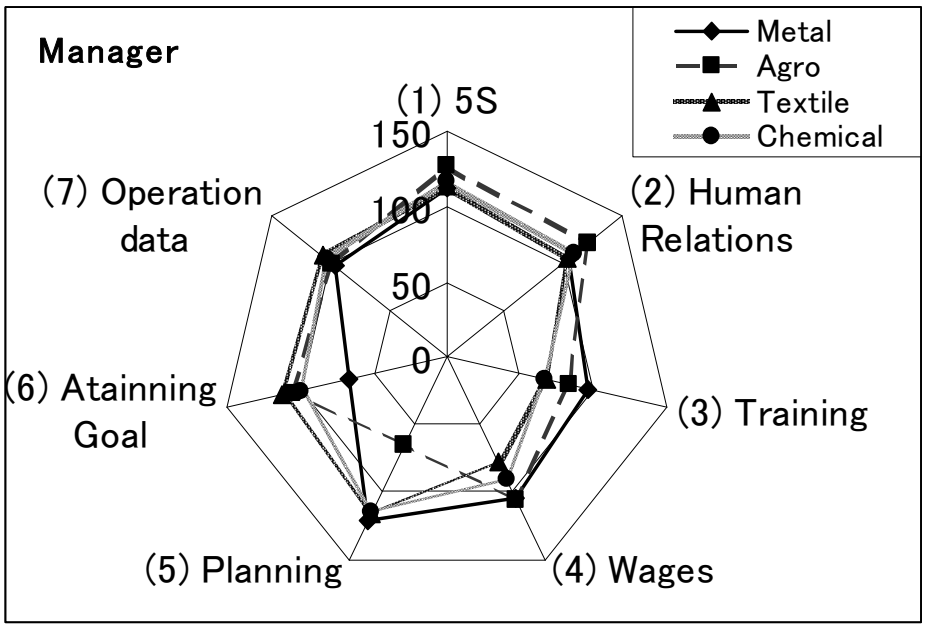
Each of the questions (17 questions for managers, 16 questions for employees) has five multiple choice answers 1 – 5. For instance, for a question "How do you feel about doing your work in your current job?", 5 multiple choices range from the negative 1 "Not interested in my work" to the most positive 5 "I enjoy doing my work and I am proud of my work". Other choices 2,3, and 4 are in between and progressively more positive in that order. The analysis presented below attempts to capture the degree of positiveness in 7 subject areas for managers and in 6 subject areas for employees and show them in a Radar Chart format by sub-sector. Certain systematic adjustments were added in order to avoid potential distortions due to limited number of respondents and their differences in their subjective interpretations of the questions and the multiple choice answers.



Source: JICA study team

Figure-30: Morale Survey for Employees

In the employee survey, the sub-sectors differ little in all of the 6 subject areas. The 100 point represents the average. All areas except 5S are around the average. Across all the sub-sectors, it appears employees have very similar perception of their companies' employee relations affairs and workplace morale. This may be that the companies of all sub-sectors treat their employees under similar policies of employee relations and personnel control. The distinctly positive attitude to 5S may reflect that respondents are familiar with 5S and probably like doing 5S.



Source: JICA study team

Figure-31: Morale survey for Managers

In the manager survey, difference between sub-sectors is quite visible. The difference may be based on the characteristics of the business of the sub-sectors, such as the order-based production in the metal sector versus more mass market-linked constant production in the Agro-processing sub-sector. In general, managers' responses have higher marks than employees' responses reflecting the managers' positions in their organisations. It is notable that, to the question about 5S, the employee responses have higher mark. This may suggest better applicability in the Ethiopian companies of the approach of starting from workplace KAIZEN. Where the front-line employees become positive and proactive in KAIZEN activities, there is good possibility that workplace KAIZEN can spread in the company organisations and then necessitate KAZEN at the managerial level by managers. Overall, the sector difference shown in the manager survey suggests that there is a need for some customisation to the KAIZEN guidance by sub-sector.

3.6 Outputs of Pilot Project: Ethiopia KAIZEN Manual and KAIZEN Visual Guide

3.6.1 Ethiopia KAIZEN Manual

1) Basic idea on the manual

A consensus between the JICA study team and KU was that the manual to be formulated in the Study should be a major subject of the roadmap to KAIZEN, meaning that the manual shall be a document containing procedural flow of actions to attain the goal of facilitating a self-organising process so as to implement KAIZEN activities. It implies that the main body of the manual should be neither a textbook-style document nor reference materials.

2) Guiding principles to prepare the manual

The manual is necessary at the time of implementation of action plans to be incorporated into the dissemination component of the national plan for KAIZEN activities. A series of discussions among KAIZEN project team resulted in the basic consensus on the guiding principles based on a fundamental principle.

(1) Assimilation into Ethiopian situation as a fundamental principle

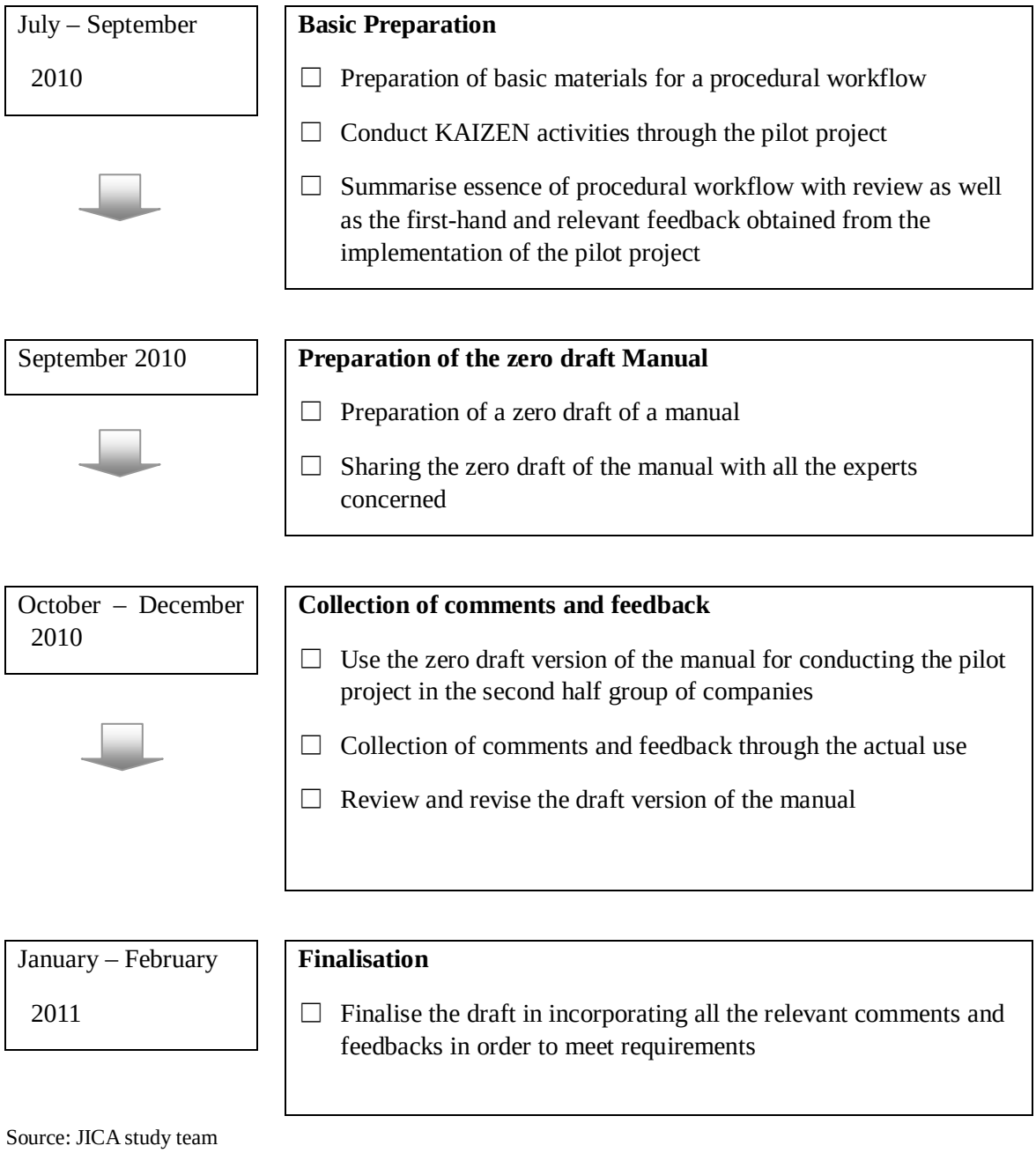
A variety of materials related to KAIZEN are becoming accessible through the Internet in addition to publications available. It is, however, of crucial importance that the manual should be assimilated into Ethiopian situation. For doing so, any form of draft manual documents should be examined on the actual ground at the time of implementation of pilot project at manufacturing companies, so that much relevant feedback can be incorporated into the manual. It is hoped thus that the intended manual will be blended into a brand of Ethiopia.

(2) Three basic guiding principles to prepare a manual

The manual to be prepared should have three basic characteristics; namely, (i) usable; (ii) self-learnable; and (iii) self-monitorable. As a result, it is expected that the KAIZEN manual shall be diffusible as well as usable for conducting intended KAIZEN training for those companies' owners, managers and employers who are interested in KAIZEN yet without sufficient knowledge on KAIZEN. It is expected that the manual shall be utilised for continually conducting KAIZEN at the firm-level, especially activities related to company diagnosis and guidance after the completion of this Study.

3) Main workflow of the preparation of the manual

Based on the above principles, the manual will be completed by accommodating all the tested results and feedback at the firm-level in accordance with the workflow and timeframe described in Figure-32.



Source: JICA study team

Figure-32: Workflow for Preparation of KAIZEN Manual

4) Completion of Ethiopia KAIZEN Manual

In accordance with the above workflow, the main parts of a zero draft version of the manual were compiled in September and shared with the KU members in October 2010. This draft was based on the methodology of the KAIZEN guidance developed in the pilot project. Subsequently the draft was put into test use in the process of the KAIZEN guidance activities with the second group of the pilot project. Through this test use, feedback was collected and accumulated for corrections and improvements in the manual description of the guidance processes. In addition, the pilot project's second group KAIZEN guidance implementation resulted in some important improvements in the

guidance method, which were added to the rapidly thickening feedback information notebook. The walls around the desk of the consultant who did the editing of the manual became a makeshift KAIZEN Board dedicated to improvement ideas for the manual. The walls soon got inundated by large sticky labels with the ideas from the KU members as well as the JICA team members. In early December, the zero draft was revised with additions of certain methodological chapters that had been under preparation. Subsequent to that 'first draft' compilation, a number of small-improvement versions were compiled and more inputs were received for more improvement. In February, thorough and intensive work was undertaken in a final push for the completion of the manual. The work was finished in March 2011with the completion of the final draft of the manual which was titled: Ethiopia KAIZEN Manual.

The structure of the manual with its features as the operating guidebook of the KAIZEN guidance with methodological clarity is shown in the summary contents of the manual below.

Introduction: Getting involved in KAIZEN

Chapter 1: Familiarising with the Basic KAIZEN Knowledge and Process
- 1.1. What is KAIZEN all about?
  - Defining KAIZEN
  - Five guiding principles of KAIZEN
  - Focused scope of KAIZEN
  - Imperative attribute to KAIZEN
- 1.2. KAIZEN in Comparison to other methods of improving business operations
  - KAIZEN compared to BPR and Benchmarking
  - KAIZEN and ISO
  - KAIZEN, TQC and TQM
- 1.3. KAIZEN consultant in human resources management

Chapter 2: Making Basic Preparation for the KAIZEN Guidance
- 2.1. Selecting manufacturing companies
- 2.2. Conducting reconnaissance survey
- 2.3. Contracting with companies

Chapter 3: Guiding and Counselling Companies through the KAIZEN Guidance
- Step 1 Understanding of overview of KAIZEN
- Step 2 Understanding standardisation of workplace environment and operation
  - 5S
  - Operation Standard and Time Study
  - Elimination of Waste (MUDA)
- Step 3 Implementing KAIZEN activities at the company
  - Organising 'Sort' activity
  - Undertaking '3S' activities in elimination of MUDA
- Step 4 Understanding overview of QC Circle
  - How to organise QCC; What is QC story?
  - What is QCC presentation; How are QC 7 tools used?
- Step 5 Organising QCC activities at the company
  - Conducting QCC meeting
  - Conducting QCC presentation meeting
- Step 6 Preparatory work for company-wide KAIZEN activities

Chapter 4: Monitoring and Assessment of the KAIZEN Guidance
- 4.1. Two phases of KAIZEN activity as target of monitoring and assessment
- 4.2. Monitoring and assessment method for KAIZEN guidance activities (Self-organising process phase)
- 4.3. Basic indicators for management of production applying for KAIZEN

activities (Self-practicing phase)
4.4. Procedures for monitoring of KAIZEN guidance activities

Chapter 5: Knowledge-based Materials to be used for the KAIZEN Guidance (Training Materials Nos. 1 – 17)

Appendices

1. Forms
2. Questionnaires
3. Report formats
4. List of reference materials in KAIZEN Library

3.6.2 KAIZEN Visual Guide

As supplementary materials to the manual, a set of audio-visual materials called KAIZEN Visual Guide was produced in the Study. The KAIZEN Visual Guide is broadly categorised into two volumes: Volume 1 - A high level introduction to KAIZEN; and Volume 2 – Collection of five titles that are more detailed training materials for management and key employees such as QCC leaders.

Volume One: The Road to Change(A 45-minute visual introduction to KAIZEN, including the Prime Minister interview, visual presentation of some of the foundation concepts of KAIZEN using Ethiopian factory scenes.)

Volume Two:

Vol.2-1	5S Overview (How to Start 5S, showing the whole steps of the initial 5S implementation. Shot at one of the pilot companies of the pilot project.)
Vol.2-2	5S Case Study (Real examples from the several pilot companies)
Vol.2-3	Elimination of MUDA (Group training material for a MUDA-dori exercise, performed by the KU members)
Vol.2-4	(a) Time study; (b)Standard Operation Sheet; (c) Operation Distribution Sheet (Group training materials for exercises of standardisation of operation, performed by the KU members)
Vol.2-5	How to conduct QC Circle ("How to" QCC presentation consisting of the whole QC Story of a real QCC at one of the pilot project's pilot companies)

The KAIZEN Visual Guide contains real-life examples at some of the pilot companies who have participated in the KAIZEN guidance of the pilot project. Such Ethiopian examples are expected to stimulate interest of viewers from companies who are new to KAIZEN and to get them familiarised with the first- hand knowledge of KAIZEN activities.

The production work of the audio-visual materials has faced with some significant delay. One major factor of the delay was the lack of experience in the production contractor for KAIZEN. With additional efforts on the part of the JICA study team and the KU, the KAIZEN Visual Guide was completed in June 2011.

3.7 Lessons Learnt from Pilot Project Implementation

During the course of the implementation, the pilot project encountered a number of issues in the KAIZEN guidance activities with the pilot companies. The following discussion focuses on some of the issues that are of significant importance for the future development of the KAIZEN guidance activities and nation-wide dissemination of KAIZEN in Ethiopia.

1) <u>Standardisation: establishing standards at companies</u>

<Issues>

Standardisation of activities at companies bears critical importance in all KAIZEN activities. Established standards of a workplace's environment and operations are the starting point of improvement efforts, or any KAIZEN activity cycles. When an improvement measure is implemented as a result of KAIZEN activities, the improvement must be incorporated in the new standards to be created at the conclusion of the KAIZEN activity cycle. Standardisation is critical also because standardised processes in a manufacturing company are the basis for managing quality of products. In the course of pilot project implementation, the project team came to realise that in many cases at the pilot companies the managers and employees had difficulty in establishing and maintaining standards, or rules, of their companies. In other words, in existing thinking patterns, establishing standards is oftentimes viewed as something that should be driven by bodies outside the company, such as government agencies, foreign machinery-producing companies, or international agencies. Also the pilot project team often came across the situation where managers and employees did not know who had the authority for standard-setting or rule-making. Lack of managers' understanding that standardising activities in a company is of vital importance and lack of clear framework for standard-setting will hinder the company's KAIZEN activities.

< Lessons learnt >

● Pilot project's response:

Recognising this problem in many companies, at the time of the revision of the KAIZEN guidance methodology, it was decided that the standardisation themes should be given the place of "KAIZEN Starters" which should be dealt with at the front end of the guidance as explained in 3.2.2: 3) in Chapter 3. The KAIZEN Starters include (i) 5S – standardisation of workplace environment -, and (ii) standardisation of operation. In the revised methodology of the KAIZEN guidance, these two became the main themes in the first half of the guidance activities. In the process of the on-site guidance at individual companies, the individual guidance strategy for each company was tailored to the situation of the company taking the way and degree of their embracing standardisation into consideration. While this response was effective generally, there were cases in which KAIZEN activities slowed down or even came to a halt at some companies where weakness in the grasp of standardisation concept by key managers was observed.

● Future considerations:

The issue of establishing and revising standards/rules of a company with their own initiatives under an appropriate delegation of authority will deserve continued special attention in the future KAIZEN guidance. Under the KAIZEN guidance methodology in which the standardisation themes are focused at the front end, effective guidance strategies for these themes should be further explored by KAIZEN consultants. In the context of management capability improvement of private companies, this issue may relate to business culture of self-disciplined and self-innovative management, an essential element for an enterprise to be successful in a competitive market. Consideration should be given to this aspect in the area of business culture in a broader perspective of the KAIZEN dissemination in the future.

(Additional background information)

When a question was asked during company visits about the company's situation of standards/ rules, it was observed that they did have some standards/rules. However, company managers often raised a question: 'How can we enforce adherence to the rules by our employees?' The observation and question reveal that the companies do not have a policy to establish standards/ rules for all the activities and operations of the organisations. Thus, standards/rules exist only partially, resulting in a situation where the meaning of the standards/rules is unclear and confusing to the employees. This is the primary reason why the employees do not observe standards. The problem is that there are no 'standards' for establishment and revision of standards. Thus, questions remain unanswered: 'What areas of activities should be subject to standards/rules in our company?'; 'Who will write standards?'; 'Whose approval will be necessary?'

2) <u>Business planning: Utilising long-term business plan and production plan</u>

<Issues>

It was found through the pilot project that the long term business plan was in many cases not available at the pilot companies. There were cases where a long term business plan existed, but the plan had been written by an outside consulting firm without management control or ownership of the plan. Also in many cases, production planning for monthly, weekly or daily operations is inadequate. Those planning issues raise a few agenda for the KAIZEN adaptation in Ethiopia in the following three areas.

(1) In general, a company's business plan gives the management basic information as to where the company stands by comparing the business plan and the company's current results. Periodic reviews of latest business results against the plan should be one of the most basic management tools to continually align the company operation towards progress for improved results and for achieving the goals of the company. Weakness in planning is closely concerned about whether the company is capable of continually conducting KAIZEN activities in the phase of self-practicing. Lack of management ownership over the plan and lack of utilisation of the plan lead to the question of how effective the self-organising of KAIZEN would be to build the groundwork for the

KAIZEN activities.

(2) The business plan should be associated with a management plan structure in which there is a link among the long-term business plan, annual business plan and shorter-term production plans. Such plans provide various targets that serve as the standards, against which the current situation can be measured and evaluated, and it is a starting point for a KAIZEN cycle. Lacking of or non-use of such production plans would be a condition detrimental to the progress in the KAIZEN activities at workplaces.

(3) Lack of long-term plan and vision is in some cases associated with the company owner's focus on short-term profits which often leads the company to a disruptive situation for continuous improvement efforts of KAIZEN activities. Examples of this include frequent changes in the key personnel and abrupt change or suspension of a production operation. On the other hand, the pilot project team observed encouraging situations where the company owners held a clear long-term vision for the direction of the company and succeeded in creating an organisational environment in which an appropriate delegation of authority was put in place facilitating smooth progress of KAIZEN activities.

< Lessons learnt>

● Pilot project's response:

The KAIZEN guidance, which focuses on the companies' self-organising process to enable them to practice workplace KAIZEN, could not allocate time on the business planning issues except for a supplementary advice opportunity at the last step of the guidance, when relevant advice may be provided where needed.

●Future considerations:

Capacity development for business planning cannot be accomplished in a brief advice session. In the next phase of KAIZEN dissemination, it is recommended that business planning capability be emphasised as one of the continual capacity development agenda for the companies of the industry sector and that an appropriate training assistance programme targeting such companies be considered.

(Additional background information)

In the area of production planning, most companies have a production plan in the form of a production volume target per day, and a follow-up is done in terms of daily production achievement. However, the practice of daily production plan is not linked to order/sales, and is not much concerned with problem-solving such as a widening gap between the plan and results. There have been cases of an abrupt suspension of factory operations. The lack of production plan has many consequences. It often leads to unplanned, sudden purchases of materials that cause a cash squeeze for the company. It also makes equipment purchase planning and facility maintenance planning practically impossible. It makes it difficult to secure an appropriate size of the workforce.

In some cases, equipment purchased was not used for a year, which led to cash shortage and sudden suspension of operations, resulting in the employees losing their jobs. As a result, the company lost its valuable assets of highly skilled employees.

3) <u>Cost accounting and operation data</u>

<Issues>

It is generally assumed that companies maintain certain accounting practice in place for corporate accounting purposes as well as tax purposes. Furthermore, in the area of management accounting, cost accounting in terms of cost by product is very important for the companies' KAIZEN practice, especially when they progress beyond the starting stage of initial elimination of wastes. In addition to cost accounting, various operation data is also critical in the advancement of KAIZEN activities, which are conducted with the fact-based approaches.

In the pilot project process, it was observed that cost analysis data such as data on cost accounting by product was not available in most cases. Non-accounting business data was oftentimes not properly recorded or managed in the way it can be used for KAIZEN activities.

Many factories maintain a great deal of data, such as raw material stock data, production output data, quality data of materials and products. However, such data is recorded in workplace files or notebooks, and there is no opportunity for persons in other departments to see the data. The way the data is managed is fragmented and the managers and employees cannot see the whole picture of production operation. This is related to the lack of production plan.

In this environment, the data collected is not analysed and used for KAIZEN activities. Analysis of the data that companies maintain today will help the managers and employees understand their current situation and problems.

< Lessons learnt>

● Pilot project's response:

The KAIZEN guidance does not provide instructions on cost accounting and operation data management issues except for a supplementary advice opportunity at the last step of the guidance, when relevant advice may be provided where needed.

● Future considerations:

It should be noted that cost accounting and operation data become important after the companies' KAIZEN activities progress beyond initial improvement. Findings in the pilot project suggest that companies should pursue capacity development for cost accounting and operation data management. In the next phase of KAIZEN dissemination, it is recommended that an appropriate training assistance programme be considered to address cost accounting and operation data management.

4) <u>Trust and empowerment within company organisation</u>

<Issues>

It was assumed in the planning of the pilot project that mutual trust in the management-employee relations exists in the companies who wish to introduce KAIZEN. It was observed that the pilot companies, who were particularly successful in making progress in the KAIZEN activities, were led by top management or owners who maintained strong policies and practices of trust and empowerment for employees, supporting middle managers and employees including employee training and delegation of authority. On the other hand, there were companies whose management practice lacks the clear principle for supporting their employees, in which case, the KAIZEN activities were slower.

< Lessons learnt>

● Pilot project's response:

The KAIZEN guidance in the pilot project could not allocate time to address the issue of trust and empowerment in the pilot companies.

● Future considerations:

The findings clearly indicate that trust and empowerment for employees is a critical factor for KAIZEN to take root in a company organisation successfully. Trust and empowerment is an organisation management principle that encompasses: providing employees with training opportunities; delegating proper authority to managers and supervisors; and supporting employees' initiatives at the workplace. Trust and empowerment is expected to further developed and strengthened as the company's practice of KAIZEN bears fruit in creating an organisation of managers and employees who improve themselves on their own initiative. The findings also indicate that there are many companies in Ethiopia who embrace trust and empowerment.

In the next phase of KAIZEN's dissemination, it is of vital importance to emphasise trust and empowerment as the key success factor of KAIZEN in a company. KAIZEN's dissemination should be promoted in synergistic development of KAIZEN and trust and empowerment.

Trust and empowerment is not only the key success factor of KAIZEN but also a business management principle that is in contrast to the command and control principle of central planning. The JICA KAIZEN study team believes that it is an important element of business management culture that can assist the private sector transformation in the Ethiopian industrial development.

(Additional information)

- In many companies, delegation of authority to managers and supervisors is not clarified. Their roles and responsibilities are not clearly understood within the company organisation. For instance, when standards or rules were created, it was not known who should approve them. In the process of 5Ss implementation, decision-making on disposal of unnecessary items was stalled because the people involved in the KAIZEN activities had to assume that the owner's approval would be

required, whether it be cheap consumable goods or more expensive articles. The circumstances are not compatible with the organisational environment that makes it possible for middle managers' and employees' to exercise their initiatives for improvement.

- In many cases, regular communication channels among the top and middle managers are missing, exacerbating weakness in prompt decision-making.
- At many companies, personnel transfers are frequent. In some cases, replacement of general manager takes place frequently. And middle manager changes are more frequent. In such an environment, it is not possible for managers to devote themselves into their managerial work. As an example of these instances, in a pilot project company visit, it was discovered that the manager who had organised the KAIZEN activities up to the previous visit had been suddenly transferred elsewhere.
- Many companies do not appear to maintain a policy emphasis for long-term capacity development of employees, such as: (1) career development and career path of the employees; (2) transparent and objective appraisal of employees; and (3) employee training programmes.

5) <u>Quality-conscious mind-set</u>

<Issues>

In the process of the pilot project implementation, there were a few cases where the company management lacked quality-conscious mind-set, or the management policy gave priority to production volume and low or zero priority to quality management. In such cases their KAIZEN activities lost management support and came to a halt. Those companies were manufacturers of products for which they enjoyed the market demand outweighing supply on an on-going basis.

<Lessons learnt>

● Pilot project's response:

The KAIZEN guidance addresses in detail the concepts of quality management and its importance in the day 1 of the guidance programme in the segment of the Conceptual Foundation of KAIZEN. However, other than the discussion meetings with company management, the KAIZEN guidance is not in a position to change the basic policy of a company management who has made the policy decision consciously in response to their business situation.

● Future considerations:

Where a manufacturer's products are in an excess demand situation which is expected to continue for an extended period of time, generally, the management or the owner of the company has no incentive to pursue improvement of quality of their products. In such circumstances KAIZEN is not needed by the management and KAIZEN will never take off at the company even if any KAIZEN guidance is promoted by an outside consulting agency. In general, KAIZEN is not wanted by company managers and owners in an industry segment where companies are not required to compete in the market to win customers, because there is little need for quality improvement in this situation.

In the context of future dissemination of KAIZEN, government policy consideration may be given to

the following areas.

(1) In a broad economic policy perspective, competitive environment for the manufacturing should be in place with appropriate policies of fostering competition, removing obstacles to competition and assuring fairness in competition. Quality improvement does not progress in a segment where manufacturers are not required to compete each other to win customers. As a result such segment tends to lag further behind relative to international markets. KAIZEN can make progress and take root in companies only where the managers and owners want them to excel in the marketplace.

(2) In another policy perspective, enhancement to the publicly promoted framework of quality standards of manufacturing products, such as Ethiopian Standards, can be a significant contributor to raise quality-conscious mind-set. A publicly supported grading of various products and public accreditation of product grade for products, both domestically produced and imported, should be an important factor in promoting fairness in the market competition, as well as in fostering quality-conscious mind-set both on the producer side and the buyer side.

6) <u>Conclusion: KAIZEN at Workplace and Management Capability Building</u>

As explained in detail in 3.2.5 Notes on Initial Approach and Subsequent Changes in the Method of Pilot Project and 3.4.2 KAIZEN Guidance Implementation: January – September 2010: 3) Revised implementation plan, the most important lesson that the pilot project team learned was the revision to the basic approach to KAIZEN implementation, i.e., the KAIZEN guidance methodology.

Having learned about the shortcomings in the initial approach, the pilot project team revised the methodology from the management diagnosis and guidance approach to the workplace KAIZEN approach. The team established the guidance methodology of workplace KAIZEN with uniformity in all areas of implementation procedures that are presented in detail in 3.2. The methodology and procedures were applied uniformly in all the pilot companies by the 3 sub-teams of the pilot project. These changes were in response to the findings in the initial rollout of the pilot project.

The revised methodology proved to be effective in the implementation process after July 2010. Towards the end of the pilot project activities, it was mentioned by some managers of pilot companies that frankly they did not understand why 5S was important and how KAIZEN could be implemented at the time of the initial guidance before the revision, but that now they understand. In the trial morale survey explained in 3.5.2, 79% of the managers and 87% of the employees indicated to be actively engaged in 5S. The revised KAIZEN guidance methodology proved to be effective.

However, it should be noted that KAIZEN at workplace cannot continue its progress without improving management capabilities. The need for improvement in management capabilities is confirmed by the lessons learnt explained above 1) through 6). Therefore, management capacity building deserves more elaboration.

● Agenda for management capacity building:

In summarising the discussion on the lessons learnt together with additional reflection on the KAIZEN methods, the following should be given consideration for further development of KAIZEN in Ethiopia, in the context of building on the effective approach of workplace KAIZEN.

(1) Along with promoting KAIZEN at workplaces and creating the organisational capability to continue KAIZEN, the KAIZEN-practicing companies should enhance their capability to collect and manage data that are required for management of production so that the requisite indicators are correctly calculated and made available timely to the users within the organisations.

(2) Utilising such indicators, the KAIZEN-practicing companies should establish the practice of setting objectives and establishing plans. These apply not only to the company's KAIZEN activity planning, but also to the company's overall business planning and production planning that enhance management of their business with the plan-do-check-action discipline.

(3) At a KAIZEN-practicing company, the roles and responsibilities of managerial functions of all departments of the company should be clearly defined for each function and its responsible manager. Each department should set its objectives, establish its plan, and maintain its requisite data and indicators to review its results against the objectives and the plan. There should be institutional framework to ensure proper management in the company such as a regular management meeting system. Overall, self-disciplined management capability in all the organisations within the company should be established.

(4) As the management capability is upgraded, technology capacity and skill capacity within the company will be required. In order to accomplish these, the company needs to have the spirit of challenge for innovation. It also needs to nurture an enabling environment at the workplace level to effectively respond to new technologies on an on-going basis. This requires a system at the workplace level to capture the front-line worker' skill levels accurately and a training system to improve and upgrade the employees' skills.

The KAIZEN guidance established in the pilot project is effective in providing the basis for laying the foundation of KAIZEN culture of collaboration of top management, middle managers and front-line employees based on the workplace KAIZEN. The agenda going ahead summarised above, and the most of the issues detailed in this section 3.7, belong to the area of what the KAIZEN guidance methodology categorised as Fundamental Enablers for Recurrent KAIZEN Agenda at the bottom of KAIZEN Tree (Figure-13). Working on these agenda is critical for KAIZEN to sustain and grow in the Ethiopian companies.

In order to facilitate the private companies' own effort of acquiring and enhancing these capabilities, public assistance may be considered such as providing training in coordination with the KAIZEN dissemination programmes and possibly a publicly recognised system of business management consultants.

Chapter 4: Capacity Development of KAIZEN Unit

4.1 Methods for Capacity Development

4.1.1. Main Avenues of Capacity Development

Transfer of relevant skills and techniques to the members of KAIZEN Unit (KU) is one of the three objectives of the study as defined by the Scope of Work. KU is an organisation established by MOI to implement the study and is being made up of ten members as of March 2011. (See 1.2.5 for organisational information and Appendix 2 for the list of members.)

In the pursuit of the objective of KAIZEN Unit capacity development, four avenues were utilised in the implementation of this Study:

1) On-the-job training: On-the-job training, which took place in conjunction with the pilot project's company visits for on-site guidance and their related activities before and after the visits, was the most crucial avenue of technical transfer. This training of the on-site company diagnosis and guidance provided the core of capacity development opportunities for the KU members. The training was done in 3 sub-teams separately in accordance with the company visit schedule of the KAIZEN guidance. The JICA study team and the KU members spent on these activities four days out of five every week when the JICA team is in Ethiopia.

2) In-house training: In-house training programmes were arranged, outside of the on-the-job training, as a focused opportunity in a group-training format in which all the KU members were asked to attend. The in-house training was conducted in close coordination with on-the-job training. In-house training included work related to events for companies such as the pilot project's seminars and other external and internal activities that involved the format of the in-house training.

3) Self-learning: In addition to the other three avenues, self-learning by the KU members has served as one of the fundamental elements in the acquisition of KAIZEN knowledge and skills. After all, self-learning is an important aspect of KAIZEN activities. It includes: (1) study by themselves of reference books and materials; and (2) compiling reference materials including collecting materials from outside sources, such as translation into Amharic. These activities eventually provided the KU members with opportunities to deepen and broaden the knowledge and instruction-related skills.

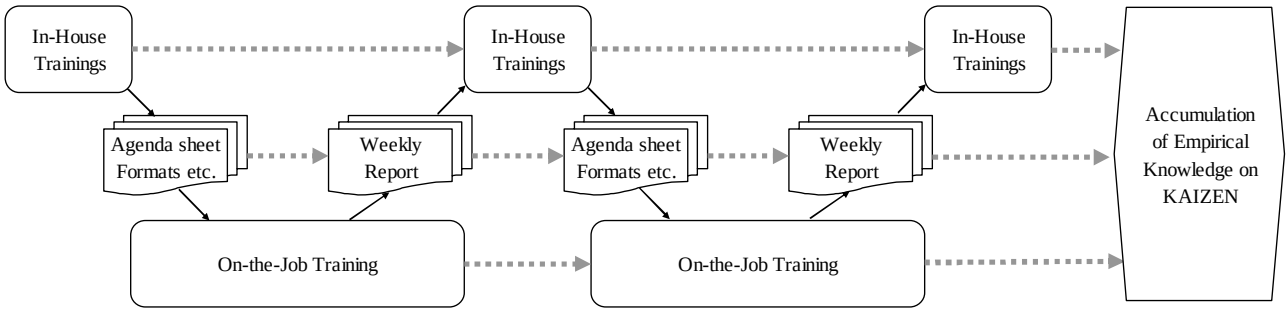
4) Training Programmes in Japan: JICA implemented two programmes of training in Japan for the Study in the spring of 2010. A two-week programme was conducted in May for KAIZEN practitioners involving the KU members and the pilot company managers. The other was a one-week programme in April for higher level counterpart officials.[1]

[1] This section focuses on capacity development for the KU members. The training in Japan for the pilot company managers is discussed in 3.4.4.

4.1.2 Relational Linkage between In-house Training and On-the-Job Training

From the perspective of KU's capacity development, the KAIZEN guidance approach helps the KU members by providing a uniform structure in the guidance activities for the companies. The conceptually-structured approach together with the distinct scope of the KAIZEN guidance makes it possible for the KU members to master the knowledge and skills for conducting the basic form of the KAIZEN guidance in a relatively short period of time. However, although the same format of the KAIZEN guidance applies to all companies, actual issues and problem themes that are taken up in the exercises of KAIZEN activities under the guidance differ from one company to another. The KU members are expected to gain capability to deal with these companies' specific themes to help them successfully experience the self-organising process. The challenge to gain such a capability may take long time. It involves application of careful analysis on patterns of interactions. Without such an analysis, empirical knowledge may not be accumulated to discuss operational issues, such as 'in which situations or conditions a certain KAIZEN tool can be workable and applicable or must not be applied?', or 'how can a certain tool be chosen and why?', or 'what should be the appropriate indicator to verify outcome or impacts of a KAIZEN theme chosen by a QC Circle at a certain company?', or 'what are the particular elements vital for self-sustained process of KAIZEN at a certain company?' For this reason, the on-site diagnosis and guidance activities as the on-the-job training are the very core of the KU capacity development. At the same time, the on-site diagnosis and guidance training must be augmented by making the most of other available training opportunities that mainly involved the format of in-house training.

In order to increase the basic capability for conducting the uniform format of the KAIZEN guidance and the capability for analytical application, and accumulate empirical knowledge within KAIZEN Unit, each member of KAIZEN Unit is requested to prepare his or her personal daily note that can provide a basis for further preparation and submission of a weekly report for compilation, review, analysis and synthesis of the essence of KAIZEN activities. Such an accumulation flow of empirical knowledge is illustrated in Figure-33.



Source: JICA study team

Figure-33: Accumulation flow of Empirical Knowledge

4.1.3 Basic Arrangements of In-house Training

The JICA study team and KU made sure that enough time for in-house training be secured. While on-the-job training opportunities would present themselves during the course of the execution of the pilot project activities, the in-house training needed conscious efforts in scheduling time and agenda. Taking into account the close linkage of the two training activities, the in-house training was conducted with the basic arrangement following the template shown the Table-31.

Table-31: Template Arrangement of In-house Training Session

Issue	Description
Regularity	Day: Every Monday Morning Time: 10:30 – 12:00 (Subject to change according to contents and volumes of subjects)
Venue	An office of KAIZEN Unit members (Room No. 17)
Objectives	For KAIZEN Unit members 1) To acquire basic knowledge and skills required for KAIZEN activities 2) To sufficiently well equip themselves with knowledge on contents, procedures, and methods required for conducting company diagnosis and guidance 3) To build a listening capacity accompanied with presentation and leadership capacities
Main Subjects	1) Preparation of an agenda for each company visit in a framework on diagnosis and guidance 2) Basic KAIZEN knowledge and process; 3) Overview of KAIZEN 4) Overview of 5S 5) QC seven (7) tools and QC circles 6) Other related topics
Resource Persons	JICA KAIZEN study team members
Main Presenters	Organisation of in-house training relates to the arrangement of the pilot project, i.e., two-group arrangement. ☐ During the period for the first group, JICA study team members will be the main presenters on intended topics. However, many opportunities will be given to KAIZEN Unit members to do presentation. ☐ Depending upon the degree of knowledge and skills acquisition, during the period for the second group, KAIZEN Unit members will do presentations as the main presenters and JICA study team members provide them supplementary and necessary technical advice and information.
Expected Outputs	1) Weekly study report by each member 2) Topic-specific presentation notes and materials 3) Various formats and documents in accordance with each procedure 4) Other related materials
Expected Contributions	Outcomes from in-house training are expected to facilitate the preparation of a “Ethiopianised” user-friendly KAIZEN manual

Source: JICA study team

The above template arrangement was applied to other training opportunities that included training activities that required active involvement of the KU members’ as one team, such as preparatory and

administrative work and post-event analysis for the seminars for the pilot companies and other group-training events, as well as the whole KU group involvement in the improvement of the manual draft and in the production of the audio-visual materials. In all of these, special training sessions were held following the template arrangement mostly on Mondays.

4.2 Outcomes of Capacity Development of KU

4.2.1 On-the-job Training

On-the-job training represents the most important avenue in the training for KU members in this Study. This includes the company visits and preparation and report-writing activities before and after the visits.

For the purpose of the on-the-job training, company visits for on-site guidance provide one of the most valuable training opportunities. Within the KAIZEN guidance programme, the company visits were done 10 times per company on average, and each KU member made an average of 90 visits. Furthermore, company visits were done in an effort to select 60 companies on the pre-pilot project stage, and if that is also counted, then KU members completed an average of 120 company visits with the JICA team members.

During the pilot project period, KU members were trained in performing three kinds of activities or more for each visit. They are: listening to the discussions between the JICA team member and the people on the company side on-site at the company; reading the report that was summarised by the JICA team member back at the project office; and providing feedback comments to that report.

In addition, there were positive interactions between company visits with the JICA team members and visits without them. The KU members independently made approximately five visits to each company from March through June 2010 while the JICA team members were back in Japan. Company visit reports were also written for such visits. These company visits on their own proved to be an excellent opportunity for the KU members because such visits allowed them to speak in consulting meetings and/or give lectures. Such valuable experiences helped the KU members with their capacity development as the pilot project further progressed.

In the latter half of the project, the KU members became increasingly active partners in the KAIZEN guidance sessions. In the second group company visits, the KU members proactively played the role of a speaker jointly with the JICA team member of the visiting team by providing detailed explanations to the people at companies. Moreover, the KU members became proactive in writing the company visit reports.

Outcomes of on-the-job training are positive and the KU members continue to perform self-development as KAIZEN consultants.

Notes on KU's company visits:

Company visits by the KU members alone without accompanied by the JICA study team members have been actively conducted since March 2010 (the JICA team was unavailable at that time). Most of the three sub-sector teams of KU conducted follow-up activities focusing on QC Circle activities. They received QCC meeting reports from each company, analysed the reports and formulated company visit reports. This practice was an empowering experience and significantly valuable to the KU members.

- Between the JICA team's 2nd and 3rd study periods in Ethiopia
  (mid-March to end-June 2010)

  Over the period of approximately three months, KU completed five visits to each company of the first group. (The total period is approximately four months long. Due to the training in Japan during the period, however, net available time was approximately three months.)

  Examples:

  Agro-Processing: Sebeta Agro-Industry: Mar. 30, Apr. 12, Apr. 20, Apr. 28, Jun. 23,
  Universal Food: Mar. 25, Apr. 8, Apr. 14, Apr. 27, Jun. 15,
  Addis Modjo Edible Oil: Mar. 24, Apr. 1, Apr. 13, Apr. 22, Jun. 9,

  Textile: G Seven: Mar. 24, Apr. 1, Apr. 13, Apr. 22, Jun. 15,
  Ediget Yarn: Mar. 25, Apr. 6, Apr. 14, Apr. 27, Jun. 15,

- Between the 4th and 5th study periods in Ethiopia (End-Dec. 2010 to Mid-Jan. 2011)

  Over the period of approximately three weeks, the KU members completed an average of two visits to each of the second group companies.

Table-32: KU's Company Visits during late Dec. to middle of Jan.2011

	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	10-Jan	11-Jan	12-Jan	13-Jan
	Mon	Tue	Wed	Thu	Fri	Mon	Tue	wed	Thu	Fri	Mon	Tue	wed	Thu
Morning	Adama Spining (T)	Ethio Japan (Audio)	Maru (M)	Kadisco (C)	Walia Leather (C)	(Audio)	Ambassador Gar (T)	East Africa (C)	Adama spinning (T)		Walia Leather (C)	Kadisco (C)	East Africa (C)	Gatepro (M)
Afternoon		Ethio Japan (Audio)	Sinthec (Audio)	Sinthec (Audio)	G7 (Audio)	(Audio)	Kality Food (A)				(Audio)	(Audio)	East Africa (C)	(Audio)
Morning	Mesfin (M)	Kality Food (A)	Ambassador Gar (T)	Seka Business Group (A)	Ethio Japan (T)	Gatepro (M)	(Audio)	Nas Foods (A)	Maru (M)		Mesfin (M)	Ethio Jap (T)	Seka Business Group (A)	Zenit Gebsh (C)
Afternoon	Ethio Japan (Audio)	(Audio)	(Audio)	Nas Foods (A)		(Audio)	Zenit Gebsh (C)	(Audio)	(Audio)		(Audio)	(Audio)	(Audio)	(Audio)

(Audio): Audio-Visual shooting activities with Walta Information Centre (production sub-contractor)
(M): Metal, (C): Chemical, (A): Agro-Processing, (T): Textile

Source: JICA study team

- Between the 5th and 6th study periods in Ethiopia (Mar. 2011 to Apr. 2011)

  During the period of the JICA study team's last abesence, KU successfully conducted a special supplementary KAIZEN guidnace programme for one of the pilot companies. It was KU's first comprehensive guidance activity executed independently. See Additional Notes at the end of 4.2.5 (Assessment of Capacity Development of KU).

4.2.2 In-house Training

At the early stage of in-house training, training was conducted primarily by the JICA study team members as instructors and/or resource persons. The KU members then rotated in serving as presenters, while establishing a rotation system among the KU members for this training. The training provided 3 or 4 opportunities for presentations for each KU member in order to encourage the members to improve their self-learning capabilities and presentation capabilities. Such training was practical and meaningful. For this training, besides the presenter, other KU member participants played mock trainee roles as a company general manager, a KAIZEN core team leader, and a front-line worker. With the audience role-players asking pointed questions, the presenter was challenged in a lively practice Q&A sessions.

Table-33: In-house training during the 2nd study period in Ethiopia (Jan. to Mar. 2010)

No	Date	Time	Content	Presenter
1	Jan. 25	10:30 - 12:10	Introduction: "5S"	JICA team member
2			5S	
3	Feb. 1	10:30 – 12:00	5S (group discussion and mini workshop)	
4			Key to business consulting and guidance services	JICA team member
5	Feb. 8	09:00 – 12:10	Review of 5S (group discussion and mini workshop)	
6			QC 7 tools	JICA team member
7	Feb. 15	10:00 – 12:10	"7S": Presentation and discussion	KU member
8			Ten rules for corporate visits	JICA team member
9	Feb. 22	10:00 – 12:20	5S: Presentation and discussion (Shine & Sterilise)	KU member
10			QC 7 tools: Presentation and discussion	KU member
11	Mar. 1		Postponed due to all-day power outage	
12				
13	Mar. 8	AM	QC 7 tools: Presentation and discussion (a) Graphs and (b) Scatter Diagram	KU member
14			Motivating 5S	JICA team member

Source: JICA study team

Table-34: In-house training during the 4th study period in Ethiopia (Nov. to Dec. 2010)

No	Date	Time	Content	Presenter
1	Nov. 1	9:00 - 10:30	KAIZEN's Overview	KU member
2		10:30 - 12:00	5S	KU member
3	Nov. 8	9:00 - 10:30	Operation Standard & Time Study	KU member
4		10:30 - 12:00	Elimination of MUDA (or Waste)	KU member
5	Nov. 15	9:00 - 10:30	Cancelled due to all-day power outage	
6		10:30 - 12:00		
7	Nov. 22	9:00 - 10:30	Over view of KAIZEN	KU member
8		10:30 - 12:00	5S	KU member
9	Nov. 29	9:00 - 10:30	Operation Standard & Time Study	KU member
10		10:30 - 12:00	Practice of Elimination of MUDA	KU member
11	Dec. 6	9:00 - 10:30	Elimination of MUDA	KU member
12		10:30 - 12:00	Practice of Elimination of MUDA	JICA team member
13	Dec. 13	9:00 - 10:30	How to organise QC Circle	KU member
14		10:30 - 12:00	Presentation: What is QC Circle?	JICA team member

Source: JICA study team

In addition to the above, the following seminars and other events involved the in-house training sessions for the entire KU team and provided many unique capacity development opportunities.

The pilot project conducted seminars as part of the KAIZEN guidance, such as the four-day seminar sessions at the beginning of the guidance and two-day QCC seminar in the middle of the guidance course. These group training events provided a unique opportunity for KU members to do administrative work effectively, to help the instructors with the training, and to prepare and analyse questionnaires.

As mentioned in 3.4.2 4), the pilot project held a special workshop called KAIZEN Experience Workshop in August 2010. For this special experience-based seminar, an outside instructor was invited. In this seminar, participants from the pilot companies were divided into 10 groups. Each group was expected to exercise KAIZEN activities in the process of doing assembly work of a simple product. Due to the experience-based learning in a carefully designed group-work exercise, this training stimulated interest and enthusiasm in KAIZEN among the participants. In this training, the KU members served as training assistants and provided advice to each group. The KU members answered questions raised by each group, and gave supplementary explanation to those who had not completely understood what the instructor had explained in English.

In a separate development a few months after the workshop, the KU members played actor roles in a shooting of a product assembly exercise for the pilot project's audio-visual material. The JICA study team and the KU members had conducted special in-house training for this exercise. The experience of the KAIZEN Experience Workshop was greatly useful in this exercise with ready understanding of purposes and essential points of such exercise. The group-work exercise is an important element that should be incorporated more in the KAIZEN guidance going forward. The experiences gained in the above events were valuable in KU's capacity building for course development and execution of such

exercise programmes.

4.2.3 Self-learning Activities

Self-learning is an important aspect in the capacity development in relation to the on-the-job training and the in-house training. Practice of self-learning is an integral part of KAIZEN culture that values highly self-initiated proactive actions of individuals within an organisation.

Self-learning invariably involves literature reading. In Ethiopia, it is difficult to access KAIZEN literature written in local languages such as Amharic. The KU members have used a KAIZEN Library established as part of the initial Study activities. They have also extensively used information available via internet. The materials used in the KAIZEN guidance are also the subject of self-learning. Particularly, when they were designated as a presenter for the in-house training, they spent a substantial amount of time absorbing PowerPoint project materials. The results of their self-learning were reflected in a good progress of their presentation skills.

In addition, various questions from the pilot companies at company visits provided opportunities of enhancing knowledge for the KU members, primarily through self-learning. The KU members have been capable of taking advantage of such situations. Even when the KU members provided companies with answers from the JICA team members, they made investigation using resources such as internet on their own. Such efforts of the KU members resulted in their more in-depth understanding of the issues raised in the live interactions with the companies.

4.2.4 Training Programmes in Japan

Training programmes in Japan were planned to provide the KU members and managers of the pilot companies with an opportunity to understand KAIZEN in a hands-on manner in order to facilitate and enhance the implementation of the KAIZEN activities back in Addis Ababa. For this objective, two programmes were implemented. One was a two-week programme for KAIZEN practitioners for which ten KU members and thirty pilot company managers participated. The other was one-week programme for higher level counterpart officials for which two officers from MOI participated including the head of KU.

1) The two-week KAIZEN practitioner programme was conducted in two sub-programmes in May 2010. The two sub-programmes were concurrently conducted - one in Osaka, the other in Nagoya. The ten members from KU / MOI participated in the Osaka sub-programme together with ten managers from the pilot companies. The programme was a comprehensive introduction to KAIZEN activities at Japanese manufacturing companies, including plant tours and Q&A sessions at the factories. It also included study and exercise sessions in a group-training format. The KU members were able to see KAIZEN activities in action and study various methods and tools applied at the factories in Japan. These activities were to provide them with concrete ideas on how to

promote KAIZEN activities in the Ethiopian manufacturing sector.

The programme had a significant impact on the KU members' knowledge base and mind-set. By seeing actual workplaces and processes at factories, KU members acquired clear image of what a standardised workplace looks like, how it functions, and how KAIZEN activities are conducted in real life. This solidified the common ground between the JICA study team members and the KU members, and gave confidence to the KU members as a KAIZEN consultant. It should be noted that the training in Japan was an important factor in the KU members' capacity development reviewed in the next section.

Table-35: Programme Schedule of Training in Japan (Osaka)

Date		Time	Subject	Contents	Lecturer or Visit Place
9-May	Sun			Arrival to Japan	
10-May	Mon	AM	Introduction	JICA Briefing	JICA
		14:00-17:00	Introduction	Program Orientation and making a target report	PREX
11-May	Tue	9:30-12:00	Discussion	Target setting and presentation	Summit Labo inc. Mr. Sugimura, Director
		13:30-17:00	Lecture	KAIZEN Activity in Japan	Summit Labo inc. Mr. Sugimura, Director
12-May	Wed	9:30-11:30	Visit	5S and TQC: Implementation and Effect	Nishigaki Socks inc.
		14:00-17:00	Visit	3S (Sort, Set in Order, Shine): Implementation and Effect	Hiraoka Alloyed Metal inc.
13-May	Thu	10:00-12:00	Visit	5S Implementation in a food industry	Kyodo Food Center inc.
		14:30-17:00	Visit	Case study of a leather manufacturing industry	Kawano inc.
		10:00-17:00		Accompanied by:	Summit Labo inc. Mr. Sugimura, Director
14-May	Fri	10:00-15:00	Visit	QC Circle and Tools: Implementation and effects	Exedy inc.
15-May	Sat			Kansai Programme	
16-May	Sun				
17-May	Mon	AM	Discussion	Review of learning	Summit Labo inc. Mr. Sugimura, Director
		13:00-17:00	Visit	KAIZEN: Implementation and effects	Sumitomo Engineering Industry inc. Itami Plant

18-May	Tue	9:30-11:30	Visit	(For KAIZEN Unit) Role and Dissemination of SME consultants scheme	SME Management Consultants association, Osaka Office
		14:00-16:00	Visit	(For KAIZEN Unit) Method of SME support by a government oraganisation	Bureau of Economy and Industry in Kinki
		9:30-12:00	Visit	(For company trainees) Practical methods of KAIZEN	Katagi Food inc.
		14:00-17:00	Visit	(For company trainees) Practical methods of KAIZEN	Nakagawa Industry inc.
		9:30-17:00		Accompanied by:	Summit Labo inc. Mr. Sugimura, Director
19-May	Wed	10:00-12:00	Visit	Practical methods of KAIZEN	To be decided (Chemical Industry)
		14:00-17:00	Discussion	Review of learning	Summit Labo inc. Mr. Sugimura, Director
20-May	Thu	9:30-12:00	Discussion	Information sharing of the trainees and making final reports	Summit Labo inc. Mr. Sugimura, Director
		13:30-17:30	Discussion	Final report presentation seminar	
21-May	Fri	10:00-12:00	Visit	Growth of companies and management philosophy	Konosuke Matsushita History Mesium
		PM	―	Evaluation, Closing Ceremony and Information sharing	JICA
22-May	Sat			Leaving Japan	

Source: JICA study team

2) The one-week programme for higher level officials was conducted in April 2010 in the Tokyo area. The programme was very intensive and its themes focused on policy-related areas: industrial policy and small and medium enterprise assistance both of government and private sector organisations; and private businesses (metal, chemical, leather).

The programme had significantly positive impact in terms of the Study. With the enhanced grasp of KAIZEN and its roles in various industrial support systems in Japan, the leadership of the head of KU became more effective and helped make the Study truly a joint undertaking. The participants' findings in the programme became a trigger for an Ethiopian government's own study mission to Japan on micro and small enterprise development policies in June 2010, which appears to have contributed subsequently to formulation of related policies. More directly related to the Study, immediately after the training in Japan, formulation of ideas of KAIZEN institutionalisation made

progress on the Ethiopian government side which resulted in the series of discussions between MOI and JICA on the subject of institutionalisation for the post- Study KAIZEN development, which is referred to in 5.1.1.

Table-36: Schedule of One-week Programme in Tokyo

Date	Time	Program / Topics	Place	Lecturer/Person in Charge
18-Apr (Sun)	18:00	Arrive in Japan	TIC	
19-April (Mon)	09:00-10:00	JICA Briefing Session	JICA Tokyo(TIC)	
	11:00-12:00	Orientation & Discussion on Training and Project	JICA HQ	Mr. Shimada, Ms. Mizunuma
	13:00-14:00	Industrial Policy in Japan	M/O Economy, Trade & Industry	Mr. Terazawa, Director, Economic & Industry Policy Div.
	15:30-17:30	Supporting SMES - Management & Human Resources Development	SMRJ (Organization for Small & Medium Enterprises and Regional Innovation, Japan)	
	19:00-20:00	Meeting with Mr. Arai, President, J-SMECA	Gakushi-kaikan	Japan Small & Medium Enerprise Management Consultants Association
20-Apr (Tue)	09:30-11:30	Activities by JPC, Japan Productivity Center	JPC	Mr. Fujita, Int'l Cooperation Dept., JPC
	13:30-15:00	Activities by APO, Asia Productivity Organisaiton	APO	Ms. Sunju Lee
	15:30-17:00	Promotion of KAIZEN in Ethiopia - Sharing Experiences in Tunisia & Argentina-	JICA HQ	Mr. Kikuchi, JDS (Japan Development Service Co. Ltd)
	17:30-19:00	Promotion of KAIZEN in Ethiopia - Lessons from Industrial Cluster Support-	GRIPS	Prof. Otsuka, Prof. Sonobe (National Graduate Institute for Policy Studies)
21-Apr (Wed)	*9:30*	*Meeting with travel agent*	TIC Lobby	*Ms. Fukuda, KSA*
	10:00-10:30	Interview by Int'l Development Journal	TIC SR.#10 (4F)	Mr. Nakatsubo
	14:00-16:00	(O)Nippon Steel Corporation, Kimitsu Works		Kisarazu City, Chiba Pref.
	18:00-19:00	(O) Hiroki Fur & Leather Fashion	Yokohama City, Kanagawa Pref.	
22-Apr (Thu)	09:00-10:00	(O) Shonan Altec (metal processing company)	Hiratsuka City, Kanagawa Pref.	
	10:30-14:00	(O) Mitsubishi Plastics	〃	
	15:00-17:00	(O) Mitsubishi Chemicals (Kasei Optonix)	Odawara City Kanagawa Pref.	
	17:30-19:30	Dinner with Mitsubishi Chemicals	〃	
	21:30	*Return to TIC by train & taxi*		
23-Apr (Fri)	10:00-11:30	Promotion of KAIZEN in Ethiopia -Sharing Experiences in Asia -	GRIPS	
	14:00-15:00	Seminar in JICA (Presentation of the result)	JICA HQ	Industrial Development Department
	15:00-15:30	Meeting with Mr. Kuroda	〃	Mr. Getahum Mr. Wondu
	15:30-16:00	Program Evaluation Session	〃	Mr. Kuroda, Vice President, JICA
	16:00-17:00	Meeting for the Project with Mr. Getafun	〃	
24-Apr (Sat)	morning	Observation of Tokyo		
	16:30	Leave TIC for Haneda Airport		

Source: JICA study team

4.2.5 Assessment of Capacity Development for KU Members

The aforementioned four items of capacity development activities: (1) in-house training; (2) on-the-job

training; (3) self-learning; and (4) training programme in Japan do not exist separately. Instead, each item significantly interacts with one another to achieve capacity development effectively. As has been discussed, in-house training and on-the-job training are inseparable. The efficacy of in-house training will be recognised only when the contents of in-house training are leveraged for company diagnosis and guidance. Thus in-house training empowers the KU members for the next training. In other words, in-house training and on-the-job training are intertwined, creating synergistic effects.

Acquisition of a technique can be compared to language learning, which requires careful reading of reference materials, intensive listening to instructors and verbal information, verbal and writing outputs, output corrections made by instructors and repetitive practice. A careful examination of the KU capacity development efforts shows evidently that they cover a complete set of factors required in language learning: participants carefully read reference materials through self-learning activities; they intensively listened to lectures and verbal information in on-the-job training and training programmes in Japan; and they experienced verbal output through in-house training and company visits. The most noteworthy factor among all is to report assignments at each milestone. The combination of these factors was very effective for participants to absorb knowledge from all the KU capacity development opportunities in an efficient way. Writing company visit reports particularly requires considerably a high-level capacity including technical knowledge to properly assess companies through observations, communication skills to draw desired information from interviewees and compassion to precisely understand what was told. The KU members mastered KAIZEN knowledge within a year through their continuous efforts through report writing, and upgraded their skills in explaining KAIZEN activities without hesitation during company visits.

It should be emphasised that the KAIZEN guidance's standardised and unified methodology and its manual had significant impact on the KU's capacity development. The KAIZEN guidance methodology that was uniformly applied to all the sub-sectors made the KU members' learning process efficient. The manual solidified the impact of the KAIZEN guidance methodology. In regards to the manual, the early draft versions were put to trial use by the KU members for the purpose of testing of the draft manual. They were used in conjunction with the actual guidance sessions as well as in the in-house training context. The draft manual reviewed in this way provided the KU members with unique opportunities of training.

On the other hand, the audio-visual material did not provide the kind of opportunity of training similar to the manual due to the delay in the production. Nevertheless, the KU members proactively collaborated with the JICA study team in providing guidance to the audio-visual production contractor. This even included assisting the script writing for a roll about how to conduct QC Circle activity. The fact that the KU members exhibited their ability to guide a third-party video production company turned out to be an additional indicator of the success of basic KAIZEN consulting capabilities.

It was observed that KU members' knowledge and judgment improved each time they completed an activity. Though some examples were already cited in the foregoing sections, the fact that the KU

members take over a significant portion of the instructor roles in the guidance activities is particularly worthwhile to note. In on-site guidance sessions regarding QCC activities during the second group guidance, the KU members proved themselves to be effective instructors as they became the primary providers of explanations to QCC leaders, QCC members and the KAIZEN core team who were much larger audience than in the pre-QCC guidance sessions when the KAIZEN core team was the primary audience. The KU members were confident and enthusiastic in responding to the expanded audience where Amharic, not English, is the sole communication language. This led to a momentum build-up in the KAIZEN activities both on the part of the company and KU. Shifting in the leader role in the KAIZEN guidance from the JICA team members to the KU members has taken place spontaneously.

In conclusion, the overall arrangements of capacity development for the KU members were very effective with the combination of the training programmes in Japan and training opportunities in the pilot project's activities. The table below shows Draft Matrix on the Stratification of KAIZEN Professionals contained in the KAIZEN manual. The matrix includes five levels of KAIZEN professionals from Level I (Junior KAIZEN Consultant*)* up to Level V (Lead KAIZEN Consultant*)*. It was a fair observation that the KU members had been at a level before Level I at the very beginning of the pilot project of this study. It is fair to note, as of the end of December 2010, that they reached at least the Level II (Assistant KAIZEN Consultant) while a few members reached the Level III (KAIZEN Consultant). After the implementation of the special guidance programme done independently by the KU members in March – April 2011 (see Additional Notes at the end of this section), about two thirds of the KU members (5 – 6 members) can be graded at Level III. The Level III KAIZEN Consultant is required to be competent in preparing case materials for training exercises and to have industrial / business management knowledge (see the table below for more details). The KU members, who are capable of playing significant roles in the KAIZEN guidance sessions, are now solidly on track to develop themselves towards further higher levels of KAIZEN consultants.

Table-37: Draft Matrix on Stratification of KAIZEN Professionals

Level	Competence	Level of Knowledge and Skills	Assignment
I	Competent to conduct KAIZEN activities for yourself	- fresh person with no experiences - acquired basic knowledge and skills on TQM/QCC/5S/QC seven tools - competent to make at least two case analysis	- Junior KAIZEN Consultant
II	Competent to guide KAIZEN activities	- 2-year experience - acquired advanced and applied knowledge and skills on TQM/QCC/5S/QC seven tools - competent to present at least 5 case studies of KAIZEN for training purpose.	- Assistant KAIZEN Consultant
III	Competent to provide consultancy services on KAIZEN	- 4-year experience - acquired relevant knowledge and skills for KAIZEN in addition to TQM/QCC/5S/QC seven tools - acquired other knowledge and skills on industrial business engineering (financial management, human resource management etc.) - competent to prepare case materials for	- KAIZEN Consultant

		training exercises - Experiences of consultancy services in KAIZEN for at least 5 companies by him/herself in 2-year service	
IV	Competent to provide consultancy services on KAIZEN	- 6-year experience - Including all of above - Experiences of consultancy services in KAIZEN for 15 companies by him/herself in 4-year service.	- Senior KAIZEN Consultant
V	Competent to provide consultancy services on KAIZEN	- 8-year and more experiences - Including all of above - Experiences of consultancy services in KAIZEN for at least 30 companies by him/herself in 6-year service	- Lead KAIZEN Consultant

Source: JICA study team

Additional Notes on capacity development impact of KU's independent KAIZEN guidance programme in March – April 2011

Prior to the completion of the Study, KU conducted a special supplementary KAIZEN guidance programme for one of the pilot companies. The special programme was implemented to help the company enhance its KAIZEN self-organisation and at the same time to allow the KU members to independently execute a full-blown guidance programme, albeit on a small scale. Six members of KU participated in the guidance programme that took place in three model workplaces that the company management selected. The programme was conducted in the following format, starting from the middle of March 2011 and completed in the latter half of April 2011.

After completing the programme activity, the JICA study team and the KU members revisited the company in early May to review the programme results. It was confirmed that the company's 5S activity restarted and the workplace environment significantly improved. The company's supervisor stated that while they had been engaged in QCC activity, their lack of 5S activity had limited their achievement of problem solving. Now with 5S in place, their effort of elimination of waste progresses resulting in improved operational efficiency. They are well aware of the importance of sustained 5S activity. One of their workers mentioned that 5S made their work easier and safer, and that they regarded the activity level as only 50% and they would like to try many more ideas in their activity.

The above clearly indicates that KU's guidance which was conducted independently of the JICA team members was very effective. Through the experience of the guidance implementation, the capacity level of the KU members as consultants further improved as mentioned in the previous page. In addition, the KU members fully utilised the KAIZEN manual throughout the guidance process to achieve the above results. While the effectiveness of the manual had been tested through the pilot project, KU's success of the guidance in response to the company's situation demonstrates the manual's effectiveness in its application to specific situations in medium / large companies.

Table-38: Supplementary KAIZEN Guidance Programme

Time	Activity
14, Mar. 2011 Monday	**Morning Programme (9:30 am to 12:00 PM)**
	Introduction & Opening remark
	Objective of the programme
	Lecture on purpose of standardization of work environment and Standardisation of Operation
	Discussion
	Afternoon programme (1:30 PM to 3:30 PM)
	Steps to implement 5S Recognition of Current condition of three workplaces with respective teams of the selected workplaces.
	End of session of the day one
15, Mar. 2011 Tuesday	**Morning Programme (9:30 am to 12:00 PM)**
	Revision on the previous day session and discussion on issues raised
	Lecture on Sort purpose & practical procedure
	Table top exercise (Sort Exercise Cards)
	Discussion
	Afternoon programme (1:30 PM to 3:30 PM)
	Practice **Sort** in the workplace, importance of setting rules and draw layout chart with respective team.
	End of session of the day one
16, Mar. 2011 Wednesday	**Morning Programme (9:30 am to 12:00 PM)**
	Revision on the previous day session and discussion on issues raised
	Lecture on purpose & practical procedures of Set in Order
	Discussion
	Afternoon programme (1:30 PM to 3:30 PM)
	Practice **Set in order** in the workplace, recognition of operation efficiency and reduce non value added activities with respective team
	End of session of the day three
17, Mar. 2011 Thursday	**Morning Programme (9:30 am to 12:00 PM)**
	Revision on the previous day session and discussion on issues raised
	Lecture on purpose & practical procedures of shine
	Discussion
	Afternoon programme (1:30 PM to 3:30 PM)
	Practice **Shine** in the workplace, understanding importance of inspection make inspection check list, Problem control card and shine activity plan for work place with respective team
	End of session of the day four
18, Mar. 2011 Friday	**Morning Programme (9:30 am to 12:00 PM)**
	Summarise implementation result report
	Preparation of self activity plan by each team
	Discussion
	Afternoon programme (1:30 PM to 3:30 PM)
	Presentation of the plan prepared in the morning
	Discuss on difference among each team
	Based on the result establish rules as company standard.
	Getting on consensus on self activity plan with KU
	End of session of the day five

Time	Activity
31, Mar. 2011 **1, Apr. 2011**	**Follow up Visit**
	3S activities and patrol
	3S activity as daily regular activity
04, Apr. 2011 **05, Apr. 2011**	**Supplementary Guidance**
	standard operation sheet
	Elimination of MUDA

Source: JICA study team and KU

4.3 Lessons from Capacity Development for KU Members

1) The standardised uniform KAIZEN guidance

In the process of the pilot project of this Study, one of the most distinct features that made the efficient technology transfer to KU possible is the establishment of the standardised uniform programme of KAIZEN guidance which was structured with systematised coherency. This was based on the early lessons learnt from the findings of the initial stage of the pilot project. It brought significant benefits not only in the guidance activities with the pilot companies but, as expected, also in the capacity development of KU. In the perspective of the individual KU member, the basic methods and skills required in the standardised KAIZEN guidance presented with clarity were much easier to master. Also in the team perspective, the common guidance methodology applied to all the sectors made it easy for all the KU members to share their experiences and learn from each other across their sector teams.

In the pilot project's sequential implementation schedule of the two groups, the standardised uniform guidance approach provided the KU members with the same exercise opportunities twice in different test grounds. There were trials and errors in the guidance implementation for the first group, and then the implementation for the second group became much smoother. This whole process created great learning opportunities for the KU members.

In conclusion, the standardised approach in the KAIZEN guidance methodology should be maintained going forward. This approach makes training of trainers more efficient. The combination of the standardised guidance method and the actual company guidance in more than one groups conducted in sequence creates excellent opportunities for training for the trainee consultants.

2) The manual

The manual draft that described the standardised methods and programme of the KAIZEN guidance was copied and shared among all the KU members from the time the initial zero draft took shape in the early part of the JICA team's fourth study period (September – December 2010). This contributed greatly to the learning process of the KU members by thoroughly reading and digesting the contents of the manual. This included the following. (1) In the KAIEN guidance seminars and company visits from October, the manual draft became a handbook that the KU

members could use throughout the guidance process. (2) The KU members did the practice presentation sessions as part of the in-house training based on the training materials included in the manual. (3) The KU members provided the JICA study team with a number of comments for improvement of the manual draft.

The manual completed in this Study is a guidance manual targeted to medium / large companies in the 5 sub-sectors of the pilot project. The manual therefore will be required to be customised when a KAIZEN guidance programme is targeted to different areas, such as different enterprise size and different industrial sub-sector.

In the dissemination phase of KAIZEN in Ethiopia, it is recommended that: the manual should continue to be developed by customisation according to the target sector's unique situations maintaining the coherency of the guidance methodology. The development of the manual in this way will be an essential component in the future endeavours of the core KAIZEN consultant human resources development. Trainee consultants will always benefit from having a well-structured and standardised manual. They also will benefit greatly from participating in the process of customisation of the manual as described above.

3) Accumulation of independent guidance experiences

During the pilot project of this Study, there were many occasions where the KU members independently conducted company visits for on-site guidance when the JICA team was not present in Ethiopia. The first series of the independent guidance took place during the JICA team's absence in late March through June 2010 (between the JICA team's 3rd and 4th study periods in Ethiopia). With the impact of the training in Japan and the experiences gained from the independent guidance in the same period, it was apparent in the subsequent period that the synergistic effect of the two events resulted in significant advancement of the KU members' capability. Furthermore, in September 2010 and in January 2011 (between the 3rd and 4th and between the 4th and 5th study periods in Ethiopia), KU's independent guidance covered guidance activities and company information gathering activities. During the last JICA team absence in March – April 2011 (between the 5th and 6th study periods), after identifying one company as a model case, KU members formulated and implemented a special KAIZEN guidance programme for the company. This special guidance programme was structured in accordance with the steps of the KAIZEN guidance of the manual. This was the first complete guidance programme that KU independently engaged themselves. (For details of this special guidance programme, see the last section of 3.2.5.)

It is recommended that experiences in such independent guidance activities be repeated many times to further develop the capacity of the KU members. Accumulation of such experiences of stand-alone guidance is a vital element in the consultant training.

4) Self-learning activities

KU members were highly interested in self-learning and many of them worked hard, but their

learning methods may not have been very consistent. And yet, once in-house training started and KU members were assigned to their tasks under the rotating presenter system, they became enthusiastic about studying the subject for which they were responsible. This method was initially applied to 5Ss training. Later, the training was conducted according to the manual content of the seminar sessions. Such a rotating presenter system promoted self-learning, greatly facilitating the learning process of the KU members.

Self-learning was expected to supplement the in-house training greatly because of its flexibility in scheduling. In reality, however, there were limitations in three areas. (1) Study materials for self-learning were limited. Main access to study materials was the use of the project office's library books in English for one, and the use of the internet for the other. The availability of the both was in effect limited to the project office work-hour in which the KU member could work. (2) Being staff members of MOI, the KU members had work such as government reports related to KAIZEN. (3) Attendance at the project office of the KU members was not always full day.

Despite the difficulties encountered, it should be emphasised that self-learning by the KU members was an important factor for their acquisition of capabilities for the KAIZEN guidance activities in such a short period of time. It should also be noted here also that self-learning - its practice, attitude and mind-set - is one of the important features of KAIZEN. It is recommended that self-learning should continue to be emphasised as a critical element of capacity development of future KAIZEN consultant human resources.

Chapter 5: KAIZEN Dissemination Plan

5.1 Introduction

5.1.1 Background

As mentioned earlier, the Study was implemented in substantial relationship with the policy dialogue through the High-Level Forum on Industrial Development (HLF), which has been undertaken with the assistance of JICA. The HLF has actively involved relevant academicians from the National Graduate Institute for Policy Studies (GRIPS) from Japan as well as high officials and academician from Ethiopia. The HLF served the purpose of policy dialogues on industrial development to identify relevant issues and exchange their views and experiences between both governments of Ethiopia and Japan. These issues and views eventually included the one related to KAIZEN in reflection of the growing interests in KAIZEN in Ethiopia. A brief summary on the HLFs in relation with KAIZEN is presented below.

In the fourth HLF in March 2010, the issue on institutionalisation of KAIZEN was for the first time raised by Ethiopian officials in relation to the framework of the Study. Based on actual results from the pilot project, the Study was intended to formulate a national plan on how to disseminate KAIZEN into manufacturing companies outside of the pilot companies. Since the initial stage of the Study, the issue of the mechanism of dissemination of KAIZEN has already become a growing concern not only in terms of the issue of sustainability of KAIZEN, but also in the context of the formulation of the next five-year plan, i.e., Growth and Transformation Plan (GTP). In this context, an idea of the establishment of an institute tentatively called Ethiopian KAIZEN Institute (EKI) was suggested in March 2010. The idea was presented to JICA and GRIPS in Japan, and two sessions of dialogues through TV conference were held in May and June respectively, while reaching to a consensus that the EKI institutionalisation plan document be written with a professional help, and resulting in the idea of dispatching the EKI expert. Following this development, in the fifth HLF in July 2010, a study tour on country-experiences in institutionalisation of KAIZEN was suggested, and as a result, the study tour to Singapore was undertaken by JICA. For this, the Director of University-Industry Partnership Program of Addis Ababa University was invited to conduct jointly with the GRIPS the reconnaissance study on experiences of Standards, Productivity and Innovation Board (SPRING) of Singapore in productivity improvement. The sixth HLF, which was held in October 2010, included the presentation on the findings from the study tour to Singapore, along with the presentation of the industrial development part of the new five year development plan 'Growth and Transformation Plan'. In this Forum, the formulation of national productivity movement, which was highlighted as one of the results from the study tour to Singapore as a live case, was suggested for inculcating KAIZEN into the fabric of Ethiopian society.

5.1.2 Three Components of Ethiopian KAIZEN National Plan

The abovementioned the policy dialogues in the series of HLFs eventually elaborated the scope of the KAIZEN national plan by classifying its relevant components into three: 1) institutionalisation; 2) dissemination and 3) national movement. General idea of each component is broadly described as follows;

1) Institutionalisation: Central among pre-requisites for any innovative programmes is the presence of a unit capable of sustaining such developmental programmes. This component is chiefly concerned with the issue of sustainability of KAIZEN activities that are continually carried out at the workplace level and at the company level as well as the regional and national level. For doing so, necessary organisational arrangement, human resource development and other necessary aspects for the formulation of national institutional framework of KAIZEN required to ensure sustainability of KAIZEN as well as dissemination of KAIZEN are discussed within this component.

2) Dissemination: In this component, two main issues are chiefly discussed. One is techniques such as training programmes, the use of the manual as well as the audio-visual materials, while the other is approaches to manufacturing companies. The KAIZEN guidance is the methodology of promoting KAIZEN in the Ethiopian environment which facilitates Ethiopian manufacturing companies with their adaptation and sustained practice of KAIZEN. This methodology has been developed and documented as the KAIZEN manual and will provide the basis for the technical side of the dissemination activities. On the other hand, approaches to manufacturing companies are closely concerned with industrial development policy directives and priority. Medium and large companies shall be approached by the Ministry of Industry, while micro and small enterprises are reached through the channel of TVET.

3) National movement: In reference to experiences in other countries on quality and productivity improvement, one can understand that the change of popular mind-setting is crucial. Such a change requires a national movement that enables an instrument of KAIZEN widespread to as many as social actors. Such a national movement has also been practiced in East Asian and African countries. The importance of a national movement based on experiences in other countries shall be discussed in this component as reference information for Ethiopia.

The above three components are to be integrated to form the KAIZEN National Plan. Institutionalisation establishes the centre of KAIZEN activities to disseminate instruments of KAIZEN into manufacturing companies with the support of enabling environment through a national movement.

5.1.3 Focused Component in this Report

Among the abovementioned three components of Ethiopia KAIZEN National Plan, this report focuses

only on the dissemination component, while the other two components, i.e., the national institutional framework of KAIZEN and the national movement of KAIZEN, shall be developed based on the detailed study results as well as intensive and extensive research results respectively.

This report consists of three main blocks that are (i) to elaborate relevant elements that provide general ideas on how to formulate KAIZEN dissemination plan, (ii) to outline the main contents of proposed KAIZEN dissemination plan; and (iii) to present proposed plan of actions in a tentative implementation schedule.

5.2 Relevant Elements for the Formulation of KAIZEN dissemination plan

In order to formulate KAIZEN Dissemination Plan, at least, the following three elements are taken into consideration:

1) Synchronisation with national development framework and implementation strategy
2) Customisation of the KAIZEN manual and its organisation
3) Formulation of modalities for approaching to numerous companies

5.2.1 Synchronisation with National Development Framework and Implementation Strategy

1) GTP as guiding framework

The formulation of any national development plans requires a certain directive officially set by the country. In Ethiopia, the five-year development plan of the GTP provides with a guiding framework of national development plan. In this regard, synchronisation with the framework and contents of the GTP is crucial. Based on the evidence as well as projections on economic growth, the GTP envisages at least maintaining an average GDP growth rate at 11.2% in order to meet Millennium Development Goals (MDGs) by 2015 as base scenario. For the attainment of the goal, the industrial sector and the agricultural sector are highly emphasised as driving forces and the industrial sector is intended to take up a leading position in the overall national economy at the end of GTP implementation by intensifying sector's contribution to employment generation, import substitution and foreign exchange earnings. The GTP continues to emphasise on the enhancement of implementing capacity of all the sectors, especially of industrial development sector. It is crucial to pursue this enhancement through the mobilisation of new management tools appropriate for the change of the popular mind-setting. KAIZEN has been recognised as one of the instruments and expected to serve for this objective.

Cognizant of this, KAIZEN dissemination plan is formulated for the same time horizon of the GTP, that is five-year term from September 2010 to August 2015.

2) Two highlighted strategies in relation with KAIZEN's dissemination

As described in Chapter 2, the GTP articulates two main aspects of industrial development that are (1) MSEs development and (2) medium and large industry development. In order to strategically accelerate the pace of industrial development, currently two main strategies are formulated as

substantial components of the GTP implementation. Two components of the GTP are;

(i)	MSEs Development Implementation Strategy
(ii)	Strategy for Development of Medium Industries producing construction sector material

Table-39 broadly indicates the following elements; (a) national institutional arrangement: (b) main potential disseminator (who disseminate); (c) broad category of end target (to whom KAIZEN is disseminated); (d) main sub-sectors of industries (which products are to be prioritised and where dissemination should be prioritised).

Table-39: Two Main Strategies in the Framework of GTP in relation to KAIZEN Dissemination

No.	National Strategy	Main Institutional Arrangement	Main Disseminators	End Target	Main Sub-sectors of industried
1	MSEs Development Implementation Strategy	National Council Chaired by MoUDC Co-chaired by MoI Members including National Bank with regional, zonal, woreda and Kebele council	TVET Teacher (Industrial Extension Officer)	MSEs	All the sub-sectors in five (5) main groups; manufacturing, agri-business; construction; trade, and service.
2	Strategy for Development of Medium Industries Producing Construction Sector Material	Coordinated by MoI Members including MoUDC, Ministry of Water and Energy	MoI's experts (KAIZEN Consultant)	Medium Companies	Supporting industries for construction mainly consisting of cement industry, metal industry and electric accessories plastic, ceramic and related industries in import substitution strategic thoughts; Domestic-resources based Industries (Agro-processing; leather* and textitle*)

Source: JICA study team

As indicated in the Table-39, it is understood from the above strategies that TVET teachers are designated to be Industrial Extension Officers who are responsible for providing MSEs with management consultancy services including KAIZEN, while experts of MOI are mandated to discharge their duties to do the same for medium and large companies.

3) Other relevant national industrial development implementation strategies and related ideas

In addition to the above two strategies, an export promotion national plan continues to serve as an integral part of the GTP to increase foreign currency earnings. Yet it is officially decided that benchmarking method is firstly applied to these medium and large companies categorised into two sub-sectors of industry: leather sub-sector and textile sub-sector. After the benchmarking is completed, KAIZEN would be implemented to ensure continuity of quality and productivity improvement gained through benchmarking.

With regard to the increase in foreign currency earnings, a constant attention is paid to development of tourism sub-sector of industry. In the GTP, tourism development is identified as one of cross-cutting sectors, and its competitiveness in the international market is emphasised through the improvement of standards of tourist services and strengthening cooperation among actors participating in tourism

development through supply-chain network. In order to realise customer satisfaction, it is in serious consideration that tourism industry will be addressed by KAIZEN.

5.2.2 Customisation of KAIZEN Manual and its Organisation

1) Necessity of Customised Manual for certain sectors
KAIZEN dissemination requires customised manual for certain sectors.

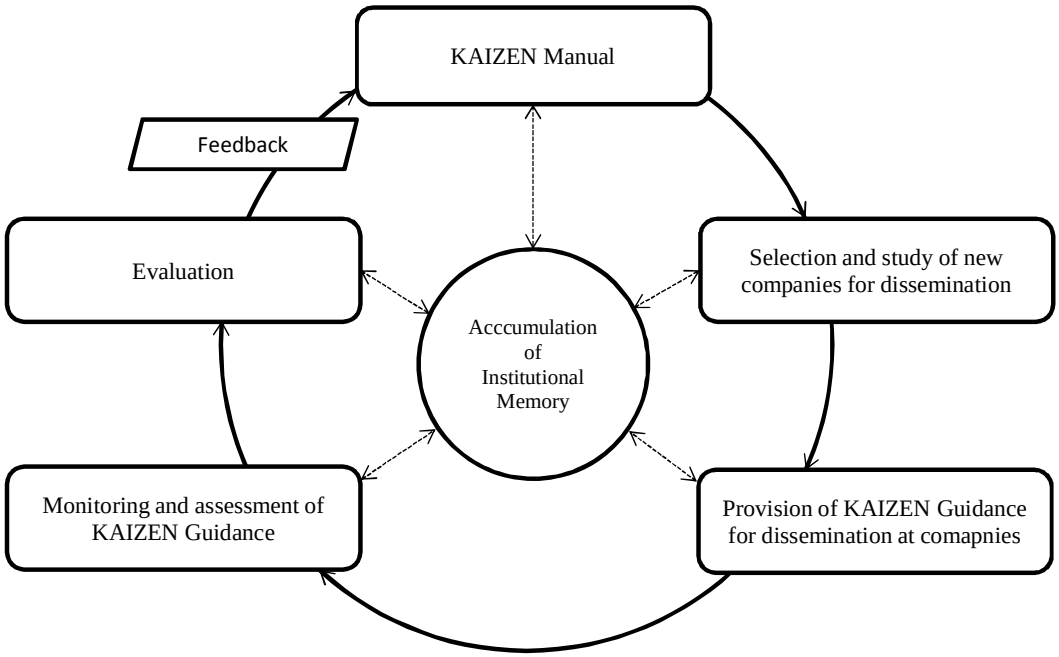
The present KAIZEN manual is the first edition of its kind which was developed by the Study based on the pilot companies categorised into medium and large companies in five sub-sectors. Within this scope, applicability and effectiveness of the manual were just understood. On the other hand, in the implementation of the GTP for the next five years, KAIZEN is addressed to different types of companies including micro and small enterprises as well as different sub-sectors of medium and large companies.

For the purpose of nation-wide dissemination, the manual needs to be customised through several discussions. Does different size of business management like micro and small enterprises affect the contents of the present manual or suggest any modification of the contents and methodology of the KAIZEN guidance? For instance, the manual was designed to conduct training seminars for top-management and middle managers for four day. Yet it is not known how many days of training seminars are suitable for owners or managers of micro and small enterprises. Or does different types of production, i.e., 'make to order' type or 'make to stock' type, 'job-shop type' or 'flow assembling type', cause the necessity of modification of the manual? These kinds of inquiries should be answered.

On the other hand, when companies would move into a self-practicing KAIZEN phase, it is anticipated that companies may realise different needs to improve business management skills. For this case, those who provide companies with consultancy services requires various company diagnosis skills including financial analysis skill, inventory control skill, work control skill and so on.

The manual needs to be modified in order to accommodate identified different conditions based on the first edition. This may result at times in an updated edition for enhancing the effectiveness of the manual in KAIZEN dissemination.

2) Enhancement of Operationalization of the Manual
The effective KAIZEN guidance needs the enhancement of operationalization of the manual. For this, it is of vital importance to accumulate experiences in guidance. Such accumulated experiences are expected to be compiled in the form of case studies, and it is crucial to effectively use cases for KAIZEN dissemination. The process of the accumulation of experiences can be made in a cycle as shown in Figure-34



Source: JICA study team

Figure-34: KAIZEN Manual Operationalisation Cycle

The manual shall be upgraded based on feedback from the evaluation of experiences in the KAIZEN guidance. Feedback may include analysis on new findings such as what kinds of elements or conditions of companies could affect effects from the KAIZEN guidance, how one can analyse and understand differences of new targeted companies in comparison with the ones of the pilot medium and large companies in view of inducing KAIZEN guidance effectively, and so on.

In other words KAIZEN consultants or extension officers who provide the KAIZEN guidance need to be continually involved in the process of a cycle to select and study companies for dissemination, implement the KAIZEN guidance at companies and collect necessary information of companies and analyse their conditions, monitor and assess outcomes from the KAIZEN guidance, and evaluate the effectiveness of the guidance method by analysing and identifying elements different from those of the pilot medium and large companies for exploring better approaches to induce KAIZEN in companies effectively. As a result, empirical knowledge on different conditional setting up of the companies in view of continued exploration of better approaches can be ensured in the form of accumulation of experiences in institutional memory.

3) Key experts required for KAIZEN dissemination

Experts equipped with consulting capability for customised application are crucial for KAIZEN dissemination. At the initial stage nine experts, who were assigned for KAIZEN Unit, are expected to take a key role for KAIZEN dissemination. They had experiences in the whole process of the KAIZEN guidance, through which they were equipped with consulting capability of customised

application of the KAIZEN method. The main tasks performed by experts are summarised in Table-40 (For details see Chapter 2, 3 and 4 of the KAIZEN manual).

Table-40: Main Duties and Tasks Performed by Experts

No	Main Duties	Main Tasks	Main Activities	Time required
(1)	Self-preparation	Familiarisation with basic KAIZEN knowledge and process	● Reading and understanding the manual and related materials ● Internalise basic knowledge as much as possible	
(2)	Basic preparation for KAIZEN dissemination at the company level	Basic data preparation	● Preparation of base format ● Collection of necessary data of companies ● Preparation of base data of companies ● Preparation of reconnaissance survey forms ● Finalisation of base data for reconnaissance survey	One month
		Selection of companies	● Establishment of selection criteria ● Conducting reconnaissance survey for collection of necessary data for KAIZEN dissemination ● Analysis data and compilation of findings ● Selection of companies for KAIZEN dissemination	
		Contracting	● Notification of selected companies ● Organisation of a kick-off meeting ● Contracting KAIZEN guidance service agreement	
(3)	Guiding and counselling companies through the KAIZEN Guidance	Organising KAIZEN training seminar on overview of KAIZEN and standardisation of workplace environment and operation	● Assisting selected companies in forming KAIZEN core team ● Making all the necessary administrative arrangements ● Delivering lectures and conducting exercises ● On-going monitoring and collection and analysing of feedback	Three month
		Implementing KAIZEN activities at the company	● Understanding, analysing and identifying issues to be dealt with by using assessment sheet, data provided by companies, etc. ● Assisting selected workplaces in understating standardisation of workplace environment and operations ● Assessing achievements	
		Organising QCC training seminar	● Same as KAIZEN training seminars	
		Organising QCC activities at the company	● Assisting selected workplaces in conducting QCC activities, QC circle presentation, constructing QC story, QCC presentation meeting ● Assessing achievements	
		Preparatory work for company-wide KAIZEN activities	● Assisting selected companies in reviewing and assessing KAIZEN guidance exercise ● Assisting companies in formulating annual schedule of KAIZEN activities with organisational arrangements ● Assessing achievements	
(4)	Monitoring and Assessment	Monitoring and Assessing	● Preparation and revision of monitoring and assessment sheets ● Compilation of all the findings for assessment	
(5)	Compilation of performance report	Evaluation	● Preparation of a report on overall summary of KAIZEN guidance ● Making necessary feedback to the manual and method	

Source: JICA study team

During the Study, the main duties and tasks were performed by the following modalities; one team consisting of three experts on an average could visit five companies in three months[1].

[1] (1) 10 working days per company x 5 companies = 50 working days.
(2) Training Seminar required 6 working days. Four (4) day-session was for Overview and standardisation of workplace environment and operation through 5S in elimination of Muda, while two (2) day-session was for QCC.

A team of KAIZEN consulting team:	three experts in a team
Number of workplace services required:	Around 10 times per company
Operation capacity:	5 companies per team for three months

For mobilising their experiences for KAIZEN dissemination at the company level, the following points should be noted;

- In order to perform the above duties and tasks in a way to ensure accumulation of experiences, experts need to work on a full time basis specialised in KAIZEN.
- At the initial stage, the present nine experts, who were assigned for the KAIZEN Unit, can mobilise their experiences for expansion of KAIZEN dissemination towards medium and large companies in five sub-sectors.
- A huge gap exists between demands and supply. At this moment experts equipped with customised application capability accounted for only nine in comparison with potential demands of more than 2,000 medium and large companies together with numerous micro and small enterprises with their numbers ranging from 43,400 to nearly one million according to CSA's statistics. If only nine experts would be involved in dissemination with the same pace, it would take more than 60 years to reach only the presently existing medium and large companies. One can easily understand the urgent need to increase the number of qualified human resources like the present experts in the KAIZEN Unit. Without human resources development, KAIZEN dissemination may not be feasible.
- Considering the above facts, the present nine experts should serve as the resource persons who can share their experiences with other experts of MOI as well as TVET teachers.

5.2.3 Formulation of Modalities on Approaching Numerous Companies

1) Developing a KAIZEN model company

There are a few conditions to be taken into consideration for the formulation of modality on approaching targeted companies and enterprises. The first factor is feasibility in terms of size of operation. As described earlier, national demand on KAIZEN is huge in comparison with the operation capacity to provide the KAIZEN guidance. To fill the gap between demand and supply, one should formulate such a modality or strategy which should be accountable and transparent. The second factor is relatively weak database planning and management. There is no relevant mechanism for updating the accurate data of companies on a timely basis. Without a relevant mechanism of reliable data, one can face difficulties to formulate a strategy or plan to approach enterprises in a way that is accountable and transparent to the public.

Considering the above situations and furthermore mobilising experiences of the pilot project exercises

(3) As the result from the above, 56 working days in a total were required for 5 companies.
(4) Working day in a month is 20 days on an average.
(5) Thus, it took three months at least for a team to complete the KAIZEN guidance for 5 companies.

that resulted in encouraging outcomes demonstrated by several companies, a modality to develop model-companies is the suggested approach. Through such approach a large number of companies can refer to and learn from the model companies, i.e., the ones that demonstrate best practices after having participated in the guidance. It is also suggested that those companies who are selected to be model companies should take social responsibility to disseminate KAIZEN into their supplier companies. In this way it is expected that the pace of KAIZEN dissemination can be accelerated.

2) Geographical location and clustering companies by products to be considered

According to the CSA Large and Medium Scale Manufacturing Industries Survey (2009), medium and large companies are not equally distributed in terms of geography. Table-41 indicates the distribution of medium and large companies in terms of geography and sub-sectors. Accordingly, 51.21% of medium and large companies are found in Addis Ababa, followed by Oromia Regional State (15.38%), Tigray Regional State (10.81%) and Amhara Regional State (9.42%). In the four regions, 86.82% of the country's medium and large companies are registered. It may be estimated that a geographical distribution of MSEs is in a pattern similar to that of of the medium and large companies. For an effective and efficient dissemination of KAIZEN, geographical locations of companies as well as clustering companies by types of products should be taken into account.

Table-41: Distribution of Medium and Large Companies

No.	Sector classified by MoI	Division No. of ISIC	Major Industry Group	No. of Public and Private Establishments by the respective Regional States (2001.E.F.Y)											
				Tigray	Afar	Amhara	Oromiya	Somali	Benhsh	SNNP	Gambella	Harari	Addis Ababa	Dire Dawa	Total
1	Agro-Process	15	Manufacture of Food Products and Beverages	36	0	45	130	7	2	54	1	7	255	25	562
2	Textile	17	Manufacture of Textile	1	2	4	3	0	0	6	1	0	29	1	47
		18	Manufacture of Wearing Apparel, except fur apparel	1	0	0	5	0	0	0	0	0	34	1	41
			Sub-total of Textile	***38***	***2***	***4***	***8***	***0***	***0***	***6***	***1***	***0***	***63***	***2***	***88***
3	Leather	19	Tanning and dressing of Leather; manufacture of footwear, luggage and handbags	3	0	6	26	0	0	0	0	1	53	0	89
4	Chemical	21-22	Manufacture of Paper, Paper Products and Printing	5	0	4	8	0	0	1	0	3	102	4	127
		24	Manufacture of Chemicals and Chemical Products	2	0	0	16	0	0	1	0	0	55	1	75
		25	Manufacture of Rubber and Plastic Products	2	0	0	22	0	0	1	0	0	61	1	87
		26	Manufacture of other non-metallic products	129	9	109	84	0	0	131	3	20	121	2	608
			Sub-total of Chemical	***138***	***9***	***113***	***130***	***0***	***0***	***134***	***3***	***23***	***339***	***8***	***897***
5	Metal	27	Manufacture of Basic Iron and Steel	4	0	0	0	0	0	0	0	0	13	1	18
		28	Manufacture of Fabricated Metal Products, except Machinery and Equipment	33	0	18	10	0	0	11	0	3	45	0	120
		29	Manufacture of Machinery and Equipment	0	0	0	1	0	0	0	0	0	3	1	5
		34	Manufacture of Motor Vehicles, Trailers and Semi-Trailers	1	0	0	1	0	0	0	0	0	10	0	12
			Sub-total of Metal	***38***	***0***	***18***	***12***	***0***	***0***	***11***	***0***	***3***	***71***	***2***	***155***
6	Others	16	Manufacture of Tobacco Products	0	0	0	0	0	0	0	0	0	1	0	1
		20	Manufacture of wood and products and cork	1	0	2	17	0	0	12	0	0	16	0	48
		36	Manufacture of furniture	29	1	83	41	5	5	92	3	9	89	6	363
Total in number				**247**	**12**	**271**	**364**	**12**	**7**	**309**	**8**	**43**	**887**	**43**	**2,203**
Proportion in %				**11.21**	**0.54**	**12.30**	**16.52**	**0.54**	**0.32**	**14.03**	**0.36**	**1.95**	**40.26**	**1.95**	**100.00**

Source: JICA study team

5.2.4.KAIZEN Education for KAIZEN National Movement

A need for nation-wide KAIZEN dissemination has been continually discussed and expressed by

numerous Ethiopian government officials with a sense of urgency in combination with a notion that 'quality is culture and setting of social minds'. This perspective expressed in the series of HLFs was reiterated by the representative of academic institutions and pilot companies in National KAIZEN Seminar held on 3 May 2011.

Comments expressed in KAIZEN National Seminar are summarised as follows;

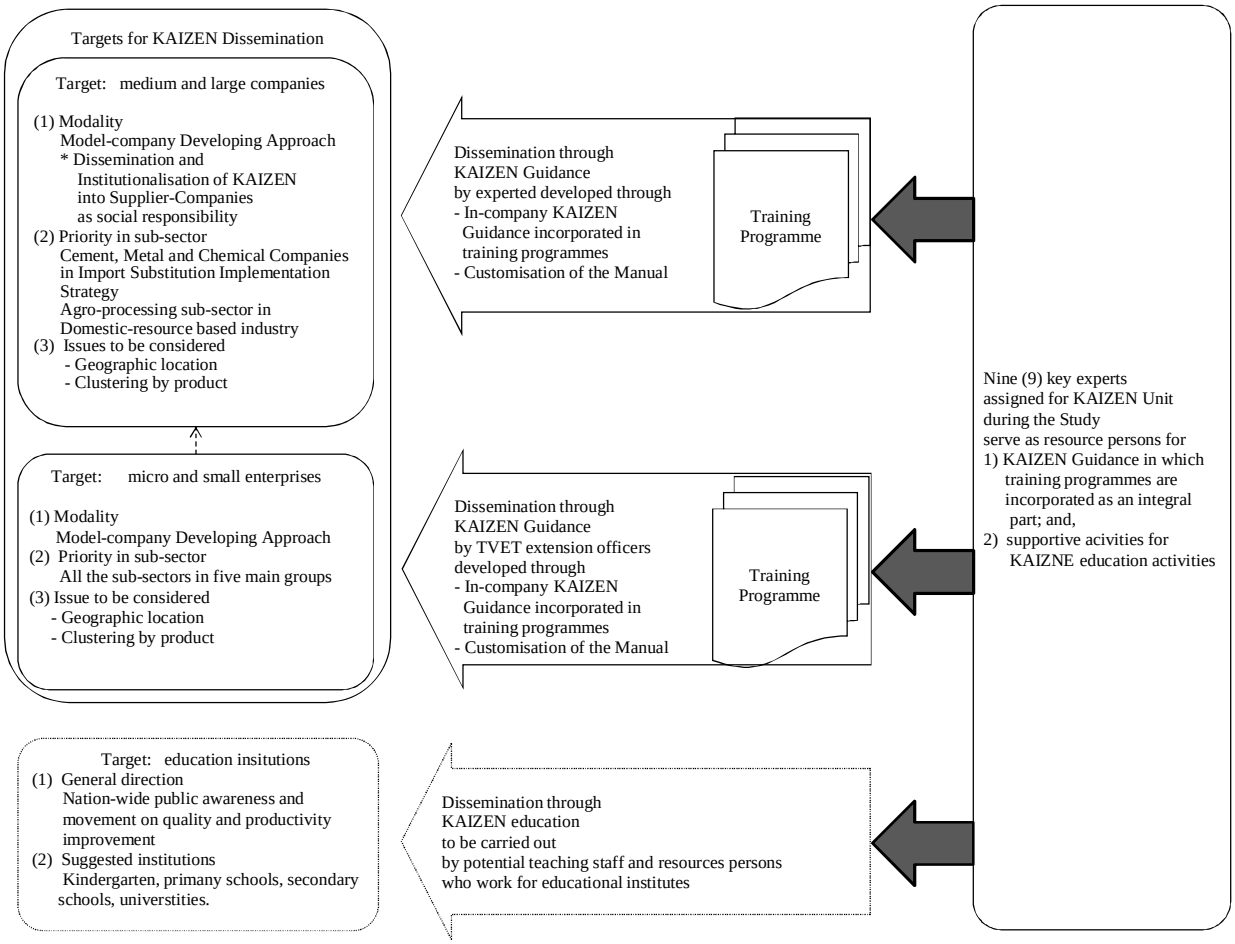
- KAIZEN should not be confined to the scopes of workplaces and manufacturing companies.
- Quality conscious attitudes are to be created and enhanced not only by people working in the industrial sector but also by people working in educational institutions starting from kindergarten, primary and secondary schools to universities.
- Genuine participation in the creation of quality conscious minds is vitally required in two dimensions; (i) within manufacturing companies involving top-management, middle managers and front-line employees; and (ii) in combined and cooperative efforts by government officials, academicians, top-management of private sectors, labour unions' people. Particularly, active involvement of front-line employees is crucial.
- Continued and endless activities of KAIZEN is, in essence, interpreted as a nation-wide movement, since KAIZEN touches upon changes of working attitudes which form social norms as working culture.
- Based on the outcomes from the pilot KAIZEN activities, it was expressed by representatives of the pilot companies that survival of manufacturing companies depends upon labour forces equipped with quality conscious minds. Such required labour forces should not be confined into the present business management for current improvement but should be expanded into the future management for growth. In this regard it was emphasised that development of working attitudes towards productivity in education institutions starting from the kindergarten level is crucial in order to secure the future human resources for manufacturing companies.
- It was suggested that active involvement of education institutions in KAIZEN or quality and productivity was expected to be prepared in consistence with strategic thoughts on institutionalisation that classifies it into three stages; (i) awareness stage, (ii) action stage; and (iii) ownership stage.

Taking the above into consideration, during the next five years, education institutions are expected to play an important role to prepare young generations for quality and productivity movement of the nation.

5.2.5. Basic Framework for KAIZEN Dissemination

Figure-35 is presented to conceptualise the above discussions in the form of illustrative framework. The framework was attempted to illustrate KAIZEN dissemination approach to medium and large companies by experts and to micro and small enterprises by TVET extension officers, both of whom are to be developed through the in-company guidance to be incorporated in their training programmes

as well as in creation of customised manual for new sectors where applicable.



Source: JICA study team

Figure-35: Basic KAIZEN Dissemination Approach to Companies

5.3 Proposed KAIZEN Dissemination Plan

5.3.1 Outline of the Main Contents

The proposed plan for KAIZEN dissemination is formulated through three distinct but interrelated components that are; (1) human resource development; (2) information dissemination; and (3) enabling environment for KAIZEN dissemination.

Human resource development component is chiefly concerned with training programmes. An immediate question may be raised on how training programmes can relate to KAIZEN dissemination to target companies. Two of the training programmes in particular are designed to involve in-company KAIZEN guidance sessions, which are equivalent to KAIZEN consultancy services, through which not only MOI's experts or TVET extension officers but also top-management, middle managers and front-line employees of companies shall be exposed to actual self-organising process of KAIZEN as

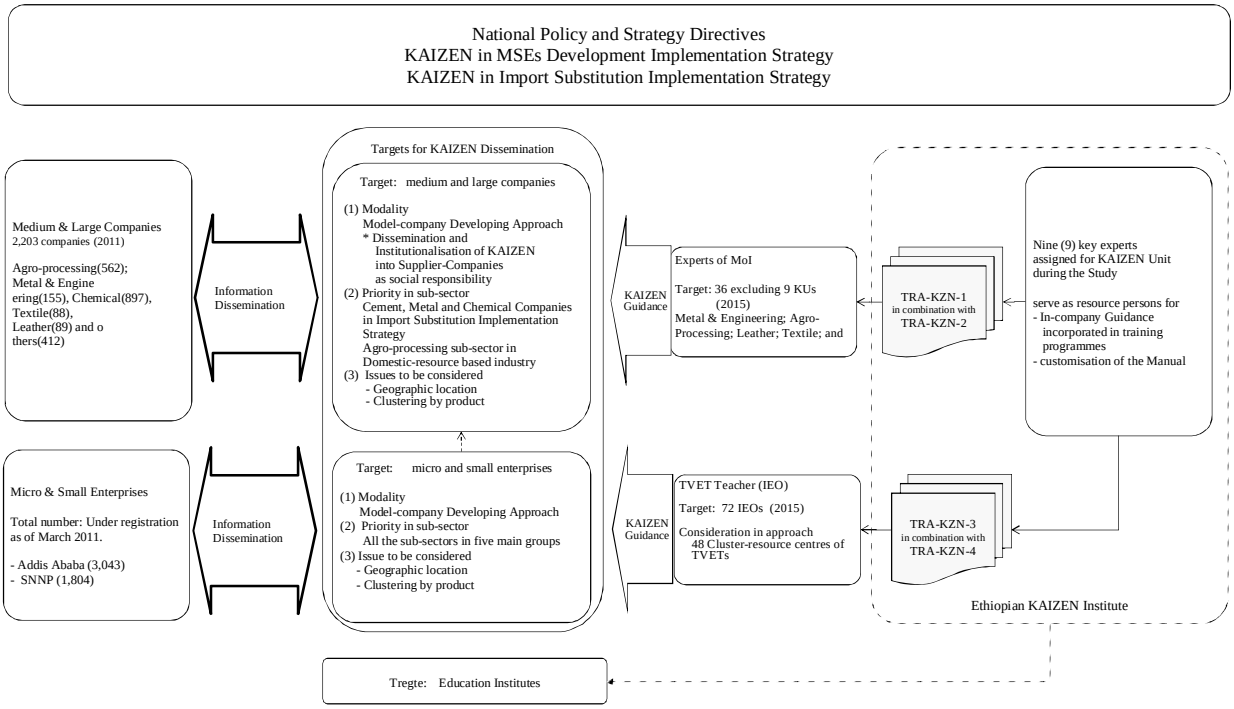
learning process. Detailed features of the training programmes that can serve for the KAIZEN dissemination purpose are touched upon in human resource development component (See section 5.3.2). In short, during the plan period, 36 new MOI's experts and 72 TVET teachers are to be developed as driving forces for KAIZEN dissemination, while 120 medium and large companies and 180 micro and small enterprises are planned to be provided with KAIZEN consultancy services in their actual self-organising process of KAIZEN. Out of these targeted companies, it is expected that many remarkable model companies bearing outstanding outcomes from KAIZEN are developed, who can serve as live reference cases for other companies and as dissemination agents for companies connected in their supply-chain.

Information dissemination component is self-explanatory with several relevant discussions on how to publicise KAIZEN effectively and efficiently; how to diffuse actual outcomes and impacts of KAIZEN to as many other companies as possible; how to create public awareness on KAIZEN, and so on. In line with this, information dissemination component touches on creating a specific annual programme on KAIZEN (KAIZEN month), establishing KAIZEN award and social networking through the KAIZEN website. Section 5.3.3 deals with detailed discussions.

A component on enabling environment for KAIZEN dissemination touches upon relevant issues and discussions relating to further institutionalisation of KAIZEN, which are believed to facilitate a process for KAIZEN to take root in Ethiopia in general as well as in a company in particular. These discussions include on how to foster quality-conscious mind-set, keeping competitive functioning and organising national consultative mechanisms. Section 5.3.4 deals with detailed discussions.

At the end a proposed plan of actions is presented to provide a tentative implementation schedule.

In order to outline the main contents, Figure-36 is attempted to indicate a framework for KAIZEN dissemination.



Source: JICA study team

Figure-36: Illustrative Diagram on a Framework for KAIZEN Dissemination

5.3.2 Human Resource Development Component

Human resource development component consists of three suggested programmes; (1) proposed training programmes; (2) national examination for standardisation of KAIZEN consultancy; and (3) preparation of additional training programmes.

(1) Proposed KAIZEN Training Programmes

Based on experiences through the implementation of the Study, Table-42 shows the proposed training programmes for dissemination of KAIZEN through customisation of the KAIZEN manual and Audio-visual Guides.

Table-42: List of Proposed Training Programmes

Target in Company	No.	Main Training Programme for Dissemination of KAIZEN Guidance	Main Target		
			MOI Experts	TVET Teachers	Company Top-mgt
Medium and large	TRA-KZN-1	Comprehensive and Practical Training Programme in KAIZEN for Medium and Large Companies (MLCs)	●		
	TRA-KZN-2	Exercise-oriented Training Programme in KAIZEN for MLCs	●		
MSEs	TRA-KZN-3	Comprehensive and Practical Training Programme in KAIZEN for MSEs		●	
	TRA-KZN-4	Exercise-oriented Training Programme for MSEs		●	
-	TRA-KZN-5	Introductory Training Workshop on KAIZEN		○	●

Note:

1) Periodical performance assessment on the proposed training programmes shall be conducted. As a result, necessary revision of training programmes shall be made.

Source: JICA study team

A few attributes of the respective training programmes are presented in Table-43.

Table-43: Main Attributes of the Respective Training Programmes

No.	Duration	Main Attributes	Main Purposes	Outline of Course
TRA-KZN-1	3 months x 2 (6 months in total)	・Comprehensive on Workplace KAIZEN ・Practical ・Involvement of company	1) To provide a venue for developing a model company to be equipped with KAIZEN corporate culture 2) To develop KAIZEN consultants	See the subsequent tables
TRA-KZN-2	9 working days	・Comprehensive on Workplace KAIZEN ・Practical	1) To provide participants with relevant operation knowledge on KAIZEN 2) To develop KAIZEN consultants	
TRA-KZN-3	1.5 months	・5S specific ・Practical ・Involvement of company	1) To provide a venue for developing a model MSE to be equipped with KAIZEN starters(5S: standardisation of workplace environments) 2) To develop TVET industrial extension officers	
TRA-KZN-4	4 working days	・5S specific ・Practical	1) To provide participants with relevant operation knowledge on KAIZEN starters (5S: standardisation of workplace environments) 2) To develop TVET industrial extension officers	
TRA-KZN-5	2 working days	・Basic ・Practical	1) To provide participants with basic session on KAIZEN 2) To expose busy top-management or managers or employees to KAIZEN basic exercises	

Source: JICA Study Team

Two aspects of attributes should be noted herewith.

(i) Two training programmes, i.e., TRA-KZN-1 and TRA-KZN-3, are intended to involve the in-company KAIZEN guidance through which not only MOI's experts but also top-management, middle managers and employees of a company shall be exposed to actual self-organising process of KAIZEN as learning process. For a long-term, these courses are expected to contribute towards building up a large pool of model companies with KAIZEN corporate culture.

(ii) Training programmes for TVET teachers are intended to focus on KAIZEN starters of 5S for the coming five-year.

An outline of each proposed training programme is presented in the subsequent tables.

Table-44: TRA-KZN-01:
Outline of Comprehensive and Practical Training Programme in KAIZEN for Medium and Large Companies

Mode	Day	Guidance Step	Session	Agenda Items
Classroom Session	1	I. Understanding Overview of KAIZEN	Overview of KAIZEN	- The necessity of KAIZEN activities - Purpose of the Company - Basic concepts of KAIZEN activities - How to apply KAIZEN into your company - JIDOKA: Elimination of Abnormality - How to approach to remove waste - Standard operation - Preview of 5S: the starter of KAIZEN activities
	2	II. Understanding Standardisation of	5S	- Introduction to 5S - Group Work on 5S through card exercise - 5S Planning and Implementation

	3	Workplace & Operation	Operation Standard & Time Study	- Standard Operation Sheet (S.O.S) - Group work on S.O.S for model-car assembling - Time Study with exercise - Standard Operation Distribution Sheet
	4		Elimination of Waste (MUDA)	- Various aspects of KAIZEN - Group Work on MUDA elimination - PDCA - Stratification into 7 MUDAs - Problem solution planning: Exercise and presentation - Seven keys to solve problems - Seven steps of KAIZEN procedures
	Interval			
In-company Guidance	5	III. Implementing KAIZEN Activities at the company	Organising 'Sort' activity	- In-company exercises: explanation of KAIZEN; Posters and KAIZEN board; rapid assessment of a model workplace; workflow understanding by layout chart, identification of lists and formulation of criteria for 3S; and instruction of homework
	Interval			
	6		Understanding '3S' activities in Elimination of MUDA	- In-company exercise: follow-up homework; exercise on 3S activities within a scope of waste elimination; explanation of standard operation sheet; explanation of MUDA; and instruction of homework
	Interval			
	7		Standardising Operations at Selected Workplace	- In-company exercise: follow-up homework; execution of MUDA elimination, rapid assessment of a model workplace
	Interval			
Classroom Session	8	IV. Understanding Overview of QCC	How to Organise QC Circles; What is QC Story?	- How to organise QC circles - What is QC story? - Group Work: practice of QC circle activity - Evaluation of QC circle activities
	9		What is QCC Presentation Meeting? How are QC 7 Tools utilised?	- Group work wrap up - QC 7 tools - QC story and QCC presentation meeting - Preview of upcoming company-site guidance
	Interval			
In-company Guidance	10	V. Organising QCC Activities at the Company	Conducting QCC Meeting	- In-company exercise; review and grasp the present condition for identification of appropriate themes; exercise on QCC meeting by using QC story method; and instruction of homework
	Interval			
	11		Conducting QCC Presentation Meeting	- In-company exercise: review on the previous session; exercise of QCC presentation meeting; assessment of QCC activities; and homework
	Interval			
	12	VI. Preparatory work for Company-wide KAIZEN activities	- Follow up better company management - Review K. activities & complement deficiency knowledge if necessary, etc.	- In-company exercise: review the past activities; exercise on formulation of annual schedule of KAIZEN activities and establishment of inter-KAIZEN activities in the company

Source: JICA study team

As indicated, TRA-KZN-1 is designed to be conducted in 12 sessions. However, this does not mean that TRA-KZN-1 may be completed in 12 working days. TRA-KZN-1 is devised by directly applying the same methodology of the KAIZEN guidance conducted during the Study. It should be noted that intervals between sessions are devoted for in-company self-exercise (homework assignments), which is critical for the success of KAIZEN guidance that the company diligently performs homework assignments given at the end of each guidance session. Duration of each interval on an average is one week, yet depending upon conditions of companies interval may be extended for some more time. In

addition to this, to accomplish homework assignments, extra guidance may be needed. Accordingly, TRA-KZN-1 is intended to be undertaken in a three-month period.

TRA-KZN-2 is formulated by modifying presentation sessions and expanding exercise sessions that were practiced as classroom session during the Study.

Table-45: TRA-KZN-02:
Outline of Exercise-oriented Training Programme in KAIZEN for Medium and Large Companies

Mode	Day	Session	Morning Agenda	Afternoon Agenda
Classroom Session	1	I. 5S	5S - Necessity of 5S - Importance of continued and repeated activities of 3S activities	- Group work on sort activity through card exercise without the provision of any condition - Presentation of group works
	2		Sort Activity - Criteria for Sort activity - Procedures of Sort activity	- Group work on sort activity through card exercise with the provision of designated conditions - Group works on creating rules or standards in addition to designated conditions - Presentation of group works
	3		Set-in-Order Activity - Objectives of Set-in-Order activity - Procedures of Set-in-Order activity	- Group works on how to prepare standard operation sheet - Group assessment on the improvement of motion by utilising standard operation sheet - Presentation of group works
	4		Shine Activity - Objectives of Shine activity - Key ideas on shine activity together with inspection activity	- Continuation of 3S activity Objectives and procedure of standard activity Objective and procedures of sustain activity - Presentation of results from group works and sessions
	5	II. KAIZEN	Purpose of KAIZEN - Purpose of the company and KAIZEN - Necessity of time study - Method to measure time	- Preparation for exercise (layout, workflow chart, operation process) - Exercise on time study - Presentation of group works
	6		Understanding Operations - 7 MUDAs - Various aspects of KAIEN	- Exercise in identification and stratification of MUDAs - Group work in KAIZEN exercise and discussions on its effects - Presentation of group works
	7		Understanding Standard Operation - How to prepare standard operation sheet - How to prepare standard instruction sheet	- Group works on how to prepare standard operation sheet - Group assessment on the improvement of motion by utilising standard operation sheet - Presentation of group works
	8		Standard Operation Distribution Sheet - How to prepare standard operation distribution sheet	- Group works on how to prepare standard operation distribution sheet - Group work in KAIZEN exercise and discussions on its effects - Preparation of presentation materials by each group
	9		Presentation - Group presentation on results from session and exercises	- Selection of best practices by active participations through setting up criteria or evaluation points - Presentation of findings on effects of KAIZEN and identification of any remaining issues to be tackled

Source: JICA study team

In relation to the team formation, TRA-KZN-1 is undertaken by three teams simultaneously. Each team, which may consists of six members as maximum including three experienced resource persons (experts assigned for the KAIZEN Unit) and three fresh experts to be trained, may conduct the

in-company guidance sessions with five companies in three months. In order for the trainee experts to internalise the contents of guidance sufficiently, each team shall conduct the training programme twice in a year. As a result, the KAIZEN guidance is planned to be applied into a total of 30 companies in a year.

As mentioned above, TRA-KZN-2 is designed as classroom sessions without the involvement of in-company KAIZEN guidance. This programme is formulated in order to use every possible opportunity for KAIZEN dissemination to companies. The programme can be completed for two-week time. In terms of the team formation, this programme is conducted by the same modality of TRA-KZN-1. In addition, as participants can be exposed to practical ideas of KAIZEN through various exercises, participants may estimate their volumes of commitments required at the company level and at the workplace level.

In parallel with the above, two training programmes for TVET teachers who may be involved in the provision of management consultancy services for MSEs are proposed and presented in TRA-KZN-03 and TRA-KZEN-04, taking into consideration the necessity and importance to disseminate 5S as KAIZEN starters. In relation with the team formation, TRA-KZN-03 is to be implemented by 9 teams. Each team shall be formed by three members consisting of one experienced resource person (a expert assigned for the KAIZEN Unit) and two fresh TVET teachers in order to practice actual exercise of 5S guidance for 5 MSEs in one and half months. As a result, 5S guidance is applied into 45 MSEs in a year.

As mentioned above, TRA-KZN-3 is intended to be completed in one and half months with 8 sessions and self-exercises in the intervals between sessions. In the similar way of TRA-KZN-1, intervals between sessions are devoted for in-company self-exercise (homework assignments) for a week on an average. In addition to this, depending upon conditions of enterprises, extra sessions may be required to accomplish homework assignments effectively. Thus, TRA-KZN-3 is designed to be organised in 8 day sessions for a one and half month-timeframe.

Table-46: **TRA-KZN-03:**
Outline of Comprehensive and Practical Training Programme in KAIZEN for Micro and Small Enterprises

Mode	Day	Session	Morning Agenda	Afternoon Agenda
Classroom Session	1	I. 5S	5S - Necessity of 5S - Importance of continued and repeated activities of 3S activities	- Group work on sort activity through card exercise without the provision of any condition - Presentation of group works
	2		Sort Activity - Criteria for Sort activity - Procedures of Sort activity	- Group work on sort activity through card exercise with the provision of designated conditions - Group works on creating rules or standards in addition to designated conditions - Presentation of group works
	3		Set-in-Order Activity	- Group works on how to prepare standard

			- Objectives of Set-in-Order activity - Procedures of Set-in-Order activity	operation sheet - Group assessment on the improvement of motion by utilising standard operation sheet - Presentation of group works
	4		Shine Activity - Objectives of Shine activity - Key ideas on shine activity together with inspection activity	- Continuation of 3S activity Objectives and procedure of standard activity Objective and procedures of sustain activity - Presentation of results from group works and sessions
	Interval			
Mode	**Day**	**Session**	**Main Agenda**	**Agenda Items**
In-company Guidance	5	II. Implementing KAIZEN Activities at the company	Organising 'Sort' activity	- In-company exercises: explanation of KAIZEN; Posters and KAIZEN board; rapid assessment of a model workplace; workflow understanding by layout chart, identification of lists and formulation of criteria for 3S; and instruction of homework
	Interval			
	6		Understanding '3S' activities in Elimination of MUDA	- In-company exercise: follow-up homework; exercise on 3S activities within a scope of waste elimination; explanation of standard operation sheet; explanation of MUDA; and instruction of homework
	Interval			
	7		Standardising Operations at Selected Workplace	- In-company exercise: follow-up homework; execution of MUDA elimination, rapid assessment of a model workplace
	Interval			
	8		Review for the preparatory session for way forward	- Compilation of findings on effects from 5S and identification of the remaining issues to be tackled

Source: JICA study team

Yet effectiveness and feasibility of these training programmes are not studied and verified on the ground by applying them into MSEs through the provision of the guidance activities to be conducted by TVET teachers. Accordingly, it should be noted that before conducting these training programmes, reconnaissance survey in selected micro and small enterprises shall be suggested. Procedures for selecting enterprises are thought to be similar to the one for medium and large company. Thus, the experiences in selecting medium and large companies can be mobilised (For details, see Chapter 2 of the KAIZEN manual). Depending upon the findings, the two training programmes are subject to modification in terms of time allocation or contents of main agendas and their focuses. On the other hand, classroom exercise-oriented training programme of TRA-KZN-04 can be practiced and flexibly modified based on results of training evaluation. This programme can be conducted by the same formation of the team for TRA-KZN-03.

Table 47: TRA-KZN-04:
Outline of Exercise-oriented Training Programme in KAIZEN for Micro and Small Enterprises

Mode	**Day**	**Session**	**Morning Agenda**	**Afternoon Agenda**
Classroom Session	1	5S	5S - Necessity of 5S - Importance of continued and repeated activities of 3S activities	- Group work on sort activity through card exercise without the provision of any condition - Presentation of group works
	2		Sort Activity - Criteria for Sort activity - Procedures of Sort activity	- Group work on sort activity through card exercise with the provision of designated conditions - Group works on creating rules or standards in

				addition to designated conditions - Presentation of group works
	3		Set-in-Order Activity - Objectives of Set-in-Order activity - Procedures of Set-in-Order activity	- Group works on how to prepare standard operation sheet - Group assessment on the improvement of motion by utilising standard operation sheet - Presentation of group works
	4		Shine Activity - Objectives of Shine activity - Key ideas on shine activity together with inspection activity	- Continuation of 3S activity Objectives and procedure of standard activity Objective and procedures of sustain activity - Presentation of results from group works and sessions

Source: JICA study team

In addition to the above four training programmes, another training workshop is suggested with a view point to accelerate the pace of dissemination in order to satisfy growing interests in KAIZEN expressed by a number of companies that contact the designated unit of KAIZEN in MOI. The Mini-training workshop for dissemination of KAIZEN can be conducted for only two days dealing with the outline of workplace KAIZEN.

Table-48:TRA-KZN-05:
Mini-Training Workshop for Dissemination of KAIZEN

Mode	Day	Session	Morning Agenda	Afternoon Agenda
Classroom Session	1	Exercising Standardisation	Standardisation of Workplace Environment	- Outline of KAIZEN manual: concepts and methods - Overview of Standardisation of Workplace Environment - Group work on Sort activity through card exercise - Compilation of feedbacks through floor discussions
	2		Standardisation of Operations	- Overview of standardisation of operation: value-added work; Muda; and standard operation sheet - Group work on time study - Group work on KAIZEN exercise using building blocks (1) for time study and stratification of Muda - Group work on KAIZEN exercise using building blocks (2) for plan improvement measures: implement improvement measures: evaluate results and standardise results - Compilation of feedbacks through floor discussions

Source: JICA study team

Apart from substantial aspects of training programmes as above, logistic aspects of training programme are of significant importance. Table-49 is presented to indicate an outline of logistical requirements for conducting proposed training programmes, based on the experiences gained through the implementation of the Study.

Table-49: Outline of Estimated Logistical Requirements for Conducting Training Programmes

	TRA-KZN-1 & 2 for MOI's experts in medium and large companies	TRA-KZN-3 & 4 for TVET teachers in micro and small enterprises
Vehicle for In-company KAIZEN Guidance	Minimum 3 vehicles with seating capacity of at least 7 are required. Calculation: (a) Team: 6 members per team as maximum number (b) No. of Teams: 3 teams per term Remark: A vehicle may not be necessary when TRA-KZN-2 shall be conducted because it is intended to be undertaken in classrooms	Minimum 9 vehicles with seating capacity of at least 4 are required. Calculation: (a) Team: 3 members per team (b) No. of teams: 9 teams as maximum Remark: A vehicle may not be necessary when TRA-KZN-4 shall be conducted because it is intended to be undertaken in classrooms
Venue	One hall that at least 63 people can be accommodated is required as minimum size: Calculation: (a) Number of participants from 15 companies: 3 x 15 = 45 (b) Number of experts: 9 (c) Number of resource persons: 9 Total (a)+(b)+(c): 63 as minimum figure	One hall that at least 153 people can be accommodated is required as minimum size. Calculation: (a) Number of participants from MSEs: 3 x 45 = 135 (b) Number of experts: 9 (c) Number of resource persons: 9 Total (a)+(b)+(c) : 153 as minimum figure
Equipment and Materials	- Laptop PC: Four (4): one PC per team plus one PC for training session - Data projector: One (1) - Necessary numbers of photocopier - Whiteboard: Three (3) - Flipchart stands: Nine (9); one per group (one group may consist of 5 training participants) - Digital camera: Three (3); one per team - Stopwatches: 54 - Other materials mentioned in KAIZEN manual including necessary sets of cards, model-cars and any other reading materials.	- Laptop PC: Nine (9): one PC per team plus one PC for training session - Data projector: One (1) - Necessary numbers of photocopier - Whiteboard: Three (3) - Flipchart stands: Twenty-seven (27 one per group (one group may consist of 5 training participants) - Digital camera: Nine (9); one per team - Stopwatches: 144 - Other materials mentioned in KAIZEN manual including necessary sets of cards, model-cars and any other reading materials.
Financial requirements	Daily subsistence allowance (DSA) for MOI's experts in conducting In-Company KAIZEN guidance - DSA for 300 person-day per year - Calculation: 30 companies addressed by In-company KAIZEN guidance per year One company may be visited 10 times Thus, 10 times multiplied by 30 companies results in 300 visits in total per year. Other operation costs including fuels, stationaries, electricity, water and the like to execute required activities	Daily subsistence allowance (DSA) for MOI's experts in conducting In-Company KAIZEN guidance - DSA for 180 person-day per year - Calculation: 45 companies addressed by In-company KAIZEN guidance per year One company may be visited 4 times Thus, 4 times multiplied by 45 companies results in 180 visits in total per year. Other operation costs including fuels, stationaries, electricity, water and the like to execute required activities

Note: The above outline focuses on estimated requirements mainly for two training programmes involving In-company KAIZEN guidance, i.e. TRA-KZN-1 and TRA-KZN-3

Source: JICA study team

(2) Formulating National Examination for Standardisation of KAIZEN Consuling Services

In theory, effective and continual dissemination of KAIZEN requires standard quality of consultancy services.

A consultant, in order to be recoginsed as a qualified consultant, shall be equipped with a variety of knowledge, skills and attitudes that certainly requires in conducting consultancy services in order to

meet satisfaction of the client, i.e., a company, in the context of improvement of product quality and productivity of manufacturing. These required knowledge, skills and attitudes are wished to be acquired in a short period of time, but it is difficult to ignore the fact that these requirements for consultancy services are normally acquired not at once but over years with strong, continual and committed involvement in KAIZEN. Thus, it is understood that a quality of consulting services shall depend upon the grade of consultants.

In light of the above view, a draft matrix was prepared in an attempt to classify consultants, who are involved in KAIZEN dissemination, in accordance with levels of competences, technologies and skills as well as depth and width of knowledge. For details see Draft Matrix on Stratification of KAIZEN Professionals in Chapter 4 of this report.

It is of significant importance to establish relevant examination and certification system in order to ensure the required standards of quality of consulting services. During the next five years, , it is suggested that such system should be formulated with a reference to the existing examination and certification systems,

(3) Preparation of additional training programmes

The above proposed training programmes are formulated emphasising on dissemination of KAIZEN at workplaces in companies. In order to make KAIZEN at workplace to be expanded into company-wide KAIZEN activities, enhancement of three areas of management capabilities, which are identified as Fundamental Enablers on Recurrent KAIZEN Agenda in the manual, are crucial. These areas of management capabilities are (i) business planning capability, (ii) cost accounting and operation data management, and (iii) trust and empowerment management. They may not be built up overnight. Nevertheless, a KAIZEN-practicing company needs to have basic aptitudes in those three areas of capabilities. Moreover, a KAIZEN-practicing company is expected to develop and upgrade them in step with the advancement of KAIZEN at their workplaces.

- Business Planning:

Business planning refers to management capability to formulate, utilise and manage plans for the company's business operation. Such plans include long-term business plan, annual business plan, and production plan. The long-term business plan should be a business strategy document with a time horizon of 3-5 years. It should include a concise business strategy plan including investment plans such as in plants, machinery, etc., and select business targets / forecasts and basic financial targets / forecasts that are critical to the company's business. The annual business plan is the business plan for the current year which is the implementation plan of the long-term business plan, and therefore it is more in detail than the long-term plan. The production plan focuses on production and deals with volume and timing of production operation in alignment with other relevant factors such as the planning of sales.

In relation to KAIZEN activities, such plans' various targets serve as the standards against which the

assessment of the current situation is done. The target-actual gap analyses would serve as triggers for various KAIZEN ideas. Absence or non-use of such plans would be a condition detrimental to the progress in the KAIZEN activities at workplaces.

The business plan is not a set of documents that is filed away and forgotten, but it has to be actively utilised by the management. The plan needs to be reviewed periodically comparing the latest business results and the plan. Periodic review of latest business results against the plan should be one of the most basic management tools to continually align the company operation with the right direction to make progress and improvement over and above what have been achieved. The review will identify a gap between the plan and the actual, which will lead to analysing the problem and formulating a revised plan. This cyclic process follows PDCA, or Plan, Do, Check and Action. This process should repeat itself continually as an integral part of management discipline.

- Cost Accounting and Operation Data:

It is generally assumed that companies maintain certain accounting practice in place for the purposes of corporate accounting as well as tax accounting. The corporate accounting relates to accurate reporting of financial conditions of the company as a going-concern, while the tax accounting relates to complying with the tax regulation requirements. The accounting information helps provide certain data necessary for KAIZEN activities in terms of company-level sales, costs, profits, inventory, etc. Particularly important in this area is cost accounting in terms of unit product cost. Availability of unit product cost data becomes important as the company's KAIZEN practice progresses beyond the initial elimination of easily discovered wastes and moves along into more sophisticated arena of KAIZEN improvements.

In addition, various operation data is also critical in the advancement of KAIZEN activities which are conducted with the fact-based approaches. Operation data is used in the workplace KAIZEN activities in a variety of ways, such as understanding current situation, analysing causes of a problem, setting a target for an improvement measures, confirming the results and so on. The operation data is closely associated with various business indicators that are critical in management of quality, delivery performance, safety and productivity (See Chapter 3 Table-11 regarding such indicators). Such business indicators can be recorded only with reliable operation data management. One example for this may be a record of actual time spent to produce certain product, which is one of many pieces of information required for unit product costing, but is directly helpful as a numerical measure in KAIZEN activities. Another example can be "failure check sheets" of defect or abnormality occurrences in a process, which would serve as highly beneficial resources for KAIZEN activities. The operation data should be captured, saved and managed under certain company-wide standards. The operation data needs to be consistent with accounting where the data is related to profit-and-loss. Lack of these standards would mean lack of objectivity in performance assessment of various workplace KAIZEN achievements.

Upgrading of the cost accounting capability and operation data management capability requires training and efforts to establish necessary accounting and other data arrangements. A KAIZEN-practicing company is expected to strengthen these capabilities along with the advancement of their KAIZEN activities.

- Trust and Empowerment:

KAIZEN activities are carried out with genuine participation among top management, middle managers and front-line employees for collaborative work. It requires proactive and spontaneous participation of employees who should play critical roles including planning and evaluation in addition to execution of the workplace KAIZEN activities. A company who wish to introduce KAIZEN to its organisation must maintain a clear top management attitude to support middle managers and employees and enable them to work proactively with their initiatives. In furtherance of this top management attitude, Trust and Empowerment is a management principle which encompasses: to support employees' initiatives at the workplace; to delegate proper authority to managers/supervisors; to provide employees with training opportunities; and to trust employees generally. Trust should be mutual between management and employees. Enhancement of this management principle from the top will be the key driver to nurture the mutual trust.

The sustained and expanding KAIZEN activities are dependent on the employees' mind-set to willingly play proactive roles in the KAIZEN activities. Furthermore, KAIZEN activities can boost the employee morale through satisfying and self-fulfilling experiences of the employees as they find themselves capable of making changes in the company they work for. This can further reinforce the organisation members' positive attitudes towards work and the organisation, resulting in continued development of the KAIZEN activities. Thus, KAIZEN generates a virtuous cycle. The top management of a KAIZEN-practicing company is required to maintain and strengthen the Trust and Empowerment management principle in order to secure a proactive and willing employee mind-set and to get the company on track to pursue the virtuous cycle. Trust and Empowerment capacity can be developed in sync with the development of the KAIZEN practice.

In this regard, during the next five-year period, the following activities are suggested to be conducted; (i) development of conceptual framework and guidance; (ii) conduct of consultative meetings with relevant stakeholders; (iii) conduct of situation analysis; (iv) preparation of operation guideline for improvement of data planning and management, business plan formulation and management; and roles of executives and managers in trust building through empowerment of employees; and (v) establishment and conduct monitoring and assessment.

5.3.3 Information Dissemination for KAIZEN Forum and Networking

1) Creating KAIZEN Month (January)

As mentioned earlier, KAIZEN is defined as a system of continual undertaking by an organisation to improve its business activities and processes with the goal to always improve quality of products and

services so that the organisation can meet full customer satisfaction. KAIZEN, as undertaken by an organisation, involves continual, dynamic and self-disciplined practice in the quest of improvements towards ever higher quality and productivity. In this perspective, the practice of KAIZEN is conducive to creation of a corporate culture in which the organisation's members are endogenously self-motivated to work together to continually self-innovate and improve their organisation.

The next quest lies in how to continually bring up such self-managed system of organisations in nation-wide scale of operation. Awareness creation campaigns on KAIZEN on a regular basis may stimulate discussions on quality and enable KAIZEN activities to take root and grow in a company.

In such context, many countries including Japan have set up a designated month regularly in a year called 'the month for quality' or 'quality month' by all the stakeholders and actors including public and private agencies, companies as well as the rest of the social fabric including local communities. The primary purpose of the quality month (or KAIZEN month) is to raise awareness of top-management, middle managers and front-line employees on the significance of quality and productivity, customer satisfaction in terms of QCD (quality, cost and timely delivery), employee satisfaction, and other related issues. In the case of Japan, in this designated month, various types of seminars and forums on KAIZEN are organised while nation-wide QCC presentation meetings are held. In addition to this, individual companies may produce companies' own posters or pamphlets on KAIZEN, make catch-phrases or slogans necessary for disseminating the core idea related to KAIZEN, company-wide QCC presentation seminars with its own awarding system and the like. The establishment of such KAIZEN month is expected to serve as important tool for nation-wide dissemination of KAIZEN.

Cognisant of the importance of the above, a series of consultative meetings in the Study suggested two main criteria to choose a month. Two criteria were; (i) a month that follows the harvest when people generally share a joyful atmosphere with a sense of unity; and (ii) a month which is relatively free from traditional and religious events that occupy people's minds and social calendar. Accordingly, the month of 'Tir' (January) is suggested to serve as the designated month for public awareness on quality and productivity or KAIZEN.

2) Establishing KAIZEN Award

Needless to say, award system contributes dissemination of a particular idea, KAIZEN in this plan, through enhancement of people's motivation and incentive as well as public awareness building.

In reference to existing experiences prevailing in the country on awarding systems, it is suggested that the intended institution of KAIZEN, which is expected to serve as the centre of excellence on KAIZEN, will take the initiative to prepare for a KAIZEN award system. It will include undertakings to: set up an organising committee; to develop criteria to choose the best practices of KAIZEN or QCC activities of companies; to formulate organisational mechanism to select companies or QCCs under clear criteria as well as to make public announcement that ensures transparency; to

identify sponsoring organisations if necessary, and finally to run the execution of the process of awarding.

3) Constructing Platform through Website

In order to disseminate KAIZEN, various types of venues, which provides as many as stakeholders with opportunities to exchange experiences and views, should be established and maintained. One of such venues is a Website on KAIZEN in Ethiopia. It is expected that the intended KAIZEN institute will prepare the Website on Ethiopian KAIZEN in order to effectively and efficiently facilitate processes of interactions among stakeholders concerned on KAIZEN. Such Website is expected even to serve as marketing channels through which foreign companies and people could have access to individual companies that practice KAIZEN as well as public agencies involved in dissemination of KAIZEN in Ethiopia.

5.3.4 Enabling Environment for KAIZEN Dissemination

1) Fostering Quality-conscious Mind-set

In the Study's pilot project activities, the majority of the managers and employees of the pilot companies were active and enthusiastic participants in the KAIZEN activities. However, there were a few unfortunate cases where the KAIZEN activities faltered because the company management did not care about quality as their priority was placed on production volume. One of the reasons for the insensitivity towards quality observed at times in the manufacturing industry is related to the situation in which quality is not effectively required in operating manufacturing companies. Such situation may come from either of the following: (1) there is no quality standards for products, therefore for the producer has no need to worry about the quality level of products; (2) there is no effective requirement for products to be certified for quality; or (3) there is no requirement for the certification to be disclosed to the public or prospective buyers. In general, the manufacturing sector will not pay attention to quality unless all the three are in place.

Based on the observations in the pilot project activities, the three areas related to quality standards are discussed below for future policy consideration.

(1) Making quality standards effective

It is recommended that quality standard grading of products of agriculture and mining industries be established. It is obvious that the products of the primary industries have quality variation. This very fact makes it necessary to establish a system of quality grading based on ingredients by a public institution. For example, wheat in Ethiopia is not what the agro-processing companies really want to buy. Bread produced from Ethiopian wheat flour is not quite tasty in international comparison, in part because wheat in Ethiopia is not tested in terms of its ingredients such as gluten, and it is not priced according to the ingredient content. At the fodder hay exhibition at a farmers' fair in the United States, one can see the hay is graded in terms of its ingredients. The grading for hay is necessary because its ingredients make difference in milk that cows produce. The same principle applies to ingredients of dairy cow's milk, length of fibre of cotton, and

tastiness of rice.

The same applies to industrial materials. For instance, wheat flour is the material for bread, pasta and biscuit. Wheat flour is differentiated in terms of gluten content. Biscuit requires low gluten flour, pasta requires high gluten flour, and bread needs one in the middle. Pasta producers, therefore, buy high gluten flour to produce good tasting pasta. The same goes with steel materials. Steel's carbon content decides strength and ductility. It is desirable to apply a grading system to all industrial products, although products produced by specific orders may be different.

(2) Certification of quality

Establishing a quality grading alone is not enough for the grading to be useful. A mechanism to let producers to get their products graded is needed. Certification should be part of the grading system. Certification for agricultural products typically relies on testing of real products. Certification for industrial products whose quality variation is small is based on auditing done periodically on the production processes to determine if the target quality can be assured. Grading of agricultural products is determined normally by appearance and ingredients. In some cases, tasting test is added. Tasting test requires comparative tasting with comparable products and the blind tasting format.

(3) Public disclosure of product quality: Creating environment for quality improvement

When a quality grade is given to a product, the price for the product is determined according to the grade. The higher the grade, the higher the price, and the lower the grade, the lower the price. Therefore, the products' uses are determined according to the grades. For example, rice in Japan used to be graded from 1st grade to 5th grade. The 1st grade rice was purchased by expensive restaurants, while the 2nd and 3rd were the grades for household consumption. The 4th grade rice was used as flour for cake production. The 5th grade rice was for livestock feed. This was when rice prices were fixed by the government. The quality grading enables buyers to make select their purchases rationally. The grading of rice in Japan was eventually abolished, but in its place, brand competition among different brands now serves consumers in selecting their purchase of rice. Where the consumers can see the product's quality relative to standards (i.e., grade certified and disclosed, or competing brands that consumers know), the consumers make their purchase decisions relative to quality. Where products are selected on the buyers' side, producers are incentivised to be quality-conscious. In such environment, improvement of quality of products is inevitable, and will be continuous.

In studying the above issues of quality standards, certification and public disclosure, a collaborative work system between the intended KAIZEN institute and Ethiopian Quality and Standard Authority needs to be considered, especially in relation to the ninety technical committees that have been established so far. The awareness building on Ethiopian Standards should be promoted as an integral part of KAIZEN dissemination.

2) Keeping Competition Functioning

The pilot project's experiences mentioned earlier are related also to market situations where demands of products are much higher than volume of supply. This is another reason for the insensitivity towards quality. In the sellers' market which is expected to continue for an extended period of time, management on the sellers' side tends to lose interest in quality improvement. Companies are even tempted to ship sub-par quality products to the customers when there are not many viable choices on the buyers' side but to take whatever is available from the seller they have contracted.

Competition should be the rule of the game in the domain of business. However, not everyone is the strong players but there are weak ones such as a start-up. A market where a small number of strong players dominate the market crowding out the weak ones is not a competitive market that can optimise the use of resources. In order to nurture a strong industrial sector, vigorous mechanism needs to function to remove obstacles to competitive environment in the marketplace and to eliminate unfair trade practices, so that competition functions properly in the business sector. Elimination of unfair trade practices may include an undertaking to remove unfair contractual practices to make business contract practice more standardised. Elimination of cartel-like behaviours needs to be rigorous. Obstructing practices to bar new entrants by the existing players also need to be addressed.

The marketplace should be where those with great ideas and with relentless endeavours to produce better products and sell more of them will eventually succeed. KAIZEN is for those who try to do their best to innovate themselves to be successful eventually.

3) Organising National Consultative Meeting for Building Enabling Environment

In order for KAIZEN to be effectively disseminated, it is critically important that an enabling environment is in place that supports KAIZEN activities by the intended KAIZEN institute, TVET, medium and large companies, micro and small enterprises and any other relevant stakeholders in KAIZEN. The enabling environment for dissemination of KAIZEN involves various aspects of such external issues as technical standards established by Ethiopian Standards, competition policies, taxation systems, availability of hard currencies for purchasing materials from abroad, pricing mechanisms of domestic products like wheat for agro-processing industry and others.

To tackle such issues, it is suggested that at the federal level a mechanism to hold periodical consultative meetings for improving enabling environment for KAIZEN should be established.

5.4 Proposed Plan of Actions

Taking the above discussions into consideration, Table-50 presents the outline of the proposed plan of actions for the coming five years in synchronisation with the planning horizon of the GTP. It should be noted that the proposed plan of actions is subject to the periodical revisions based on the results of review and monitoring to be conducted by the Ministry of Industry.

Table-50: Proposed Plan of Actions

Category	No	Main Programmes	Target			2002	2003 E.C.	2004 E.C.	2005 E.C.	2006 E.C.	2007 E.C.
			Company	Expert	IEO	2010	2011	2012	2013	2014	2015
Programme for MLCs	1	Pilot Project for the formulation of standard approach to KAIZEN									
	1-1	Verification study in the first group of 15 medium and large companies	15	9	-						
	1-2	Verification study in the second group of 15 medium and large companies	13								
	2	The first customisation exercise through the follow-up activities	-								
	3	Comprehensive and Practical Training Programme in KAIZEN for MLCs									
	3-1	Conducting In-company Training (1a)	15	9	-						
	3-2	Conducting In-company Training (1b)	15								
	3-3	Conducting In-company Training (2a)	15	9	-						
	3-4	Conducting In-company Training (2b)	15								
	3-5	Conducting In-company Training (2a)	15	9	-						
	3-6	Conducting In-company Training (2b)	15								
	3-7	Conducting In-company Training (2a)	15	9	-						
	3-8	Conducting In-company Training (2b)	15								
Programme for MSEs	4	Preliminary Study for Customisation in MSEs	-	-	48						
	5	The first exercise-oriented Training Programme for IEOs									
	6	Comprehensive and Practical Training Programme in KAIZEN for MSEs									
	6-1	Conducting In-company Training -1	45	-	18						
	6-2	Conducting In-company Training -2	45	-	18						
	6-3	Conducting In-company Training -3	45	-	18						
	6-4	Conducting In-company Training -4	45	-	18						
Gen	7	Any other programmes including Data Management and Business Planning									
Net	8	KAIZEN Award Programme									
		Total	328	45	120						
		Total excluding targets obtained during the Study (No. of company in 1-1& 1-2 & No. of experts in 1&2 and 4&5)	300	36	72						

Abbreviation

Cat.: Category; MLCs: Medium and Large Companies; MSEs: Micro and Small Enterprises; Gen: General; Adv: Advanced; Net: Networking; IEO: Industrial Extension Officer (Designated TVET Teachers); E.C.: Ethiopian Calendar

Remarks

1) Total number of company includes 28companies in Phase-1, 120 medium and large companies; and 180 micro and small enterprises.

2) Total number of MoI's experts includes the number of KAIZEN Unit members in Phase-1

Technical Note:

1) Team formation for MLCs: 6 members per team (three experienced experts and three fresh-persons), 3 teams per year; 5 companies per three months per team

2) Team formation for MSEs: 3 members per team (one MoI expert plus two IEOs), 9 teams per year; 5companies per one and half months per team

3) any other programms may include any preparatory works to select companies, any works to revise manuals or to develop training materials, and the like.

Coloured or shadowed:

Time tentatively allocated for training programmes

Time flexibly allocated for any formulations of new programmes, any preparatory works and others

Light yellow: Break period of academic institutes including TVET

Light green: the month of Tir (February) designated for KAIZEN month

Source: JICA study team

Chapter 6: Conclusion

In concluding the Final Report, this chapter provides a brief account of the two seminars conducted at the end of the Study activities and some final thoughts about future development of KAIZEN in Ethiopia.

6.1 National KAIZEN Seminar <3rd May, 2011>

JICA study team and KU held National KAIZEN Seminar on 3rd May, 2011 in order to present this Study's outcomes to the Ethiopian government officials and representatives of public and private institutions that were stakeholders of KAIZEN dissemination in Ethiopia. The objectives of the seminar were to gain understanding of those invited on results of the pilot project, KAIZEN guidance methodologies and Dissemination Plan, and to collect feedback comments to be reviewed for the purpose of finalisation of the Final Report of the Study. (At the seminar, JICA's KAIZEN institutionalisation expert also made an outline presentation of the institutionalisation, the result of which was to be handled separately outside of this report.)

The presentation subjects were the main contents of the Draft Final Report of the Study, namely: main accomplishments of the pilot project; the methodologies of KAIZEN guidance established in the pilot project; and the Dissemination Plan formulated in the Study. As the result of the presentations and the discussion that followed, the officials and stakeholders came to share a basic understanding of the KAIZEN methodologies and the proposed Dissemination Plan, and favourable opinions were voiced. In this context, in view of the recognition of quality improvement as culture of a nation or a society and therefore a need for a movement of quality improvement through KAIZEN, a suggestion was made from a participant from the academic circle that curriculums on KAIZEN be included in the education system in the country in consideration with human resources development of the next generation. This point was corroborated by other participants including those from two companies that had participated in the pilot project.

The comments on the Dissemination Plan (Draft Final Report), both those expressed at the seminar as above and others collected after the seminar, were given consideration by the JICA study team in the finalisation process of this Final Report. The main points of these comments are included in 5.2.4 KAIZEN Education for KAIZEN National Movement in Chapter 4.

Following are additional information regarding the seminar.

- Objectives and contents of presentation

(1) Explain to the participants the pilot project's main outcomes that resulted from the practical application of the KAIZEN guidance methods developed in the pilot project.

(2) Explain the KAIZEN guidance methods and collect feedback.
The main contents include:
- KAIZEN concept; process and methods of guidance;

- Samples of successes; guiding principles of KAIZEN activities;
- Method of monitoring and assessment of KAIZEN guidance activities;
- Results of monitoring and assessment and fundamental factors for successful KAIZEN development

(3) Explain the KAIZEN Dissemination and collect feedback.

The main contents include:

- Overview of the KAIZEN National Plan and where the Dissemination Plan component stands relative to other components;
- Frame of reference for formulation of the Dissemination Plan ((i) policy synchronisation with GTP, (ii) necessity for customisation, (iii) modalities of approaching companies);
- Dissemination Plan ((i) human resources development, (ii) information dissemination, (iii) enabling environment for KAIZEN dissemination)

● Procedures for collection of feedback comments

Prior to the seminar, the Draft Final Report was reviewed by KU and its copies were distributed to certain government officials of relevant ministry directorates, institutes and some other institutions. Those officials were invited to the seminar as 'focus group' participants who were expected to be the primary source of feedback comments. In addition to the comments raised at the seminar, collection of written feedback comments from the participants was done with the submission deadline of May 11. Subsequent to the seminar, the JICA study team and KU reviewed and confirmed the result of the seminar on a preliminary basis including the handling of the feedback comments, which was documented in a minutes of meeting dated May 4.

● Seminar Programme

Table 51: National KAIZEN Seminar Programme

National KAIZEN Seminar
Date: 3rd May, 2011
Venue: Hilton Hotel in Addis Ababa

Time		Agenda
08:30		Registration
09:00	30 min	Opening Session Welcome Speech ・Ato Getahun Head of KAIZEN Unit, Ministry of Industry (Chair) Opening Remarks ・Mr. Kishino Ambassador of Japan Opening Speech ・Ato Ahmed Nuru Ministry of Industry
09:30	85 min 30 min	Presentation of Dissemination Plan (Sub master Mr. Takeyama) (1) Results of Pilot Project by KU (2) Kaizen Guidance Methodology by Mr. Ninomiya (3) Dissemination Plan (4) Discussion and feedback on dissemination plan
11:15	15 min	(Tea Break)

11:30	30 min 30 min	Presentation of Institutionalisation Plan (Sub Master Mr. Sato) (5) Skeleton plan of Institutionalisation by Mr. Sato (6) Discussion and feedback on Institutionalisation plan
12:30	15 min	Closing remarks ・Mr. Ohta Head of JICA Ethiopia Office ・Transfer the manual from JICA to MOI ・Certificate for Pilot Companies $ others
12:45		Closing

Source: JICA study team

● Seminar Participants

Table 52: National KAIZEN Seminar: Participant distribution

National KAIZEN Seminar: Participant distribution

MOI representative	1	
Focus Group	15	Of which MOI-related: 5
Pilot Companies	16	
Other stakeholders	21	African Development Bank, African Union, GTZ, other public and private institutions
Embassy of Japan and JICA	7	
JICA expert of institutionalisation	1	
KU	10	
JICA study team	5	
Total	76	
Note: Federal Ministers and heads of department were absent from the Seminar as they were required to attend the Federal Parliament which was in session with regards to GTP industrial development policy on the same day. The chairman introduced to the seminar audience the messages with best wishes for the seminar from the Minister of MOI and the Economic Adviser to the Prime Minister.		

Source: JICA study team

6.2 TVET Seminar (KAIZEN Study Seminar) <30th April – 1st May>

For the purpose of obtaining preliminary insight in terms of KAIZEN dissemination to micro and small enterprises sector, an exercise-oriented training seminar was held for the deans of the TVET schools (53 schools) and other TVET-related officials to introduce the KAIZEN guidance methodology. This seminar was intended to help the key TVET personnel better understand KAIZEN and to help KU start preparation for providing assistance to TVET in including KAIZEN in their training programme for micro and small enterprises.

At the conclusion of the seminar, the deans expressed favourable opinions on the exercise experienced in the seminar, and understood the KAIZEN guidance methodology with recognition of difference relative to the training they received before. In response to a questionnaire for the participants, 37 participants responded with their comments. Their feedback on the manual was also positive. They appreciated the manual's comprehensiveness encompassing various aspects of KAIZEN and KAIZEN guidance, however, they did not have time to read through the manual, given the time constraints.

They stated they viewed the manual content in conjunction with what they learned in the seminar as effective and easy to use in relation to MSEs. One respondent stated that the manual is very important especially for MSEs and that the manual is well organised so that users can start KAIZEN. Overall, the TVET participants were able to gain good understanding of KAIZEN and its guidance methods that this Study established, and the KU side was able to have a good insight for collaboration with TVET for the customisation of the KAIZEN manual for the MSE sector.

Following are more detailed information regarding the TVET Seminar.

- Background of TVET Seminar

(1) It is understood that the policy issue of great urgency and priority in the field of industrial development forming the core of GTP is the strategic implementation of development of micro and small enterprises.

(2) The revised strategic policy paper for developing small and micro industry (approved in the cabinet meeting in January, 2011) stipulates that TVET should implement Industrial Extension Service to support micro and small enterprises. The Industrial Extension Service is composed of 5 pillars viz. (i) human resources development (ii) technical assistance, (iii) market development support, (iv) information support,(v) business management support which includes KAIZEN.

(3) As the fiscal year in Ethiopia is July to June of the Gregorian calendar, May is the month for budget planning for the following year. On the other hand, the educational term is September to June, July, August, being the main rainy season, are normally spent for training of the teachers.

(4) The Ethiopian government, under high priority given to implementing GTP on schedule, is making quick preparations to start Industrial Extension Service from the new school term of TVET of September as stipulated in the strategic policy paper for developing the micro and small enterprises.

(5) In the context of this timeframe, MOI had discussions with Ministry of Education which oversees TVET with a view towards putting the KAIZEN guidance methodology into practice in Industrial Extension Service. Subsequently MOI (KAIZEN Unit) requested that the Study's final KAIZEN study seminar be addressed to TVET to introduce the Study's methodology of KAIZEN guidance to TVET with its coordination with ecbp (Engineering Capacity Building Program).

- Objectives of TVET Seminar

(1) Introduce outline of KAIZEN to seminar participants with a focus on KAIZEN Starter, viz. (i) standardisation of workplace environment, and (ii) standardisation of operation.

(2) Help participants grasp practical ideas of KAIZEN activities through exercise sessions.

(3) Introduce the KAIZEN manual and the KAIZEN guidance methodology.

(4) Discuss on compatibility and applicability of the KAIZEN guidance methods to micro and small enterprises, and obtain feedback opinions on the methods and on training needs of TVET personnel.

● Time Schedule of Seminar

1st day: 30th April 2011 9 am to 7 pm

2nd day: 1st May 2011 8 am to 3 p.m.

Place: Training facility of Ethiopian Management Institute in Debrezeit (41 km south of Addis Ababa)

Table 53: TVET Seminar Programme

Day 1		
Time		Agenda
08:30		Registration
09:00	20 min	Opening Remarks ・Mr. Getahun: Chief of Ministry of Industry KU ・Mr. Takeyama: Leader of JICA KAIZEN Team
09:20	25 min	Opening speech
09:45	90 min	Lecture Session 1 ・Purpose of KAIZEN ・Overview of KAIZEN
10:30	15 min	(Break)
10:45		Lecture (continue)
11:30	120 min	Lecture Session 2 ・Importance of standardisation ・5S – Standardisation of Work Environment
12:30	60 min	(Lunch Break)
13:30		Lecture (continue)
14:30	120 min	Group Work 1 ・Practicing SEIRI (Sort) ・Using tableware card to understand importance of standardisation
15:30	15 min	(Break)
15:45		Lecture (continue)
16:45	60min	・Q & A, Wrap-up of Day 1
17:45	75 min	Explanation of the Manual ・Explanation of the Manual ・Discussion or Q and A
19:00		(Dinner)
Day 2		
Time		Agenda
08:00		Registration (Day 2)
08:00	30 min	Discussion on the Manual
09:00	90 min	Lecture Session 3 ・Standardisation of Work ・MUDA (waste) of work
10:30	15 min	(Break)

10:45	105 min	Group Work 2 ・Practice on Video ・Practice measuring work time (using Lego Blocks)
12:30	60 min	(Lunch Break)
13:30	60 min	Group Work 3 ・Practice making countermeasure (using Lego Blocks) ・Practice confirming the effects (using Lego Block)
14:00	60 min	KU's Discussion on Manual and Institusionalisation Q&A ・Overall review by the instructor
15:00		Closing

Source: JICA study team

6.3 Conclusion: Some Thoughts for the Future

1) Three objectives of the Study

The three objectives of this Study have been accomplished as summarised below.

Objective 1: "Formulate a national plan to enhance activity on quality and productivity improvement (KAIZEN) for Ethiopian enterprises in the industrial sector"

The draft final version of the Dissemination Plan, or the dissemination component of the National Plan, was reviewed as part of the Draft Final Report by the officials and representatives of the stakeholders relevant to KAIZEN dissemination in the review process of the National KAIZEN Seminar. The valuable comments received in the review were given careful consideration, the results of which have been incorporated in the Dissemination Plan in this Final Report as presented in Chapter 5.

Objective 2: "Formulate a manual which can be used for quality and productivity improvement activity (KAIZEN)"

The manual, or Ethiopia KAIZEN Manual, was completed. The audio-visual material, or Ethiopian KAIZEN Visual Guide, was also completed. The manual which is the product of the pilot project activities as described in 3.6 in Chapter 3, has already been in active use by KU such as in the special supplementary KAIZEN guidance programme executed by KU in March / April 2011 that provided additional proof of the effectiveness of the manual for medium and large companies as described in 4.2.5 in Chapter 4. As for the manual's utilisation for the micro and small enterprises sector, the TVET seminar reported in 6.2 of this Chapter marked a good start for the upcoming endeavours paving the way towards expansion of the sector targets of the KAIZEN manual application.

Objective 3: "Transfer relevant skills and techniques to the staff members of the KAIZEN Unit of the Ministry of Industry (MOI)."

It is considered that two-thirds of KU members have reached Level 3, or the 'KAIZEN Consultant' level as explained in 4.2.5 in Chapter 4. The remaining KU members have reached Level 2 and are

solidly on track to develop themselves towards higher levels of KAIZEN consultants. This was achieved through the on-the-job training throughout the pilot project and other training opportunities in the Study activities. The fact that KU was appreciated highly by the company in the successfully completed special supplementary guidance programme is yet another evidence of the achievement in capacity development of KU as described in the same section 4.2.5 of Chapter 4.

2) For further capacity development of the KU members

In describing the successful accomplishment of all the three objectives of the Study, it should be noted that the decisive factor for the success of the Study was the strong leadership provided by the capable leader together with the excellent team of the nine KU members on the side of the Ethiopian side. It is particularly worth noting that the KU members have been so positive and eager to acquire KAIZEN skills and techniques that they planned and carried out follow-up company visits in the absence of the JICA team members in Ethiopia. All KU members are now capable of developing themselves further as KAIZEN consultants. In order to enhance the excellence of the KU members as KAIZEN consultants, the key word going forward is exposure to actual workplace experiences. It is critically important that KU secures ways in which the KU members expose themselves to actual workplace situations as much as possible in order to experience KAIZEN activities in solving actual problems in the workplaces.

3) For future expansion of KAIZEN guidance methodology

The KAIZEN guidance methodology established in the pilot project focuses on “workplace KAIZEN”. Generally the approaches in KAIZEN guidance or KAIZEN consulting differ from consultant to consultant. Based on the experience of the first year that enabled the JICA study team to understand Ethiopian companies’ strengths and weaknesses as well as their opportunities and threats, the team developed the guidance methodology focused on “workplace KAIZEN”. By focusing on “workplace KAIZEN”, the team was able to formulate a standardised, common methodology of KAIZEN guidance. Standardisation of the guidance method in this way was possible because every company has substantial needs for “workplace KAIZEN” and because “workplace KAIZEN” is the basis and the common ground of all KAIZEN activities.

Also, “workplace KAIZEN” requires significant efforts for the self-organising process, which is a common process and thus is appropriate for a standardised methodology. The standardised methodology was relatively easy to be documented in a logical fashion, which can make an effective manual. The standardised uniform methodology also makes creation of effective audio-visual materials possible. Under the standardised, common methodology, technology transfer to KU was also effectively promoted.

The workplace KAIZEN-based guidance methodology established by the pilot project of this Study is not the only method available. In the future KAIZEN development in Ethiopia, the present KAIZEN guidance method should be expanded in two ways. One is expansion in the entry paths to

KAIZEN activities for wider scope of industry sectors by way of customisation for MSEs and possibly for areas of unique types of production. The other is enhancement in providing support for management capabilities in association with the advancement of KAIZEN activities, which are the Fundamental Enablers on Recurrent KAIZEN Agenda.

4) Dissemination of KAIZEN activities

The KAIZEN Guidance methodology of this Study was able to provide a road-map for individual companies from an entry point to company-wide expansion. In other words: (i) It clearly defines the entry point for KAIZEN in standardisation of workplace environment (5S) which is followed by standardisation of operation; (ii) It provides the approach of expansion of participation with the approach of model workplaces to capitalise on the model workplace successes to expand company-wide in steps; (iii) It focuses on each company's preparation where the self-organising process phase is distinguished from the self-practicing phase; (iv) It assumes expansion of KAIZEN from one company to related companies in its supply-chain. These can be viewed as expansion of KAIZEN from a point to a line or one-dimensional expansion.

In the next phase, it is expected that steps be developed for two-dimensional expansion from a line to a plane, and for three-dimensional expansion that includes quality-wise upgrading of KAIZEN activities. One domain of measures for KAIZEN expansion is institutionalisation. It will include setting up of an organisation which will organise objectives of KAIZEN activities and overall planning of KAIZEN activities at national or regional levels, as well as establishing of a research institution to upgrade KAIZEN activities. It may address coordination of roles among stakeholder institutions. However, institutionalisation alone will not work without regard to the human factor. It is the men and women in the organisations who actually work and execute what the organisations are supposed to deliver. An organisation should manage its human resources in alignment with the organisation activity goals and, in so doing, should strive to create a motivated workforce. Workplace KAIZEN is in part an answer to improving employee motivation. However, challenges will lie ahead in terms of changes in more basic parts of mind-set and attitude that are deeply rooted in the societal norms and culture. Collaborative teamwork spirit that promotes collaboration in creating rules, respecting and observing the rules and improving the rules may be one such example. The issues in relation to mind-set and attitude may be pursued in the context of a national movement. Some study may be required in this area to identify what changes and transformation are specifically needed in the people's mind-set in order for KAIZEN to effectively serve the purpose of quality improvement in Ethiopia.

5) What is expected of the next project

In relation to what was accomplished in this Study, the following are what the KU members and their newly assigned colleagues will be expected to do in the next KAIZEN cooperation project.

- The KU members who have acquired knowledge and skills of KAIZEN so far in this Study are expected to continue their activities and become the teachers in the training of trainers of

KAIZEN. To do this, KU should organise itself to better enable the KU members to have as many workplace experiences as possible and accumulate them. At the same time the KU members should capability to develop new tools and methods that are needed in the workplaces they help.

- Including the manual and the audio-visual materials, KAIZEN's introductory material collection should be developed that is easy to use by all Ethiopian industries to introduce KAIZEN to their enterprises.
- A management KAIZEN guidance framework should be developed to support companies with their capabilities in the area of Fundamental Enablers on Recurrent KAIZEN Agenda.
- A KAIZEN promotion framework with collaboration with relevant organisations should be established based on the KAIZEN institutional framework.
- Participation in KAIZEN National Movement will be also expected.

With these challenges lying ahead, all the members of the JICA study team are highly confident of all the KU members' continued success in the dissemination phase of KAIZEN in Ethiopia as the core members of a new institution that is the centre of excellence for Ethiopia's KAIZEN practice.