

**Federal Democratic Republic of Ethiopia  
Ethiopian Kaizen Institute (EKI)**

**THE PROJECT ON CAPACITY DEVELOPMENT  
FOR KAIZEN IMPLEMENTATION FOR QUALITY  
AND PRODUCTIVITY IMPROVEMENT  
AND COMPETITIVENESS ENHANCEMENT  
IN THE FEDERAL DEMOCRATIC REPUBLIC  
OF ETHIOPIA**

**PROJECT COMPLETION REPORT**

**JULY, 2020**

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)**

**JAPAN DEVELOPMENT SERVICE CO., LTD (JDS)**

**JAPAN PRODUCTIVITY CENTER (JPC)**

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**The Project on Capacity Development for KAIZEN Implementation for Quality  
and Productivity Improvement and Competitiveness Enhancement  
in the Federal Democratic Republic of Ethiopia  
Project Completion Report**

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3. Concept and Application of Kaizen Indicator
4. Implementation Manual of Intermediate-level (Level 2) Kaizen Training
5. Evaluation Guideline for Trainees of Intermediate-level Kaizen
6. Kaizen Consultant Certification, Accreditation and Registration System (CARS) Guideline, Release 1.2
7. Consultant Evaluation Framework

Separate Volume II: Products (Training Materials)

Material for Classroom Training (CRT) of Intermediate-level Kaizen

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# MAP

## Project Area

● Principal Cities



## ABBREVIATIONS

Abbreviations	English/ Spanish
AACKI	Addis Ababa City Kaizen Institute
BSC	Balanced Scorecard
CARS	Kaizen Consultant Certification, Accreditation and Registration System
CFT	Cross Functional Team
CoE	Center of Excellence
C/P	Counterpart
C/RKI	City/Regional Kaizen Institutes
CRT	Classroom Training
CSC	Civil Service Commission
DDMKI	Dire Dawa Management and Kaizen Institute
EDRI	Ethiopian Development Research Institute
EIEA	Ethiopian Industrial Engineers Association
EKI	Ethiopian Kaizen Institute
FeTA	Federal TVET Agency
GRIPS	National Graduate Institute for Policy Studies
GTP2	2 <sup>nd</sup> Growth Transformation Plan
ICT	In Company Training
IE	Industrial Engineering
INTI	Instituto Nacional de Tecnología Industrial
ISO	International Organization for Standardization
JCC	Joint Coordinating Committee
JDS	Japan Development Service Co., Ltd.
JICA	Japan International Cooperation Agency
JIPM	Japan Institute of Plant Maintenance
JMA	Japan Management Association
JPC	Japan Productivity Center
JUSE	Union of Japanese Scientists and Engineers
KPT	Kaizen Promotion Team
LIDI	Leather Industry Development Institute
MIDI	Metal Industry Development Institute
MoI	Ministry of Industry
MoPSHRD	Ministry of Public Service and Human Resource Development
MoTI	Ministry of Trade and Industry
MPC	Malaysia Productivity Corporation
MSEs	Micro and Small Enterprises
NEPAD	New Partnership for Africa's Development
OEE	Overall equipment effectiveness
OJT	On-the-Job Training
PDM	Project Design Matrix
PSM	Progress Sharing Meeting
QC	Quality Control
QCC	Quality Control Circle
TICAD	Tokyo International Conference on African Development
TIDI	Textile Industry Development Institute
ToT	Training of Trainers
TPM	Total Productive Maintenance
TPS	Toyota Production System
TQM	Total Quality Management
TVET	Technical Vocational Education and Training

## PHOTO



6th Joint Coordinating Committee



Invitation to Japan to the Minister in 2017



Invitation to Japan: TICAD7 Side Event in 2019



Training in Japan



Third country training in Argentina



Third country training in Malaysia



Intermediate-level Kaizen training: CRT

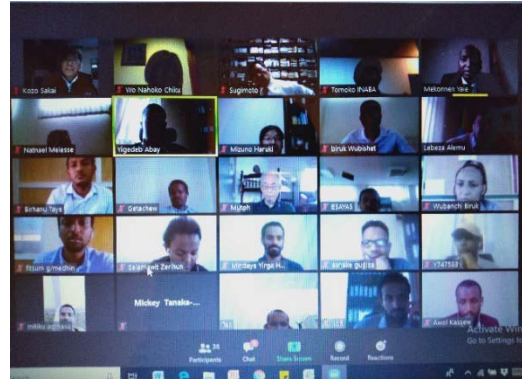


Intermediate-level Kaizen Training: ICT





Intermediate-level Kaizen Training: ICT



Intermediate-level Kaizen Training: Final Progress Sharing Meeting via Zoom



Kaizen Ph.D. Ceremonial Photo



1st Kaizen Knowledge Sharing Seminar



CARS Paper Test



CARS Certification Awarding Ceremony



5S Leader / 5SMaster Verification Examination



Survey on Productivity Indicators



Kaizen Month Seminar



5th Kaizen Awards Ceremony



Kaizen seminar for the Djiboutian officials



## **Introduction**

The Federal Democratic Republic of Ethiopia (hereinafter referred to as “Ethiopia”) has been achieving an annual two digit economic growth rate since the early 2000’s. The breakdown of GDP by sector shows that the industrial sector, particularly the manufacturing sector, accounts for as small as some 5% while both the agriculture and service sectors account for approximately 40% each. Such a low share is caused by the low level of quality and productivity which have been barriers to export promotion and the promotion of domestic as well as inward foreign investment. The GTP2 (2nd Growth and Transformation Plan: 2015/2016 – 2019/2020) lists the improvement of productivity, quality and competitiveness as the key to achieving the structural reform of Ethiopia’s economy and clearly indicates KAIZEN as a principal tool to achieve such objective.

As Japan’s assistance in the above context, JICA implemented the Study on Quality and Productivity Improvement (KAIZEN) (2009 – 2011), followed by the Project on Capacity Building for the Dissemination of Quality and Productivity Improvement (KAIZEN) (2011 – 2014) as a technical cooperation project aimed at establishing a mechanism to disseminate KAIZEN activities led by the EKI (Ethiopian Kaizen Institute). Moreover, in response to a significant increase of the staff members of the EKI and the growing demand for KAIZEN, the Project on Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement (hereinafter referred to as “the Project”) was launched in July, 2015 for a period of five years. The Project has been aiming at improving the industrial competitiveness of Ethiopia through wide-ranging efforts, including strengthening of the EKI’s management capacity, teaching of more advanced KAIZEN technologies to solve the problems faced by enterprises and the establishment of a qualification certification system for consultants. The Project has the status of an official cooperation project of Japan to embody Japan’s intention expressed at the Fifth Tokyo International Conference on African Development (TICAD V) in 2013 to establish 10 industrial resource development centres throughout Africa. The outputs of the project-related activities in these five years are described next.

### **1. Outline of the Project**

#### **1.1 Project Objectives**

The overall goal, purpose and expected outputs of the Project are listed below.

< Overall Goal >

The quality and productivity in the targeted industries<sup>1</sup> are improved, leading to enhancement of Ethiopia’s industrial competitiveness.

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<sup>1</sup> The GTP2 assumes export industries and import substitution as the target industries.

### < Project Purpose >

KAIZEN practitioners are trained in both the private and public sectors through the KAIZEN dissemination system led by the EKI.

### < Outputs >

1. The EKI's (including its regional network) management capacity for KAIZEN dissemination is enhanced through the accumulation and standardization of best practices.
2. The EKI is able to provide intermediate-level KAIZEN training and consultancy services for the private and public sectors.
3. A coordinated system (vertical and horizontal)<sup>2</sup> is put in place whereby the quality of the KAIZEN training and consultancy services provided by the EKI and other institutions is ensured and KAIZEN dissemination is promoted at the national level.

## 1.2 Work Period and Project Area

- Work Period

July, 2015 to June, 2017 (Phase 1: Establishment of Mechanism) ——— Phase 1 Contract  
July, 2017 to June, 2019 (Phase 2: Full-scale Operation of Mechanism) } Phase 2 Contract  
July, 2019 to June, 2020 (Phase 3: Self-reliant Management)

- Project Area

Ethiopia as a whole

## 1.3 Project Implementing Agency, Stakeholder Organizations and Brief Overview of the EKI

(1) Project Implementing Agency and Stakeholder Organizations in Ethiopia

- Project Implementing Agency in Ethiopia: Ethiopian KAIZEN Institute (EKI)
- Stakeholder Organizations in Ethiopia
  - Civil Service Commission
  - Ministry of Public Service and Human Resource Development: MoPSHRD
  - Ministry of Trade and Industry: MoTI (Former Ministry of Industry)
  - Ministry of Science and Higher Education: MoSHE (Former Ministry of Education)
  - Federal TVET Agency: FeTA

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<sup>2</sup> This system will be designed to continually promote KAIZEN and will incorporate the development of a certification and registration system for qualified consultants and the development of a mechanism to provide follow-up guidance for client enterprises.

(2) Brief Overview of the Competent Authority for the EKI

The EKI, which acts as the C/P organization, was originally established in October, 2011 under the jurisdiction of the Ministry of Industry (MoI) by upgrading the KAIZEN Unit (KU) of the MoI to a permanent organization for the purpose of disseminating quality and productivity improvement (Kaizen) throughout Ethiopia. While it started as an organization of the MoI, it was transferred to the Ministry of Public Service and Human Resources Development (MoPSHRD) following the governmental reorganization in October, 2015 so that the practice of Kaizen could spread to industries beyond manufacturing which was controlled by the MoI.

The MoPSHRD was formerly the Ministry of Civil Service and the scope of its business was expanded following the change of its name. Mr. Aster Mamo appointed Minister of the MoPSHRD in April, 2014 also acts as the Deputy Prime Minister and is responsible for the execution of the role assigned to the MoPSHRD as the ministry leading « the reform of governance » which is the main objective of the governmental reorganization. Subsequently in October, 2016, Prime Minister Hailemariam declared a state of emergency in response to the escalation and prolongment of anti-government protests. He formed a new cabinet in November, 2016 and Mr. Tadesse Chaffo assumed the position of Minister of the MoPSHRD.

Much later on 15<sup>th</sup> February, 2018, Prime Minister Hailemariam suddenly announced his resignation which was followed by a declaration of a state of emergency as a measure designed to prevent any worsening of civil order due to a change of the prime minister. On 27<sup>th</sup> March, Dr. Abiy was selected as the head of the governing party and he as the new prime minister inaugurated a new cabinet 19<sup>th</sup> April. The number of minister decreased by one from 31 to 30. Four new ministers were moved from the ministerial posts of other ministries while 12 were newly appointed. Mr. Tadesse retained his post as Minister of the MoPSHRD. The state of emergency was lifted on 2<sup>nd</sup> June, 2018 following the restoration of civil order.

On 16<sup>th</sup> October, 2018, further reorganization of government ministries and agencies took place, reducing the number of ministries to 20 and half of their ministerial posts were occupied by women. The MoPSHRD was upgraded to the Civil Service Commission directly controlled by the Prime Minister's Office and Mr. Afo Bezabin Gebreyes was appointed Commissioner<sup>3</sup>. The EKI, now placed under the Civil Service Commission, is facing a situation where it is required to provide Kaizen services for such sectors as public services, etc. other than the manufacturing industry in the private sector.

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<sup>3</sup> At this time, Mr. Tadesse became the Speaker of the Lower House (House of People's Representatives), of which the status is equivalent to that of the Prime Minister. His continued interest in KAIZEN was apparent when he later attended a JCC meeting as the chairman on behalf of the Commissioner of the Civil Service Commission who could not attend the JCC. The speech delivered by Professor Hiroshi Osada to the Lower House in October, 2019 was in response to a request initially made by Mr. Tadesse when the latter was the Minister of the MoPSHRD.

(3) Brief Overview of the EKI

In August, 2015 when the Project commenced, the EKI had a total strength of 105 staff members of which 72 were consultants. In August, 2016, it had a total strength of 110 staff members with the addition of five new administrative staff members (the number of consultants remains the same). Subsequently, new staff members were recruited. As of June, 2020, the total strength of the EKI is 154 staff members of which 109 are consultants.

In March, 2016, the EKI underwent reorganization with an increase of the number of deputy director generals from two to five and a large increase of the number of management positions. As the EKI plans to expand to more than 200 staff members in the future, the latest reorganization can be described as a step towards a larger and stronger organization. At the same time, Mr. Getahun Tadesse who had held the position of Director General of the EKI since its original established retired in October, 2016 and this position was then filled by Mr. Mekonnen Yaie who had been the Deputy Director General of the Capacity Building and Regional Assistance Sector.

The latest organizational structure of the EKI is shown below.

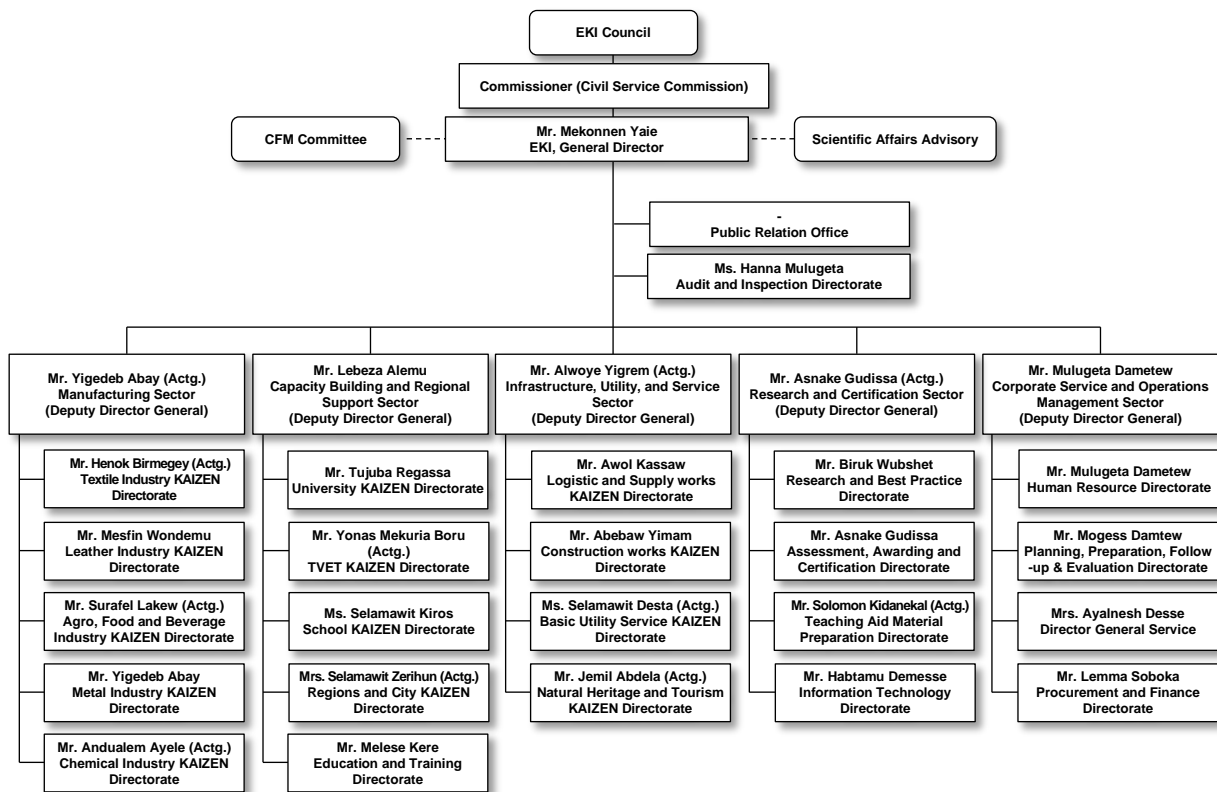


Fig-1 Latest Organizational Structure of the EKI (June, 2020)

Table-1 shows the staff strength by sector (department), comprising a total of 154 staff members, as of June, 2020. 5 staff members work in the principal offices consisting of the Office of the EKI Director General, the Public Relations Office and the Audit and Inspection Directorate. 33 staff

members work in the Corporate Service and Operation Sector responsible for the overall operation of the EKI while 21 staff members, including consultants / researchers, work in the Research and Certificate Sector. A total of 95 staff members, including 88 consultants, work in the three sectors, i.e. Manufacturing Sector, Capacity Building and Regional Assistance Sector and Infrastructure, Utility and Service Sector.

Table-1 Staff Strength by Department of the EKI

(As of June, 2020)

Department	Number of Staffs	Remarks
<b>EKI General Director</b>	<b>2</b>	
General Director	1	
Deputy Director General	0	The former Deputy Director General Gebremeskel assumed the position of the Director General of the Federal Urban Job Creation and Food Security Agency.
Environment Safety Officer (Health Officer, Childcare/ daycare)	0	
Secretary / Staff	1	
<b>Public Relation and Information Office</b>	<b>3</b>	
<b>Audit and Inspection Directorate</b>	<b>1</b>	
<b>Manufacturing Sector</b>	<b>35 (34)</b>	
Deputy Director General	1	Also acts as the Director General for the Chemical Industry KAIZEN Directorate
Textile Industry KAIZEN Directorate	7	
Leather Industry KAIZEN Directorate	7	
Agro, Food and Beverage Industry KAIZEN Directorate	6	
Metal Industry KAIZEN Directorate	7 (6)	Also acts as the Deputy Director General
Chemical Industry KAIZEN Directorate	7	
<b>Capacity Building and Regional Support Sector</b>	<b>31</b>	
Deputy Director General	1	
University KAIZEN Directorate	7	
TVET KAIZEN Directorate	6	
School KAIZEN Directorate	7	
Regions and City KAIZEN Directorate	5	
Education and Training Directorate	5	
<b>Infrastructure, Utility, and Service Sector</b>	<b>30</b>	
Deputy Director General	1	
Construction works KAIZEN Directorate	8	
Logistic and Supply works KAIZEN Directorate	7	
Basic Utility Service KAIZEN Directorate	6	
Natural Heritage and Tourism KAIZEN Directorate	8	
<b>Research and Certification Sector</b>	<b>22 (21)</b>	
Deputy Director General	1	Also acts as the Awarding, Recognition and Certificate Directorate
Research and Best Practice Directorate	7	
Assessment, Awarding and Certification Directorate	7 (6)	
Teaching Aid Material Preparation Directorate	4	
Information Technology Directorate	3	
<b>Corporate service and Operations Management Sector</b>	<b>33</b>	
Deputy Director General	1	
Human Resource Directorate	4	
Planning, Preparation, Follow-up and Evaluation Directorate	2	
Properties and General Service	18	
Procurement and Finance Directorate	8	
<b>Total</b>	<b>156 (154)</b>	

The EKI consultants working in the three Kaizen-related sectors are classified into five ranks, ranging from the most superior lead consultant to senior consultant, consultant, associate consultant and junior consultant. Consultants belonging to the Research and Certificate Sector are given the title of “researcher” and are classified into five ranks as in the case of consultants. These five categories are mainly used for the purpose of differentiating salary packages, etc.

Table-2 shows the number of consultants (including researchers) by sector.

Table-2 Number of Consultants by Sector

(as of June, 2020)

Item		Director General	Lead consultant / Lead Researcher	Senior consultant / Senior Researcher	Consultant/ Researcher	Associate consultant / Associate Researcher	Junior consultant / Junior Researcher	Total
Manufacturing Sector	Textile Industry KAIZEN Directorate	0	1	1	4	0	1	7
	Leather Industry KAIZEN Directorate	1	1	1	3	0	1	7
	Agro, Food and Beverage Industry KAIZEN Directorate	0	0	3	3	0	0	6
	Metal Industry KAIZEN Directorate	1	1	1	3	0	1	7
	Chemical Industry KAIZEN Directorate	1	2	1	2	0	1	7
	Total	3	5	7	15	0	4	34
Capacity Building and Regional Support Sector	University KAIZEN Directorate	1	2	1	3	0	0	7
	TVET KAIZEN Directorate	0	1	2	1	0	2	6
	School KAIZEN Directorate	1	1	2	2	0	1	7
	Regions and City KAIZEN Directorate	0	0	1	1	1	2	5
	Total	2	4	6	7	1	5	25
Infrastructure, Utility, and Service Sector	Construction works KAIZEN Directorate	1	1	1	3	0	2	8
	Logistic and Supply works KAIZEN Directorate	1	0	2	3	0	1	7
	Basic Utility Service KAIZEN Directorate	0	1	1	3	0	1	6
	Natural Heritage and Tourism KAIZEN Directorate	0	0	1	5	0	2	8
	Total	2	2	5	14	0	6	29
Research and Certification Sector	Research and Best Practice Directorate	1	1	1	3	0	1	7
	Assessment, Awarding and Certification Directorate	1	0	2	3	0	1	7
	Teaching Aid Material Preparation Directorate	0	1	0	2	1	0	4
	Information Technology Directorate	1	0	2	0	0	0	3
	Total	3	2	5	8	1	2	21
Grand total		10	13	23	44	2	17	109

Following the reorganization in March, 2016, additional positions of deputy director general were created which have been filled by excellent consultants. This means that those consultants promoted to the position of deputy director general must conduct their managerial duties in addition to their consulting work.



## 1.4 Background of the Project

At the time of the commencement of the Project in 2015, the Federal Democratic Republic of Ethiopia (hereinafter simply referred to as “Ethiopia”) had an average annual GDP growth rate of approximately 10.7% in the previous four years and was a typical African country with continual high growth. A closer look at the composition of the GDP reveals that both agriculture and services account for more than 40% with industries accounting for only 10 – 14%. With the manufacturing sector accounting for only 3 – 4% of the GDP, the industrial share of the GDP in Ethiopia was much lower than the average of some 30% for sub-Saharan countries. The promotion of exports and domestic as well as inward investment had been hindered not only by the slow development of the manufacturing sector but also by the low level of product quality and productivity. The enhancement of Ethiopia’s competitiveness through improvement of the product quality and productivity was, therefore, essential.

The five year Growth and Transformation Plan (GTP) formulated in 2010 clearly indicates the intended direction for transformation of the economic structure towards industrialization. Meanwhile, it has been confirmed that the current five year GTP (GTP2: 2015/16-2019/20) which incorporates recommendations made through the Policy Dialogue on the Industrial Development of Ethiopia<sup>4</sup> lists improvement of product quality, productivity and competitiveness as the key to achieving the structural reform of the economy and clearly indicates KAIZEN as a principal tool to achieve such objective.

As Japanese ODA in the above context, JICA implemented the Project on Capacity Building for the Dissemination of Quality and Productivity Improvement (KAIZEN) (2011 – 2014) (hereinafter referred to as “the previous project”) following the Study on Quality and Productivity Improvement (KAIZEN) (2009 – 2011). The former was a technical cooperation project designed to establish a mechanism to disseminate KAIZEN activities primarily led by the EKI to private enterprises, etc. in a sustainable manner. Consequently, the project purpose of “establishing a system to disseminate KAIZEN to private enterprises in a sustainable manner” was achieved, enabling the EKI to implement its own KAIZEN guidance, mainly featuring basic KAIZEN technologies. The project completion report identified several pending issues in its recommendations, including the further development of the EKI’s own management capacity in preparation for a substantial increase of its staff members and increasing need for KAIZEN, further training of the EKI’s consultants to equip them with intermediate-level KAIZEN technologies (TQM, TPS, etc.) to assist enterprises to solve pressing problems and the establishment of a certification, accreditation and registration system (CARS) for consultants to correspond to the level of individual consultants to ensure the quality of the KAIZEN guidance provided by the EKI’s own

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<sup>4</sup> The Policy Dialogue on the Industrial Development of Ethiopia is a framework for dialogue between Japan and Ethiopia which started in 2009 in response to a request made by late Prime Minister Meles Zenawi. Themes of strong interest for the Government of Ethiopia are selected in advance and dialogue on the planning and implementation of policies with reference to Japanese and Asian examples takes place every six months at three levels involving prime ministers, ministers and working officials. Professor Kenichi Ohno of the National Graduate Institute for Policy Studies (GRIPS) represent the Japanese side.

KAIZEN consultants (hereinafter simply referred to as “consultants”) who lead the dissemination of KAIZEN activities to enterprises.

In the face of these pending issues and in response to the intention of the Government of Ethiopia to further enhance the country’s industrial competitiveness, the Government of Japan has approved the Project as a new technical cooperation project, considering the Project to be a concrete step for Japan’s ODA to begin the TICAD human resources development centres<sup>5</sup> initiative expressed at the Fifth Tokyo International Conference on African Development (TICAD V) held in 2013.

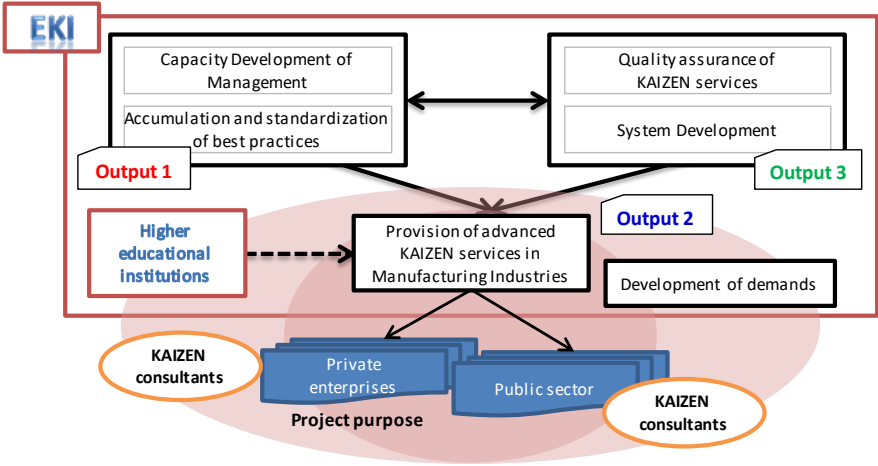


Fig.-2 Project Concept

**1.5 Historical Changes of the PDM**

The PDM for the Project has been revised several times. A major revision took place in June, 2016 and December, 2016. In June, 2016, Output 1-5 “Enhancement of the management capacity of the EKI’s senior officials” was added as part of the activities to achieve Output 1. In December, 2016, it was agreed to (i) divide “Advanced KAIZEN” into “intermediate level KAIZEN” and “advanced level KAIZEN” with a view to setting intermediate level KAIZEN as the target level for technology transfer under the Project and (ii) use KAIZEN indicators (KIs) to measure the results of KAIZEN implementation for eight KAIZEN targets. Consequently a KI was set for each target (see Table-3). The historical changes of the PDM are shown in Table-4.

<sup>5</sup> As a support measure adopted at the TICAD V held in June, 2003, Japan expressed its intention to establish 10 TICAD industrial resource development centre throughout Africa. A further commitment was made in January, 2014 when Japan expressed its intention to enhance the functions of the EKI to enable it to operate as the first such centre in Africa.

Table-3 Kaizen Indicators

No.	EKI's Kaizen Target	Kaizen Indicators (KI)		Distinction
1	Quality	Quality Kaizen Indicator	QKI	Core Indicator
2	Productivity	Productivity Kaizen Indicator	PKI	
3	Cost	Cost Kaizen Indicator	CKI	
4	Delivery	Delivery Kaizen Indicator	DKI	
5	Safety	Social Kaizen Indicator	SKI	Social indicator
6	Morale	Morale Kaizen Indicator	MKI	
7	Environment	Environment Kaizen Indicator	EKI	Social indicator
8	Gender	Gender Kaizen Indicator	GKI	
	<b>Overall</b>	<b>Overall Kaizen Indicator</b>	<b>OKI</b>	<b>CS</b>

Table-4 Historical Changes of PDM

Version	Date of revision	Points and process of revision
Ver. 0	-	- Original version.
Ver. 1	June. 30, 2016	- The addition of Activity 1-5 (Management capacity of EKI management layer is enhanced). This was discussed and agreed in the 1 <sup>st</sup> JCC on June 25.
Ver. 2	Dec. 15, 2016	- Defined the level of Kaizen and divided “advanced KAIZEN” into two levels: “intermediate level” and “advanced level”; - Set the “intermediate level” Kaizen as the target level of the project; - Defined Kaizen indicators (KIs) to measure the result of Kaizen implementation; - Set the target values of all verifiable indicators, except one indicator of Output 3, which is the number of certified consultants. - All the above was endorsed in the 2 <sup>nd</sup> JCC on Dec. 15.
Ver. 2-1	June 13, 2017	- In the 3 <sup>rd</sup> JCC (April 25), the establishment of CARS was endorsed. After that, the remaining one indicator of Output 3 ( <i>Indicator 3.1: A grading, certifying and registering system for KAIZEN consultants is prepared, and 174 consultants are certified and registered</i> ) was discussed and endorsed in joint monitoring.

The original PDM and final PDM after several revisions are shown in the next pages. In this report, the achievement situation of the project purpose and outputs is evaluated and reported based on the indicators.

**Logical Framework (Project Design Matix: PDM)**

Project Title: The Project on Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement  
 Implementation Agency: Ethiopian Kaizen Institute (EKI)  
 Target Group: EKI and regional EKI unit staff members, TVET Trainers, academic institutions, private enterprises and other institutions that receive training and consulting services.  
 Period of Project: Five years from the first Japanese expert dispatched  
 Project Site: Entire Ethiopia

Version 0

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achivement	Remarks
<b>[Overall Goal]</b> Quality and productivity in targeted industries are improved, leading to an enhancement of industrial competitiveness in Ethiopia.	<ol style="list-style-type: none"> <li>1. 20% of LMEs have continued K.AIZEN for more than two years.</li> <li>2. 10% of SME have continued KAIZEN for more than two years.</li> <li>3. The productivity of the enterprises that received KAIZEN training or consulting services during the previous two years increased by XX% on average compared to before KAIZEN.</li> </ol>	<ol style="list-style-type: none"> <li>1. Sample interviews</li> <li>2. Sample interviews</li> <li>3. Sample company visits</li> </ol>			
<b>[Project Purpose]</b> KAIZEN practitioners are developed in both private and public sectors through the KAIZEN dissemination system led by EKI.	<ol style="list-style-type: none"> <li>1. XX consultants are certified and registered as advanced KAIZEN consultants.</li> <li>2. The productivity of the enterprises that received KAIZEN training or consulting services during the Project period increased by XX% on average compared to before KAIZEN.</li> <li>3. XX enterprises are involved in advanced KAIZEN activities.</li> <li>4. XX managers and workers are involved in advanced KAIZEN activities</li> </ol>	<ol style="list-style-type: none"> <li>1. Registration record</li> <li>2. Company visits (project record)</li> </ol>	- Business environment for Ethiopian private enterprises does not deteriorate drastically.		
<b>[Outputs of the Project]</b> <ol style="list-style-type: none"> <li>1. EKI's (including its regional network) management capacity in KAIZEN dissemination is enhanced through the accumulation and standardisation of best practices.</li> <li>2. EKI becomes able to provide advanced KAIZEN training and consultancy services to private and public sectors</li> <li>3. A coordinated system (vertical and horizontal) is put in place whereby quality of KAIZEN training and consultancy services provided by EKI and other institutions is ensured and KAIZEN dissemination is promoted at national level</li> </ol>	<ol style="list-style-type: none"> <li>1-1 International best practices and performances are compiled as a reference.</li> <li>1-2 A KAIZEN technologies dissemination plan is prepared and being implemented.</li> <li>1-3 KAIZEN implementation guidelines are prepared, followed and revised.</li> <li>2-1 An overview of the sectors / sub-sectors targeted for advanced KAIZEN training and consultancy services is prepared.</li> <li>2-2 Implementation plans for advanced KAIZEN training and consultancy services are developed and put into practice through BSC.</li> <li>2-3 Course materials and manuals for CRT of advanced level are prepared</li> <li>2-4 XX CRT and ICT of advanced level have been conducted.</li> <li>2-5 Evaluation reports on CRT and ICT of advanced level are produced twice.</li> <li>3-1 A grading, certifying and registering system for KAIZEN consultants is prepared, and XX consultants are certified and registered.</li> <li>3-2 KAIZEN curricula, manuals and teaching materials are reviewed every year.</li> <li>3-3 A system for collecting, compiling, and utilizing information on KAJZEN practices is put in place and utilized.</li> <li>3-4 A study report on the improvement trends of and EKI's contribution made to the Ethiopian industry sector is produced.</li> <li>3-5 EKI KAIZEN magazines are published once a year.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Report produced</li> <li>1-2 Plan and interview</li> <li>1-3 Guidelines and interview</li> <li>2-1 Report produced</li> <li>2-2 Plan and BSC record</li> <li>2-3 Course materials and manuals produced</li> <li>2-4 Project record</li> <li>2-5 Evaluation reports</li> <li>3-1 Plan and BSC record</li> <li>3-2 Revised manuals and teaching materials</li> <li>3-3 Database produced and interviews</li> <li>3-4 Report produced</li> <li>3-5 Magazines published</li> </ol>	- Most of EKI Consultants who have been trained in the Project remain in the institution. - Business environment for Ethiopian private enterprises does not deteriorate drastically.		

[Activities]	[Input]	[Prerequisite]
<p>1.1 EKI studies operational mechanisms in Japanese and other overseas institutions promoting quality and productivity improvement, especially advanced KAIZEN technologies.</p> <p>1.2 Based on international best practices and performances of KAIZEN dissemination, EKI elaborates a KAIZEN technologies dissemination plan.</p> <p>1.3 EKI develops KAIZEN implementation guidelines including its decision making, planning, implementation, monitoring, and evaluation systems, and follows the guidelines in implementing the KAIZEN technologies dissemination plan.</p> <p>1.4 EKI monitors the utilization of the guidelines and refines them.</p> <p>2.1 In collaboration with relevant institutions EKI examines the overview of target sub-sectors as well as the performance of LMEs and institutions in sub-sectors which would participate in in-company training (ICT) for advanced KAIZEN training and consultancy services.</p> <p>2.2 EKI formulates implementation plans for advanced KAIZEN training and consultancy services for the sectors mentioned in 2.1.</p> <p>2.3 EKI selects KAIZEN consultants for advanced KAIZEN training and conducts classroom training (CRT) and ICT in collaboration with academic institutions.</p> <p>2.4 EKI evaluates CRT and ICT as well as learning and applying capabilities of KAIZEN consultants and undertakes adjustments.</p> <p>3.1 EKI develops a system (customized to Ethiopian needs) for grading, certifying and registering of KAIZEN consultants by referring to similar experiences in Japan and other countries, and periodically reviews it.</p> <p>3.2 EKI establishes a system for continuously evaluating and uplifting the training and consulting capabilities of KAIZEN consultants and TVET trainers as well as instructors in academic institutions.</p> <p>3.3 EKI develops a system for collecting, compiling, and utilizing information on KAIZEN practices from individual companies and institutions provided with KAIZEN training and consultancy services, including those that participated in ICT.</p> <p>3.4 Utilising data collected in the system developed in 3.3, EKI studies improvement trends of, and EKI's contribution made to, the Ethiopian industry sector at national level.</p> <p>3.5 EKI compiles the achievements and impacts it has attained and publicises them through different media.</p> <p>3.6 EKI develops and implements programmes to exchange KAIZEN knowledge and experiences with other African countries.</p>	<p><u>Ethiopian side</u></p> <p>(a) Services of EKI's counterpart personnel and administrative personnel;</p> <p>(b) Suitable office space with necessary equipment;</p> <p>(c) Supply or replacement of any other materials necessary for the implementation of the Project than equipment provided by JICA;</p> <p>(d) Information as well as support in obtaining medical services;</p> <p>(e) Credentials or identification cards;</p> <p>(f) Available data (including maps and phonographs) and information related to the Project; and</p> <p>(g) Running expenses necessary for the implementation of the Project.</p> <p><u>Japanese side</u></p> <p>(a) Dispatch of Experts Expertise of members will include but not be limited to the following: Chief advisor; Institution development; Quality and productivity development (advanced KAIZEN); System development; Advisor(s) to academic institutions; and Activity coordination; and Other necessary expert(s).</p> <p>(b) Training Counterpart training in Japan and /or third countries</p> <p>(c) Equipment Minibuses</p>	<p>- A sufficient budget is secured to at least maintain the EKI's current activities.</p> <p>- Most of EKI Consultants who were trained in the JICA projects remain in the institution.</p> <hr/> <p>Issues and Countermeasures</p>

**Logical Framework (Project Design Matix: PDM)**

Project Title: The Project on Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement  
 Implementation Agency: Ethiopian Kaizen Institute (EKI)  
 Target Group: EKI and regional EKI unit staff members, TVET Trainers, academic institutions, private enterprises and other institutions that receive training and consulting services.  
 Period of Project: Five years from the first Japanese expert dispatched  
 Project Site: Entire Ethiopia

Version 2-1, Dated June 13, 2017

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
<p><b>[Overall Goal]</b>                      Quality and productivity in targeted industries are improved, leading to an enhancement of industrial competitiveness in Ethiopia.</p>	<p>1. 20% of LMEs have continued KAIZEN for more than two years.                      2. 10% of SME have continued KAIZEN for more than two years.                      3. <b>The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the previous two years increased by 10% on average compared to before KAIZEN.</b></p>	<p>1. Sample interviews                      2. Sample interviews                      3. Sample company visits</p>	
<p><b>[Project Purpose]</b>                      KAIZEN practitioners are developed in both private and public sectors through the KAIZEN dissemination system led by EKI.</p>	<p>1. <b>81 consultants complete intermediate-level KAIZEN training; and 32 consultants are certified and registered as intermediate-level Kaizen consultants.</b>                      2. <b>The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the Project period increased by 20% on average compared to before KAIZEN.</b>                      3. <b>30 enterprises are involved in intermediate-level KAIZEN activities.</b>                      4. <b>360 managers and workers are involved in intermediate-level KAIZEN activities.</b></p>	<p>1. Registration record                      2. Company visits (project record)</p>	<p>- Business environment for Ethiopian private enterprises does not deteriorate drastically.</p>
<p><b>[Outputs of the Project]</b>                      1. EKI's (including its regional network) management capacity in KAIZEN dissemination is enhanced through the accumulation and standardisation of best practices.                      2. EKI becomes able to provide <b>intermediate-level</b> KAIZEN training and consultancy services to private and public sectors                      3. A coordinated system (vertical and horizontal) is put in place whereby quality of KAIZEN training and consultancy services provided by EKI and other institutions is ensured and KAIZEN dissemination is promoted at national level</p>	<p>1-1 International best practices and performances are compiled as a reference.                      1-2 A KAIZEN technologies dissemination plan is prepared and being implemented.                      1-3 KAIZEN implementation guidelines are prepared, followed and revised.                      2-1 An overview of the sectors / sub-sectors targeted for <b>intermediate-level</b> KAIZEN training and consultancy services is prepared.                      2-2 Implementation plans for <b>intermediate-level</b> KAIZEN training and consultancy services are developed and put into practice through BSC.                      2-3 Course materials and manuals for CRT of <b>intermediate-level</b> are prepared                      2-4 <b>Five (5) CRT and ICT of intermediate-level have been conducted.</b>                      2-5 Evaluation reports on CRT and ICT of <b>intermediate-level</b> are produced twice.                      3-1 <b>A grading, certifying and registering system for KAIZEN consultants is prepared, and 174 consultants are certified and registered.</b>                      3-2 KAIZEN curricula, manuals and teaching materials are reviewed every year.                      3-3 A system for collecting, compiling, and utilizing information on KAIZEN practices is put in place and utilized.                      3-4 A study report on the improvement trends of and EKI's contribution made to the Ethiopian industry sector is produced.                      3-5 EKI KAIZEN magazines are published once a year.</p>	<p>1-1 Report produced                      1-2 Plan and interview                      1-3 Guidelines and interview                      2-1 Report produced                      2-2 Plan and BSC record                      2-3 Course materials and manuals produced                      2-4 Project record                      2-5 Evaluation reports                      3-1 Plan and BSC record                      3-2 Revised manuals and teaching materials                      3-3 Database produced and interviews                      3-4 Report produced                      3-5 Magazines published</p>	<p>- Most of EKI Consultants who have been trained in the Project remain in the institution.                      - Business environment for Ethiopian private enterprises does not deteriorate drastically.</p>

[Activities]	[Input]	
<p>1.1 EKI studies operational mechanisms in Japanese and other overseas institutions promoting quality and productivity improvement, especially <b>intermediate-level</b> KAIZEN technologies.</p> <p>1.2 Based on international best practices and performances of KAIZEN dissemination, EKI elaborates a KAIZEN technologies dissemination plan.</p> <p>1.3 EKI develops KAIZEN implementation guidelines including its decision making, planning, implementation, monitoring, and evaluation systems, and follows the guidelines in implementing the KAIZEN technologies dissemination plan.</p> <p>1.4 EKI monitors the utilization of the guidelines and refines them.</p> <p>1.5 Management capacity of EKI management layer is enhanced.</p> <p>2.1 In collaboration with relevant institutions EKI examines the overview of target sub-sectors as well as the performance of LMEs and institutions in sub-sectors which would participate in in-company training (ICT) for <b>intermediate-level</b> KAIZEN training and consultancy services.</p> <p>2.2 EKI formulates implementation plans for <b>intermediate-level</b> KAIZEN training and consultancy services for the sectors mentioned in 2.1.</p> <p>2.3 EKI selects KAIZEN consultants for <b>intermediate-level</b> KAIZEN training and conducts classroom training (CRT) and ICT in collaboration with academic institutions.</p> <p>2.4 EKI evaluates CRT and ICT as well as learning and applying capabilities of KAIZEN consultants and undertakes adjustments.</p> <p>3.1 EKI develops a system (customized to Ethiopian needs) for grading, certifying and registering of KAIZEN consultants by referring to similar experiences in Japan and other countries, and periodically reviews it.</p> <p>3.2 EKI establishes a system for continuously evaluating and uplifting the training and consulting capabilities of KAIZEN consultants and TVET trainers as well as instructors in academic institutions.</p> <p>3.3 EKI develops a system for collecting, compiling, and utilizing information on KAIZEN practices from individual companies and institutions provided with KAIZEN training and consultancy services, including those that participated in ICT.</p> <p>3.4 Utilising data collected in the system developed in 3.3, EKI studies improvement trends of, and EKI's contribution made to, the Ethiopian industry sector at national level.</p> <p>3.5 EKI compiles the achievements and impacts it has attained and publicises them through different media.</p> <p>3.6 EKI develops and implements programmes to exchange KAIZEN knowledge and experiences with other African countries.</p>	<p><u>Ethiopian side</u></p> <p>(a) Services of EKI's counterpart personnel and administrative personnel;</p> <p>(b) Suitable office space with necessary equipment;</p> <p>(c) Supply or replacement of any other materials necessary for the implementation of the Project than equipment provided by JICA;</p> <p>(d) Information as well as support in obtaining medical services;</p> <p>(e) Credentials or identification cards;</p> <p>(f) Available data (including maps and phonographs) and information related to the Project; and</p> <p>(g) Running expenses necessary for the implementation of the Project.</p> <p><u>Japanese side</u></p> <p>(a) Dispatch of Experts Expertise of members will include but not be limited to the following: Chief advisor; Institution development; Quality and productivity development (advanced KAIZEN); System development; Advisor(s) to academic institutions; and Activity coordination; and Other necessary expert(s).</p> <p>(b) Training Counterpart training in Japan and /or third countries</p> <p>(c) Equipment Minibuses</p>	<p><b>[Prerequisite]</b></p> <p>- A sufficient budget is secured to at least maintain the EKI's current activities.</p> <p>- Most of EKI Consultants who were trained in the JICA projects remain in the institution.</p>

## 2. Project Inputs

### 2.1 Dispatch of Experts

The results for the dispatch of experts under the Project are shown in the following table.

Table-5 Results for the Dispatch of Experts

Name	Field	Days (MM)		
		In Japan	In Ethiopia	Total
Seiji SUGIMOTO	Chief Advisor / Institution development / System Development	73 (3.65)	1,013 (33.76)	1,086 (37.41)
Takeshi FUJITA	Vice Chief Adviser / Institution development	15 (0.75)	376 (12.53)	391 (13.28)
Kozo SAKAI	Quality and productivity improvement	33 (1.65)	679 (22.63)	712 (24.28)
Taisuke NISHIDA	Quality and productivity improvement	-	631 (21.04)	631 (21.04)
Haruki MIZUNO	Quality and productivity improvement	12 (0.60)	485 (16.17)	497 (16.77)
Tadashi MUTO	Quality and productivity improvement	12 (0.60)	53 (1.77)	65 (2.37)
Hideki TABUCHI	Quality and productivity improvement	-	367 (12.23)	367 (12.23)
Hiroshi EZAWA	Quality and productivity improvement	-	228 (7.60)	228 (7.60)
Hiroshi OSADA	Advisor to Academic Institution	73 (3.65)	42 (1.40)	115 (5.05)
Nahoko CHIKU	System Research / Support to Higher Education / Support for Institution development	45 (2.25)	799 (26.63)	844 (28.88)
Tomoyuki YAMADA	System Research	-	166 (5.53)	166 (5.53)
Tomoko INABA	System Research / Training Plan in Japan and Third Countries	47 (2.35)	283 (9.43)	330 (11.78)
Junichi ANDO	Supervision on Training Implementation	15 (0.75)	30 (1.00)	45 (1.75)
Total	-	325 (16.25)	5,152 (171.72)	5,477 (187.97)

### 2.2 Counterpart Personnel

The following table lists the counterpart personnel for the Project on the Ethiopian side, consisting of the principal staff members of the EKI and target persons for technology transfer.

Table-6 List of Counterpart Personnel

No	Name	M/F	Title	Role in the Project
<b>Top management</b>				
1	Mekonnen Yaie	M	General Director	Project Manager
2	Yigedeb Abay	M	Acting Director General, Manufacturing Sector Director, Metal Industry Kaizen Directorate	Project Counterpart
3	Asnake Gudissa	M	Acting Deputy Director General, Research and Certification Sector Director, Assessment, Awarding and Certification Directorate	Project Counterpart
4	Lebeza Alemu	M	Deputy Director General, Capacity Building and Regional Support Sector	Project Counterpart
5	Alewoye Yigrem	M	Acting Deputy Director General, Infrastructure, Unity and Service Sector	Project Counterpart
6	Mulugeta Dametew	M	Deputy Director General, Corporate Service and Operations Management Sector	Project Counterpart
<b>5<sup>th</sup> Batch intermediate-level Kaizen trainees</b>				
1	Ashenafi Tsegaye	M	Senior Consultant, Metal Directorate	5 <sup>th</sup> batch trainees
2	Demoz Abebe	F	Associate Kaizen Consultant, Leather Directorate	Idem
3	Dereje Mulatu	M	Senior Consultant, Logistics and Supply work Directorate	Idem
4	Esayas Asefa	M	Senior Consultant, TVET Directorate	Idem
5	Eyob Alebachew	M	Senior Consultant, Research and Best Practices Directorate	Idem
6	Fitsum G/Medihin	M	Senior Consultant, Basic Utility Directorate	Idem
7	Getachew Yizengew	M	Senior Consultant, University Directorate	Idem
8	Menebere Kinfe	F	Senior Consultant, Leather Directorate	Idem



No	Name	M/F	Title	Role in the Project
9	Mitiku Admasu	M	Associate Kaizen Consultant, Logistics and Supply work Directorate	Idem
10	Natnael Melese	M	Associate Kaizen Consultant, Regional and City Directorate	Idem
11	Senait Bogale	F	Associate Kaizen Consultant, Teaching Aid Material Directorate	Idem
12	Shewatsehay Agonafir	F	Associate Kaizen Consultant, Textile Directorate	Idem
13	Sofonias Zeleke	M	Senior Consultant, Natural Heritage Directorate	Idem
14	Wubanchi Biruk	F	Senior Consultant, Metal Directorate	Idem
<b>4<sup>th</sup> Batch intermediate-level Kaizen trainees</b>				
1	Dereje Aragie	M	Associate Kaizen Researcher Awarding, Recognition and Certification Directorate	4 <sup>th</sup> batch trainees 4 <sup>th</sup> batch Kaizen MSc program
2	Aman Abdulmelik	M	Associate Kaizen Consultant Basic Utility Service	Idem
3	Tewodros Genetu	M	Lead Kaizen Consultant, Basic Utility Service	Idem
4	Abebaw Yimam	M	Director, Construction Works	Idem
5	Alewoye Yigrem	M	Senior Kaizen Consultant Basic Utility Service	Idem
6	Endale Fentie	M	Senior Kaizen Consultant Construction Works	Idem
7	Yibeleal Asres	M	Associate Kaizen Consultant Logistics and Supply Works	Idem
8	Birhanu Bekele	M	Associate Kaizen Consultant Natural Heritage and Tourism	Idem
9	Daniel Hambisa	M	Associate Kaizen Consultant Regional and City Kaizen Directorate	Idem
10	Debela Tolosa	M	Associate Kaizen Consultant Schools Kaizen Directorate	Idem
11	Melat Gezahegn	F	Associate Kaizen Consultant Natural Heritage and Tourism	Idem
12	Tsadkan Areaya	F	Associate Kaizen Consultant Textile Kaizen Directorate	Idem
13	Woineshet Bekele	F	Senior Kaizen Consultant Awarding, Recognition and Certificate / RCS	Idem
14	Kedir Ahmed	M	Senior Kaizen Consultant School Directorate	Idem
15	Sinkenesh H/Giyorgies	F	Associate Kaizen Consultant Awarding, Recognition and Certificate / RCS	Idem
16	Solomon Kidanekal	M	Lead Kaizen Researcher Teaching & Training Material Preparation and Distribution	Idem
17	Shewatsehay	F	Associate Kaizen Consultant Textile Industry	She took maternity leave after CRT and joined in 5 <sup>th</sup> batch.
18	Yohannes Tekola	M	Associate Kaizen Consultant Chemical Industry	Idem
19	Habtamu Andargie	M	Associate Kaizen Consultant University Kaizen Transfer & Development Directorate	Idem
20	Zewditu Kahaliw	F	Associate Kaizen Consultant Matal Industry	Idem
<b>3<sup>rd</sup> Batch intermediate-level Kaizen trainees</b>				
1	Bedasa Fenta	M	Consultant, Chemical Kaizen Directorate	3 <sup>rd</sup> batch trainees 3 <sup>rd</sup> batch Kaizen MSc program
2	Biruk Wubshet	M	Director, Researcher, Research and Best Practice Directorate	Idem
3	Fetiya Demsis	F	Consultant, Textile Industry Kaizen Directorate	Idem
4	Genet Debebe	F	Associate Consultant, Construction Works Kaizen Directorate	Idem
5	Hanna Abera	F	Consultant, Textile Industry Kaizen Directorate	Idem
6	Mihreteab Abadi	M	Assistant Consultant, Agro Food and Beverage Industry Kaizen Directorate	Idem

No	Name	M/F	Title	Role in the Project
7	Mindaye Yirga	M	Consultant, Agro Food and Beverage Industry Kaizen Directorate	Idem
8	Nebiyat Tezera	F	Associate Consultant, Teaching aid Materials Preparation Kaizen Directorate	Idem
9	Seble G/hiwot	F	Assistant Consultant, Metal Industry Kaizen Directorate	Idem
10	Selamawit Getachew	F	Associate Consultant, School Kaizen Directorate	Idem
11	Wondwosen Yitna	M	Associate Consultant, Natural Heritage and Tourism Kaizen Directorate	Idem
12	Yohannes Zeru	M	Associate Consultant, Construction Works Kaizen Directorate	Dropped out in ICT.
13	Defar ketsela	M	Junior Consultant, AACKI (Addis Ababa City Kaizen Institute)	Idem
14	Fekadesilassie	M	Idem	Dropped out after CRT.
15	Merima Muhidin	F	Idem	Idem
16	Samuel Mesele	M	Idem	Idem
17	Anbes Alemu	M	Kaizen Consultant Level III, DDMKI (Dire Dawa Management and Kaizen Institute)	Idem
18	Yemane Solomon	M	Idem	Idem
<b>2<sup>nd</sup> Batch intermediate-level Kaizen trainees</b>				
1	Selamawit Desta	F	Senior Consultant, Basic Utility Service KAIZEN Directorate	2 <sup>nd</sup> batch trainees 2 <sup>nd</sup> batch Kaizen MSc program
2	Firehiwot Asmelash	F	Assistant Consultant, Leather Industry KAIZEN Directorate	Idem
3	Wondwosen Tefera	M	Senior Consultant, Leather Industry KAIZEN Directorate	Idem
4	Addiskidan Endale	F	Assistant Consultant, Logistic and Supply Works KAIZEN Directorate	Idem
5	Tadelech Tefera	F	Assistant Researcher, Awarding, Recognition and Certificate Directorate	Idem
6	Tigist Ayalew	F	Assistant Researcher, Research and Best Practice Directorate	Idem
7	Mesfin Wondmu	M	Director, Leather Industry KAIZEN Directorate, Manufacturing Sector	Idem
8	Tedla Giram	M	Assistant Researcher, Awarding, Recognition and Certificate Directorate	Idem
9	Tigist Tolosa	F	Senior Consultant, School Kaizen Directorate	Idem
10	Malkamu Garuma	M	Assistant Researcher, Research and Best Practice Directorate	Idem
11	Yordanos Kidanemariam	F	Assistant Consultant, Leather Industry KAIZEN Directorate	Idem
12	Bethelhem Seifu	F	Senior Consultant, Basic Utility Service KAIZEN Directorate	Idem
13	Nabon Elias	F	Assistant Consultant, Agro Food and Beverage Industry KAIZEN Directorate	Idem
14	Helen G/Mariam	F	Assistant Consultant, Chemical Industry KAIZEN Directorate	Idem
15	Birhanu Ayenew	M	Senior Consultant, Textile Industry KAIZEN Directorate	Idem
16	Meseret Teshome	F	Senior Consultant, Textile Industry KAIZEN Directorate	Idem
17	Betelhem Yitagesu	F	Assistant Researcher, Awarding, Recognition and Certificate Directorate	She dropped in ICT due to her health.
18	Seblewongel Atnafu	F	Assistant Consultant, University Kaizen Directorate	Idem
<b>1<sup>st</sup> Batch intermediate-level Kaizen trainees</b>				
1	Seblewongel Hargawin	F	Deputy Director General, Manufacturing Sector	1 <sup>st</sup> batch trainees 1 <sup>st</sup> batch Kaizen MSc program
2	Kebede Tsegaye	M	Deputy Director General, Infrastructure, Utility and Service Sector	Idem
3	Asnake Gudisa	M	Director, Agro, Food & Beverage Industry Kaizen	Idem
4	Haftu Hailu	M	Director, Chemical Industry	Idem
5	Tujuba Regasa	M	Director, Natural Heritage & Tourism Kaizen	Idem
6	Yigedeb Abay	M	Director, Metal Industry	Idem
7	Lebeza Alemu	M	Director, School Kaizen	He dropped in ICT.
8	Selamawit Kiros	F	Director, University Kaizen	Idem
9	Awol Kassaw	M	Director, Logistic & Supply	Idem
10	Andualem Ayele	M	Senior Consultant, Chemical Industry	Idem

No	Name	M/F	Title	Role in the Project
11	Fetene Getachew	M	Lead Consultant, School Kaizen	Idem
12	Firegenet Kinfe	F	Senior Consultant, Construction Works	Idem
13	Henok Birmeg	M	Senior Consultant, Manufacturing	Idem
14	Selamawit Solomon	F	Senior Consultant, Metal Industry	Idem
15	Selamawit Tilahun	F	Lead Consultant, University Kaizen	Idem
16	Selamawit Zerihun	F	Senior Consultant, School Kaizen	Idem
17	Woldemehret Aregay	M	Senior Consultant, Metal Industry	Idem
18	Abedulwhab Tola	M	Assistant Researcher, Teaching Aid Material Preparation	Idem
<b><i>Study on Productivity Indicator</i></b>				
1	Tewodros Getachew	M	Lead KAIZEN Researcher /Acting Director, Research and Best Practice Directorate	Study team
2	Feven Addis	F	Senior KAIZEN Researcher, Idem	Idem
3	Tadelech Tefera	F	KAIZEN Researcher, Idem	Idem
4	Betelhem Yitagesu	F	Associate KAIZEN Researcher, Idem	Idem
5	Ashebar Assefa	M	Associate KAIZEN Researcher, Idem	Idem
<b><i>Certification, Accreditation and Registration System (CARS)</i></b>				
1	Molla Getahun	M	Senior KAIZEN Researcher/Acting Director, Awarding, Recognition and Certificate Directorate	CARS Secretariat
2	Woinshet Bekele	F	Senior KAIZEN Consultant, Idem	Idem
3	Tigist Ayalew	F	KAIZEN Researcher, Idem	Idem
4	Dereje Arage	M	Associate KAIZEN Researcher, Idem	Idem
5	Sinkenesh H/Giyorgis	F	Associate KAIZEN Consultant, Idem	Idem
6	Legesse Muche	M	Junior Consultant, Idem	Idem
<b><i>Management Skill Training</i></b>				
1	Andualem Ayele	M	Senior KAIZEN Consultant, Chemical Industry Directorate	Trainer
2	Selamawit Solomon	F	Senior KAIZEN Consultant, Agro, Food and beverage Industry Directorate	Idem
3	Weldemihret Aregay	M	Senior KAIZEN Consultant, Metal Industry Directorate	Idem

Below is a list of the Basic-level consultants (BCs) and Intermediate-level consultants (ICs) registered under CARS. Of the 23 BCs and 24 ICs, the EKI consultants account for 10 BCs and 17 ICs.

Table-7 List of Registered Consultants

No	Level	Year	Name	Sex	Age	Current Job Title	Department	Org.	Reg. No.
1	BC	2017	Alwoye Yigrem Alemu	M	31	Senior Kaizen Consultant	Basic Utilities and Infrastructure Directorate	EKI	BC-2017-0001
2	BC	2017	Dereje Mulatu Bedada	M	33	Senior Kaizen Consultant	Logistics and Supply Directorate	EKI	BC-2017-0002
3	BC	2017	Fufa Gusu Engisho	M	40	Trainer/Researcher	Oromia State University	OSU	BC-2017-0003
4	BC	2017	Hirko Wakgari Amanta	M	36	Trainer/Researcher	Oromia State University	OSU	BC-2017-0004
5	BC	2017	Mesay Gerbi Bogale	M	37	Director	Oromia State University	OSU	BC-2017-0005
6	BC	2017	Molla Kerie Yitayew	M	29	<del>Senior Kaizen Consultant</del>	<del>Agro Food and Beverage Directorate</del> (resigned)	<del>EKI</del>	BC-2017-0006
7	BC	2017	Surafel Lakew Gessesse	M	31	Senior Kaizen Consultant	Agro Food and Beverage Directorate	EKI	BC-2017-0007
8	BC	2017	Tewodros Genetu Birhanu	M	30	Lead Kaizen Consultant	Basic Utilities and Infrastructure Directorate	EKI	BC-2017-0008
9	IC	2017	Andualem Ayele Abebe	M	29	Senior Kaizen Consultant	Chemical Directorate	EKI	IC-2017-0001
10	IC	2017	Asnake Gudisa Gonfa	M	36	Director	Agro, Food and Beverage Directorate	EKI	IC-2017-0002
11	IC	2017	Awol Kassaw Gedafe	M	36	Director	Logistics and Supply Directorate	EKI	IC-2017-0003
12	IC	2017	Birhanu Ayenew Taye	M	31	Senior Kaizen Consultant	Textile Industries Kaizen Directorate	EKI	IC-2017-0004
13	IC	2017	Biruk Wubishet Asrese	M	34	Lead Researcher	Research and Best Practice Directorate	EKI	IC-2017-0005
14	IC	2017	Firegenet Kinfe Mersha	F	29	Senior Kaizen Consultant	Construction Directorate	EKI	IC-2017-0006
15	IC	2017	Henok Birmegey Ellala	M	29	Senior Kaizen Consultant	Textile Industries Kaizen Directorate	EKI	IC-2017-0007
16	IC	2017	Mesfin Wondimu Bekele	M	37	Director	Leather Directorate	EKI	IC-2017-0008
17	IC	2017	Tujuba Ragasa Garede	M	33	Director	Heritage and Tourism Kaizen Directorate	EKI	IC-2017-0009
18	IC	2017	Weldemhret Aregay Fili	M	29	Senior Kaizen Consultant	Metal Directorate	EKI	IC-2017-0010
19	IC	2017	Yigeedeb Abay Tesfu	M	34	Director	Metal Directorate	EKI	IC-2017-0011
20	BC	2018	Fikadu Siyoum	M	29	Kaizen Consultant	Agro Food & Beverage Kaizen Directorate	EKI	BC-2018-0002
21	BC	2018	Helen G/Mariam Zergaw	F	28	Kaizen Consultant	Chemical Department	EKI	BC-2018-0008
22	BC	2018	Yordanos K/Mariam	F	25	Assistant Kaizen Consultant	Leather Industries Development Directorate	EKI	BC-2018-0009
23	BC	2018	Nabon Elias	F	25	Associate Kaizen Consultant	Agro Food & Beverage Industries Directorate	EKI	BC-2018-0020
24	BC	2018	Frehiwot Asmelash	F	25	Associate Kaizen Consultant	Leather Industries Development Directorate	EKI	BC-2018-0021
25	BC	2018	Adane Kassa Shikur	M	32	Lecturer	School of Mechanical & Institute of Technology	DDU	BC-2018-0031
26	IC	2018	Meseret Teshome	F	28	Senior Kaizen Consultant	Textile Industries Kaizen Directorate	EKI	IC-2018-0007
27	IC	2018	Melkamu Garuma	M	29	Consultant	Construction Directorate	EKI	IC-2018-0014
28	IC	2018	Yordanos K/Mariam	F	25	Assistant Kaizen Consultant	Leather Industries Development Directorate	EKI	IC-2018-0034
29	IC	2018	Frehiwot Asmelash	F	25	Associate Kaizen Consultant	Leather Industries Development Directorate	EKI	IC-2018-0012

<i>No</i>	<i>Level</i>	<i>Year</i>	<i>Name</i>	<i>Age</i>	<i>Sex</i>	<i>Current Job Title</i>	<i>Org.</i>	<i>Reg. No.</i>
30	BC	2019	Kassa Getu Dereje	M	48	General Manager	KGD and Family General Trading PLC	(tbc)
31	BC	2019	Yetnayet Assefa	M	46	Chief Executive Officer	InfinEth Solutions Plc	(tbc)
32	BC	2019	Kalekirestos Ayele	M	40	General Manager	QITS Inspection	(tbc)
33	BC	2019	Newhame Dagne Leake	M	38	General Manager	New Horizon Engineering and Management PLC	(tbc)
34	BC	2019	Matias Taye Hailemariam	M	38	Industrial Consultant & Trainer, University Lecturer	Praise Consultancy plc, St. Marry's University	(tbc)
35	BC	2019	Mesfin Teklehaimanot Shoatek	M	53	Senior Consultant and Managing Partner	Adroit Consultancy & Training Service PLC	(tbc)
36	BC	2019	Mesfin Demissie	M	35	Lecturer	Dire Dawa university	(tbc)
37	BC	2019	Mulugeta Mekonnen	M	43	General Manager	Bilbas Integrated Management Consultants PLC	(tbc)
38	BC	2019	Haileselassie Mehari Gebremedhin	M	33	Lecturer and OQMC Head	Mekelle University, Ethiopian Institute of Technology-Mekelle	(tbc)
39	IC	2019	Seble Gebrehiwot Gidey	F	28	Kaizen Consultant	Metal Industry Directorate, EKI	(tbc)
40	IC	2019	Bedasa Fenta Asebe	M	32	Senior Kaizen Consultant	Chemical Industry Directorate, EKI	(tbc)
41	IC	2019	Alemayehu Kidanemariam	M	32	Quality health safety and environmental manager	Alemayehu Nigussie Metal packaging	(tbc)
42	IC	2019	Demelash Zewdu	M	31	TPM Manager	Heineken Breweries SC.	(tbc)
43	IC	2019	Afewerk Getachew	M	35	Assistant Professor	Addis Ababa Science and Technology University	(tbc)
44	IC	2019	Gebreegziabher Gebremicael Tesfay	M	38	Senior Officer in Change Management (Kaizen & QMS)	EFFORT Corporate	(tbc)
45	IC	2019	Haileselassie Mehari Gebremedhin	M	33	Lecturer and OQMC Head	Mekelle University, Ethiopian Institute of Technology-Mekelle	(tbc)
46	IC	2019	Redai Gebremichael Niguse	M	45	Design knowledge management manager	Ethiopian Institute of Technology-Mekelle	(tbc)
47	IC	2019	Daniel Gezae Huluf	M	32	Kaizen office and Sustainability Manger	MAA Garment and Textiles	(tbc)

## 2.3 Acceptance of Trainees

### 2.3.1 Counterpart Training (Japan and Third Countries)

Training in Japan and third countries was conducted as part of the project activities. The actual training aimed at achieving a multiplier effect with technology transfer in Ethiopia and making sure that the various expected outputs of the Project would be realized through (i) third country training (for senior management members), (ii) training in Japan (for core managers and consultants) and (iii) third country training (for young consultants). The actual contents of these training programmes are described next.

#### (1) Third Country Training (for Senior Management Members)

Third country training targeting senior officials and executives of the EKI took place twice in November, 2016 and May, 2018 at the Instituto Nacional de Tecnologia Industrial (INTC) of Argentina acting as the receiving organization contracted locally.

Table-8 Outline of the Third Country Training (Argentina)

Course Title	Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement
Purposes	<ol style="list-style-type: none"> <li>1) The trainees develop their practical knowledge of the mechanism and method to promote and disseminate KAIZEN and the mechanisms for cooperation with stakeholder organizations and private sector associations by means of (i) visiting government as well as private organizations, private enterprises, etc., all of which play an important role in the promotion of KAIZEN activities in Argentina, and (ii) acquiring experience and know-how, accumulated by the INTI, through lectures, etc.</li> <li>2) While learning about the self-sustaining human resources development system and consultant certification system, the trainees enhance their understanding of (i) how KAIZEN activities have been implemented in the process of industrialization in Argentina and (ii) the history of the development and expansion of the INTI, including its networking efforts in local areas, and the organizational structure and functions of the INTI.</li> <li>3) The trainees gain innovative ideas, knowledge and know-how to implement KAIZEN activities targeting specific industries and also KAIZEN activities compatible with the characteristics and conditions of the manufacturing sector in Ethiopia while taking the industrial structure in Argentina into consideration.</li> </ol>
Basic Policies	<ol style="list-style-type: none"> <li>1) In view of the future image of the organization to be pursued and the activities of the EKI, efforts are made to make the contents of the training enable the trainees to master knowledge concerning the contents and method of KAIZEN dissemination activities.</li> <li>2) Careful consideration is given to ensuring that the contents of the training correspond to the actual conditions in Ethiopia and will be most useful to solve the KAIZEN themes faced by the EKI and Ethiopian enterprises.</li> <li>3) A textbook, etc. to be used for lectures, explanations, etc. are prepared in English so that they can be used after the trainees' return to Ethiopia.</li> </ol>
Training Curriculum	<ol style="list-style-type: none"> <li>1) Development of an organization and system to enhance quality/productivity in Argentina</li> <li>2) KAIZEN activities in the industrial development of Argentina</li> <li>3) Practical training as part of KAIZEN activities at the production frontline</li> </ol>
Training Period	<p>First: 21<sup>st</sup> November (Monday) to 2<sup>nd</sup> December (Friday), 2016</p> <p>Second: 14<sup>th</sup> May (Monday) to 24<sup>th</sup> May (Thursday), 2018</p>
Training Participants (Trainees)	<p>First: 5 senior officials of the EKI (Director General, 2 Deputy Director Generals and 2 Directors)</p> <p>Second: 5 senior officers of the EKI (1 Deputy Director General and 4 Directors)</p>

(2) Training in Japan (for Core Managers and Consultants)

Training in Japan targeting core managers and consultants of the EKI took place in August, 2019. Along with the work to invite some Ethiopian people to Japan which is described later, this training was timed to take place during the TICAD VII held in Yokohama to allow the trainees to participate in side events.

Table-9 Outline of the Training in Japan

Course Title	Training for Capacity Building of Core Managers and Consultants
Purposes	<ol style="list-style-type: none"> <li>1) The purpose of training is to learn the methods of KAIZEN dissemination, operation, cooperation with related agencies from the experience of Japan through lectures and visits to agencies and private organizations that play an important role in promoting KAIZEN in Japan.</li> <li>2) The main topic of the training will be the way that Japan achieved rapid industrialization, how KAIZEN activities were implemented in the process of industrialization, the background of the development of agencies, the function of agencies in industrialization, and the management method of agencies, especially in human resource development.</li> <li>3) The knowledge, skills and lessons learned from not only intermediate-level KAIZEN techniques but also application examples of intermediate-level KAIZEN in order to provide KAIZEN services will be transferred to the trainees.</li> </ol>
Basic Policies	<ol style="list-style-type: none"> <li>1) In view of the future image of the organization to be pursued and the activities of the EKI, efforts are made to make the contents of the training enable the trainees to master knowledge concerning the contents and method of KAIZEN dissemination activities.</li> <li>2) Careful consideration is given to ensuring that the contents of the training correspond to the actual conditions in Ethiopia and will be most useful to solve the KAIZEN themes faced by the EKI and Ethiopian enterprises.</li> <li>3) A textbook, etc. to be used for lectures, explanations, etc. are prepared in English so that they can be used after the trainees' return to Ethiopia.</li> </ol>
Training Curriculum	<ol style="list-style-type: none"> <li>1) Development of an organization and system to enhance quality/productivity in Japan</li> <li>2) KAIZEN activities in the industrial development of Japan</li> <li>3) Practical training as part of KAIZEN activities at the production frontline</li> </ol>
Training Period	19 <sup>th</sup> August (Monday) to 30 <sup>th</sup> August (Friday), 2019
Training Participants (Trainees)	8 core personnel of the EKI (1 Deputy-Director General, 1 Director and 6 core consultants)

(3) Third Country Training (for Young Consultants)

Third country training targeting young consultants of the EKI took place twice in July, 2018 and July, 2019 at the Malaysian Productivity Corporation (MPC) as the receiving organization contracted locally.

Table-10 Outline of the Third Country Training (Malaysia)

Course Title	Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement
Purposes	<ol style="list-style-type: none"> <li>1) The purpose of training is to learn not only Basic KAIZEN techniques and application examples of KAIZEN, but also the methods of KAIZEN dissemination, operation, cooperation with related agencies and human resource development from the experience of Malaysia and the Malaysian Productivity Corporation (MPC) through lectures and visits to government and private organizations that play an important role in promoting KAIZEN in Malaysia.</li> <li>2) The main topic of the training will be the way Malaysia achieved rapid industrialization, how KAIZEN activities were implemented in the process of industrialization, the background of the development of MPC, the function of MPC in industrialization, and the management method of MPC, especially in human resource development.</li> <li>3) The knowledge, skills and lessons learned from not only implementation but also customization of KAIZEN in order to suit the specific conditions of manufacturing industry in Malaysia will be transferred to the trainees.</li> <li>4) The trainees will use the knowledge acquired through the training to improve further development of KAIZEN in Ethiopia.</li> </ol>
Basic Policies	<ol style="list-style-type: none"> <li>1) The targeted trainees should be young technical staff who was trained by EKI and implements Basic KAIZEN activities.</li> <li>2) The training should achieve its objectives through lectures and field visits.</li> <li>3) The training should ensure that trainees acquire knowledge concerning the contents and methods of activities for disseminating KAIZEN, while paying consideration to the compilation of future activities of EKI.</li> <li>4) The training should be designed to ensure that contents are pertinent to actual conditions in Ethiopia and is useful in overcoming the issues of KAIZEN improvement currently faced by enterprises in Ethiopia.</li> <li>5) Teaching materials used in lectures and explanations should be prepared in English so that the trainees can utilize them after they get back to Ethiopia.</li> </ol>
Training Curriculum	<ol style="list-style-type: none"> <li>1) Development of organizations and systems for dissemination of quality/productivity (KAIZEN) in Malaysia</li> <li>2) KAIZEN activities in the industrial development in Malaysia</li> <li>3) Practical training in manufacturing settings of actual KAIZEN activities</li> </ol>
Training Period	<p>First: 16<sup>th</sup> July (Monday) to 27<sup>th</sup> July (Friday), 2018</p> <p>Second: 15<sup>th</sup> July (Monday) to 26<sup>th</sup> July (Friday), 2019</p>
Training Participants (Trainees)	<p>First: 16 young consultants of the EKI</p> <p>Second: 16 young consultants of the EKI</p>

### 2.3.2 Invitation to Japan

The work to invite Ethiopian officials to Japan was conducted twice in 2017 and 2019, targeting the head of the government office supervising the EKI and others. The EKI was under the jurisdiction of the MoPSHRD in 2017 and the Civil Service Commission in 2019. The purpose of this work was to deepen the understanding of those invited of Japanese-style KAIZEN, KAIZEN methods contributing to the enhancement of the competitiveness of enterprises and also the promotion of industries through visits to the organizations listed below.

- Organizations promoting the spread of KAIZEN activities in Japan
- Model manufacturing enterprises practicing KAIZEN activities
- Concrete cases of KAIZEN activities promoted by local public bodies
- Other



The invitation to the Commissioner of the CSC in August, 2019 in particular was timed to take place during the period of the TICAD VII held in Yokohama and all of the five invitees participated in the side event titled “Africa’s socio-economic transformation through innovation” on 27th August. Of the five invitees, two were from Ethiopian MAA Garment and Textiles PLC which received the Outstanding Award at the First Africa KAIZEN Awards event held in June, 2019. The contents of these two invitations to Japan are outlined in the following table.

Table-11 Outline of the Invitation to Japan

	2017	2019
Date	May 30 – June 4, 2017	Aug. 25-29, 2019
Participants	<ol style="list-style-type: none"> <li>1. Mr. Tagesse Chefo, Minister</li> <li>2. Mr. Adamu Ayana, State Minister</li> <li>3. Mr. Mekonnen Yaie, DG, EKI</li> </ol>	<ol style="list-style-type: none"> <li>1. Mr. Bezabeh Gebereyes, Commissioner</li> <li>2. Mr. Birhanu Feyisa, Vice Commissioner</li> <li>3. Mr. Mekonnen Yaie, GD, EKI</li> <li>4. Mr. Fikreslassie Ambaw, GM, MAA Garment and Textile</li> <li>5. Mr. Daniel Gezae, Kaizen Officer, MAA Garment and Textile</li> </ol>
Visited enterprises/ organizations	<ul style="list-style-type: none"> <li>• Japan Productivity Center (JPC)</li> <li>• Japan Institute of Plant Maintenance (JIPM)</li> <li>• Union of Japanese Scientists and Engineers (JUSE)</li> <li>• Nissan Motor Co., Ltd. (Tochigi Plant)</li> <li>• Ashikaga Printing Co., Ltd.</li> <li>• Tamura Shuzoujou Co., Ltd.</li> <li>• Ashikaga 5S School (Ashikaga Council for Networking to Promote the 5S)</li> <li>• Ashikaga Chamber of Commerce and Industry</li> <li>• Ashikaga Technical High School</li> </ul>	<ul style="list-style-type: none"> <li>• Nissan Motor Co., Ltd. (Oppama Plant)</li> <li>• TICAD 7 side event</li> <li>• Lecture at a Universal Consultation Desk in Tokyo</li> <li>• Tokyo Metropolitan Industrial Technology Research Institute</li> </ul>

## 2.4 Actual Cost of Equipment Provided

The JICA Ethiopia Office procured equipment for the Project twice in 2015 and 2016, providing a total of six minibuses for the EKI. In addition, the Project Team offered one multi-functional copying machine, originally purchased for the project office, to the EKI. The quantity and total cost of the equipment provided to the EKI is shown in the table below.

Table-12 Provision of Equipment

Item	Quantity	Value
Minibus	6	About 19 million Yen
Photocopier	1	ETB270,000.00 (about 1.4 million Yen)

## 2.5 Actual Cost of the Work in Ethiopia

The actual cost of the work by the Project Team in Ethiopia in each contract period is shown in the table below.

Table-13 Actual Cost of the Work in Ethiopia

Cost Item	First Contract Period (2015/7-2017/6)	Second Contract Period (2017/7-2020/6)	Total
Local work by the Project Team	15,048,000 yen	31,000,000 yen (Estimate)	46,048,000 yen (Estimate)

## 2.6 Operating Budget of the EKI

The Government of Ethiopia has made budget allocation to the EKI as shown in the table below.

Table-14 Budget allocation EKI

Financial Year	2008EC (2015/16)	2009EC (2016/17)	2010EC (2017/2018)	2011EC (2018/2019)	2012EC (2019/2020)
Total (ETB)	25,054,382.00	33,554,142.00	36,870,130.00	39,000,000.00	39,877,400.00

## 3. Project Outputs

### 3.1 Degree of Achievement of the Project Purpose and Outputs

The degree of achievement of the project purpose and outputs in terms of their relevant indicators is shown in the table below. Although Indicator 1 for the Project Purpose and Indicator 3-1 for Output 3 have not been completely achieved, all other indicators were achieved. Based on such situation of achievement, it can be said that the Project Purpose and project outputs were achieved.

Table-15 Progress Situation of Indicator Achievement

		Indicator	Progress (Indicator-Based)	Prospect for Achievement	Special Note
Overall Goal	Quality and productivity in targeted industries are improved, leading to an enhancement of industrial competitiveness in Ethiopia.	1. 20% of LMEs have continued KAIZEN for more than two years.		-	
		2. 10% of SME have continued KAIZEN for more than two years.		-	
		3. The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the previous two years increased by 10% on average compared to before KAIZEN.		-	
Project Purpose	KAIZEN practitioners are developed in both private and public sectors through the KAIZEN dissemination system led by EKI.	1. 81 consultants complete intermediate-level KAIZEN training; and 32 consultants are certified and registered as intermediate-level Kaizen consultants.	1. 83 trainees completed the training. Out of 83, 17 members are successfully certified and registered for the Intermediate Kaizen consultant.	○	The number 17 included one person who resigned from EKI.
		2. The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the Project period increased by 20% on average compared to before KAIZEN.	2. The average of KAIZEN indicators of the enterprises that were involved in 1st, 2nd, 3rd, 4th and 5th batch is 38%, 35%, 44%, 44% and 53% respectively.	◎	
		3. 30 enterprises are involved in intermediate-level KAIZEN activities.	3. A total of 38 enterprises has been involved in the activities under the project. EKI also started the provision of the same-level KAIZEN services by its own from 2017.	◎	
		4. 360 managers and workers are involved in intermediate-level KAIZEN activities.	4. So far, about 504 managers and workers (72, 122, 111, 129, 70 for the 1st, 2nd, 3rd, 4th and 5th batch respectively) have been involved in the activities.	◎	
Output	1. EKI's (including its regional network) management capacity in KAIZEN dissemination is enhanced through the accumulation and standardization of best practices.	1-1. International best practices and performances are compiled as a reference.	1-1. The study of best practices and performances of Kaizen promoting organizations in Japan and third countries was completed in the first year of the project.	◎	
		1-2. A KAIZEN technologies dissemination plan is prepared and being implemented.	1-2. Based on the study, five-year Kaizen dissemination plan (2015-2020) was formulated. The plan has five strategic pillar and 17 individual programs. The Project has been supporting several programs during the project period	◎	
		1-3. KAIZEN implementation guidelines are prepared, followed and revised.	1-3. For the programs that the Kaizen Project had supported, the necessary guidelines/frameworks were developed (e.g. Organizational Kaizen guideline, consultant evaluation framework) and followed and revised (e.g. CARS implementation guideline, Management skill training program and materials).	◎	

	Indicator	Progress (Indicator-Based)	Prospect for Achievement	Special Note	
Output	2. EKI becomes able to provide intermediate-level KAIZEN training and consultancy services to private and public sectors.	2-1. An overview of the sectors / sub-sectors targeted for intermediate-level KAIZEN training and consultancy services is prepared.	2-1. From 1 <sup>st</sup> to 3 <sup>rd</sup> batches, the In-Company Training (ICTs) of intermediate-level Kaizen focused on manufacturing sector. From 4 <sup>th</sup> batch, in response to Kaizen demand increased in service and public sectors, the Project and EKI reviewed these sectors and included the enterprises or institute of these sectors. In 4 <sup>th</sup> batch, number of the enterprise in service sector is 1; and in 5 <sup>th</sup> batch, that of service sector is 2 and public institution is 1.	◎	
		2-2. Implementation plans for intermediate-level KAIZEN training and consultancy services are developed and put into practice through BSC.	2-2. EKI has been exercising Plan, Do, Check and Action (PDCA) cycle based on BSC. Similarly, the intermediate-level Kaizen training of the project was planned and implemented jointly. In addition, EKI started to implement the intermediate-level Kaizen from 2017.	◎	
		2-3. Course materials and manuals for CRT of intermediate-level are prepared.	2-3. The course materials and manuals were prepared; and revised at each batch to correspond the status of the trainees, as well as based on the practices gained in previous batches. Based on the agreed curriculum, the Japanese experts finalized the CRT materials as standard version.	◎	
		2-4. 5 CRT and ICT of intermediate-level have been conducted.	2-4. All five batches of CRT and ICT was completed.	◎	
		2-5. Evaluation reports on CRT and ICT of intermediate-level are produced twice.	2-5. For all the five batches, three types evaluations were conducted: (1) evaluation on trainees, (2) evaluation on the trainers (teaching methodology, teaching materials, etc.) and (3) the questionnaire survey on the satisfaction on the ICT companies. The results were compiled and utilized for improvement of the training.	◎	
	3. A coordinated system (vertical and horizontal) is put in place whereby quality of KAIZEN training and consultancy services provided by EKI and other institutions is ensured and KAIZEN dissemination is promoted at national level.	3-1. A grading, certifying and registering system for KAIZEN consultants is prepared, and 174 consultants are certified and registered.	3-1. The Kaizen consultant qualification system (CARS) was developed in 2017. So far, the CARS exam was conducted three times and a total of 47 consultants (EKI: 27) were certified and registered. In addition, 161 and 127 passed the verification exam of 5S Leader and 5S Master respectively. The project prepared the implementation guideline as well as the exam item bank of CARS. So, EKI are expected to continue CARS implementation in the future.	○	<ul style="list-style-type: none"> <li>- The number 27 included one person who resigned from EKI.</li> <li>- The verification exams of 5S Leader / Master were developed targeting the Kaizen practitioners from companies and other organizations (TVET, IDIs, etc.).</li> </ul>
		3-2. KAIZEN curricula, manuals and teaching materials are reviewed every year.	3-2. As mentioned above in 2-3.	◎	

		Indicator	Progress (Indicator-Based)	Prospect for Achievement	Special Note
Output		3-3. A system for collecting, compiling, and utilizing information on KAIZEN practices is put in place and utilized.	3-3. The project made the proposal in the Organizational Kaizen regarding the knowledge management. EKI is currently developing the database and information system called "Kaizen Management Information System (KMIS)". For the sub-sectors that was targeted under the intermediate-level Kaizen training, the materials of case methods were developed. EKI conducts research workshop every year to share the good practices of the companies and research papers on Kaizen implementations.	◎	

◎Achieved; ○Expected to be achieved; △Some risks associated with achievement efforts;×Difficult to achieve

### 3.2 Degree of Achievement by Each Indicator

The degree of achievement by each indicator is described below.

**Project Purpose:** KAIZEN practitioners are developed in both the private and public sectors through the KAIZEN dissemination system led by the EKI.

**[Indicator 1]** 81 consultants complete intermediate-level KAIZEN training; and 32 consultants are certified and registered as intermediate-level Kaizen consultants.

A total of 83 trainees completed the intermediate-level KAIZEN training in five batches, becoming KAIZEN consultants. Of these 83, 17 were certified and registered as CARS intermediate consultants (IC). The fact that many applicants failed to actually attend the CARS IC examination due to a busy work schedule and lack of sufficient teaching materials to study is a reason for the failure to reach the target number of certified and registered ICs of 32 (the ratio of those sitting the actual examination among the original applicants was as low as 40 – 50%).

Table-16 Number of Trainees for Intermediate-Level KAIZEN Training

Item		Batch 1	Batch 2	Batch 3	Batch 4	Batch 5	Total
No. of trainees	Plan	18	18	18	20	14	88
	Actual	17	17	16	19	14	<b>83</b>
No. of ICT companies	Plan	6	6	9	10	7	38
	Actual	6	6	9	10	7	<b>38</b>
No. of CFT members	Plan	60	60	90	100	70	380
	Actual	72	122	111	129	70	<b>504</b>

**[Indicator 2]** The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the Project period increased by 20% on average compared to before KAIZEN.

The overall performance level of the ICT enterprises involved in the intermediate-level KAIZEN training to achieve the KAIZEN indicators was 38% for the first batch, 35% for the second batch, 44% for the third batch, 44% for the fourth batch and 53% for the fifth batch. The average performance of 42% far exceeded the target level. By category of KAIZEN indicator, the average level of performance (i.e. level of achievement in percentage) among the most popular categories for KAIZEN was 46% for quality (Q), 39% for productivity (P) and 37% for machine maintenance out of productivity (M).

Data for the fifth batch ICT which began in October, 2019 includes those enterprises which are shut down or of which production is suspended due to the impact of spreading infection by COVID-19. See Appendix 4 for details of the ICT and KAIZEN indicator values by batch and theme (category).

Table-17 Performance of KAIZEN Indicators by Batch

Batch	Average	Average by target*					
		Q	P	D	C	M	I
1 <sup>st</sup>	<b>38%</b>	42%	-	97%	19%	38%	-
2 <sup>nd</sup>	<b>35%</b>	44%	38%	33%	-	14%	-
3 <sup>rd</sup>	<b>44%</b>	70%	39%	-	67%	39%	-
4 <sup>th</sup>	<b>44%</b>	41%	40%	44%	76%	46%	-
5 <sup>th</sup>	<b>53%</b>	54%	-	-	63%	43%	50%
Overall	<b>42%</b>	<b>46%</b>	<b>39%</b>	<b>58%</b>	<b>43%</b>	<b>37%</b>	<b>50%</b>

\* Q: Quality, P: Productivity, D: Delivery, C: Cost, M: Maintenance, I: Institution building

**[Indicator 3] 30 enterprises are involved in intermediate-level KAIZEN activities.**

As shown in Table-16, a total of 38 ICT enterprises participated in KAIZEN activities through five batches of intermediate-level KAIZEN training. The EKI has already started the independent provision of intermediate-level KAIZEN services for enterprises with a total of five clients in 2017/18 (2010 EC) and 8 clients in 2018/19 (2011 EC). For 2019/20 (2012 EC), it is planned to provide this service for 5 clients. Of the 38 participating enterprises in the ICT, 17 in the first through third batches also received management skill training designed for senior officials of the EKI.

**[Indicator 4] 360 managers and workers are involved in intermediate-level KAIZEN activities.**

As shown in Table-16, 504 managers and other employees of ICT enterprises were involved in KAIZEN activities in the intermediate-level KAIZEN training as CFT (Cross-Functional Team) members.

**Output 1 The EKI's (including its regional network) management capacity for KAIZEN dissemination is enhanced through the accumulation and standardization of best practices.**

**[Indicator 1-1] International best practices and performances are compiled as a reference.**

The study on the historical development of organizations promoting and disseminating KAIZEN in Japan, such as the Japan Productivity Center (JPC), Union of Japanese Scientists and Engineers (JUSE) and Japan Institute of Plant Maintenance (JIPM), and also on best practice, bad practice and the performance of similar organizations overseas was completed in the first year of the Project.

**[Indicator 1-2] A KAIZEN technologies dissemination plan is prepared and being implemented.**

Based on the results of the study mentioned above, a five year KAIZEN dissemination plan (2015 – 2020) was formulated. This KAIZEN Dissemination Plan consists of five strategies and 17 individual programmes. During the project period, some individual programmes started, supporting the EKI's activities (those underlined in the table). Details of these activities are given in the section under Output 3.

Table-18 Kaizen Dissemination Plan – Individual Strategies

Strategy Menu		
Establishment of organizational bases	(1) Establishment of revenue base	<ul style="list-style-type: none"> <li>Establishment of the EKI as a special administrative corporation</li> <li>Revision of the Proclamation</li> <li>Funding of 20% of necessary expenses by the operating revenue</li> </ul>
	(2) Establishment of bases for activities	
	Development of local activity bases	<ul style="list-style-type: none"> <li><u>Establishment of regional EKIs</u></li> </ul>
	Expansion of the scope of KAIZEN activities	<ul style="list-style-type: none"> <li>KAIZEN extension worker system for regional bases</li> <li>One-day KAIZEN consultations in local areas</li> </ul>
	Packaging of consulting and seminar	<ul style="list-style-type: none"> <li>Packaging of KAIZEN consulting</li> <li><u>Packaging of KAIZEN seminar</u></li> </ul>
	Sale of teaching materials	<ul style="list-style-type: none"> <li>Sale of a textbook on basic KAIZEN technologies</li> </ul>
	E-learning	<ul style="list-style-type: none"> <li>Provision of learning opportunities for basic KAIZEN using mobile phones</li> <li>Learning through the Internet</li> </ul>
Development and introduction of KAIZEN technologies	(3) Development and introduction of new technologies	<ul style="list-style-type: none"> <li>Study by the research office on new technologies</li> <li>Applied research</li> <li><u>Study on the introduction of KAIZEN to public organizations</u></li> <li><u>Study on the introduction of KAIZEN to the service sector</u></li> <li>System to evaluate new KAIZEN technologies</li> </ul>
	(4) Localisation of technologies	<ul style="list-style-type: none"> <li><u>Adaptation of new technologies to the Ethiopian situation</u></li> </ul>
Development and full performance of capacity	(5) Deployment of the right people in the right place	<ul style="list-style-type: none"> <li>Transformation from a consulting organization by industrial sector to one by KAIZEN function</li> <li><u>Formation of teams based on consultant skills to meet consulting needs</u></li> </ul>
	(6) Flexible operation of the organization	<ul style="list-style-type: none"> <li>Flexible operation based on project-specific teams</li> <li>Standardisation of the seminar menu</li> <li>Flexible formation of consulting teams to match the purposes of consulting or seminars</li> </ul>
	(7) Capacity development for KAIZEN consulting	<ul style="list-style-type: none"> <li><u>Client-oriented consulting</u></li> <li><u>Programme to evaluate and improve the consulting capacity of individual consultants</u></li> </ul>
	(8) Improvement of management capacity	<ul style="list-style-type: none"> <li><u>Management seminar</u></li> </ul>
	(9) Remuneration and treatment to match contributions	<ul style="list-style-type: none"> <li>Introduction of partial performance pay for consultants, etc. using part of the EKI's revenue</li> <li><u>Establishment of a consultant performance assessment system</u></li> </ul>



Strategy Menu			
Systematisation of KAIZEN	(10) Commendation by awards	<ul style="list-style-type: none"> <li>• <u>5S good practice award, muda elimination award, MSE KAIZEN award, etc.</u></li> <li>• <u>Excellent consultant award and good practice development award</u></li> </ul>	
	(11) KAIZEN achievements presentation meeting and establishment of KAIZEN activities through the establishment of KAIZEN organizations	<ul style="list-style-type: none"> <li>• KPT meeting</li> <li>• Local and national organizations</li> </ul>	
	(12) Promotion of a national popular KAIZEN movement	<ul style="list-style-type: none"> <li>• Introduction of KAIZEN to the compulsory education curriculum</li> <li>• Declaration of three KAIZEN principles by workers, employers and the government</li> </ul>	
	(13) KAIZEN through the publication of periodicals	<ul style="list-style-type: none"> <li>• Publication of the monthly magazine “KAIZEN”</li> <li>• Publication of the mail magazine “KPT”</li> </ul>	
	(14) Labour-management cooperation	<ul style="list-style-type: none"> <li>• KAIZEN declaration</li> </ul>	
	Establishment of the KAIZEN practitioner qualification system	<b>(15) <u>Consultant qualification</u></b>	<ul style="list-style-type: none"> <li>• <u>Development of a framework for consultant qualification</u></li> <li>• Operation of a seminar (course) for applicants for the consultant qualification examination</li> <li>• <u>Preparation and marketing of the textbook for applicants for the consultant qualification examination</u></li> <li>• <u>Consultant examination system</u></li> </ul>
		<b>(16) <u>KAIZEN qualification for corporate personnel</u></b>	<ul style="list-style-type: none"> <li>• <u>Development of qualifications targeting KPT leaders and KAIZEN leaders and QC competency test for corporate personnel</u></li> <li>• Operation of a seminar for applicants for the qualification examination</li> <li>• <u>Preparation and marketing of the textbook for applicants</u></li> <li>• <u>KAIZEN qualification examination system</u></li> </ul>
(17) Performance of the functions of a center of excellence	<ul style="list-style-type: none"> <li>• <u>Development as a host country</u></li> <li>• Common consulting service and KAIZEN-related qualifications</li> <li>• <u>The textbook for applicants for the above-mentioned qualification examination</u></li> <li>• Seminar for potential applicants</li> <li>• Preparation of teaching materials for KAIZEN training (models, manuals, textbooks, etc.)</li> <li>• <u>Visiting lecturers</u></li> <li>• <u>Visiting consulting service</u></li> </ul>		

**[Indicator 1-3] KAIZEN implementation guidelines are prepared, followed and revised.**

Because of the wide scope of the KAIZEN Dissemination Plan, the EKI and Project Team discussed which individual strategies should be prioritized and then developed the necessary guidelines and frameworks for the implementation of the prioritized programmes. To be more precise, such development included the guidelines for organizational KAIZEN, guidelines for the implementation of the CARS, framework for evaluation of the consultant capacity and performance and programme/teaching materials for management skill training. In the case of the CARS, the PDCA cycle was followed and the relevant guidelines were revised based on the lessons learned from the PDCA cycle. Moreover, a question item bank for the CARS examination was created (350 questions covering the examination for the next two years).

**Output 2: The EKI becomes able to provide intermediate-level KAIZEN training and consultancy services for the private and public sectors.**

**[Indicator 2-1] An overview of the sectors / sub-sectors targeted for intermediate-level KAIZEN training and consultancy services is prepared.**

The EKI was initially under the jurisdiction of the MoI. ICT in the first through third batch intermediate-level KAIZEN training focused on the manufacturing sector. Partly because of the change of the competent agency for the EKI, the Project Team and the EKI examined the possible expansion of the target sectors in response to the increasing KAIZEN demands in the service and public sectors. As a result, enterprises and organizations in these two sectors were included for KAIZEN activities from the fourth batch. One service enterprise was included in the ICT for the fourth batch and two service enterprises and one public organization were included in the ICT for the fifth batch. After the completion of each batch, the methodology for KAIZEN implementation for each sub-sector (garments, leather, transportation services, etc.) was established.

**[Indicator 2-2] Implementation plans for intermediate-level KAIZEN training and consultancy services are developed and put into practice through BSC.**

The EKI has long employed the PDCA cycle based on its BSC within itself. An implementation plan for intermediate-level KAIZEN training has been formulated for each batch and has been duly implemented. Apart from the intermediate-level KAIZEN training under the Project, the EKI started an independent intermediate-level KAIZEN service in 2017. As shown in the table below, the EKI has introduced intermediate-level KAIZEN to a total of 18 enterprises in the last three years.

Table-19 Number of Intermediate-Level KAIZEN Services Provided by the EKI

Year		Manufacturing Sector		Infrastructure, Utility and Service Sector		Total	
		New	Follow-up	New	Follow-up	New	Follow-up
2010EC (Sep. 2017 – July 2018)	Planned	5	12	1	1	6	13
	Actual	4	6	1	1	5	7
2011EC (Sep. 2018 – July 2019)	Planned	15	24	2	4	17	28
	Actual	6	12	2	4	8	16
2012EC (Sep. 2019 – July 2020)	Planned	5	28	4	9	9	37
	Actual	4	22	1	6	5	28
Total	Planned	25	64	7	14	32	78
	Actual	14	40	4	11	18	51

**[Indicator 2-3] Course materials and manuals for CRT of intermediate-level are prepared.**

The teaching materials for the CRT of intermediate-level KAIZEN training were initially prepared for the first batch training and then revised for improvement for each subsequent batch with careful consideration given to the background, etc. of the trainees. For example, supplementary lectures were arranged for the fourth batch to facilitate understanding of the basics and concept of IE as all 20 trainees shared a social science background. Moreover, the fact that consultants who had completed or were undergoing a KAIZEN master's degree course became trainees in the subsequent batch led to the discovery that some learning contents of the master's degree course overlapped with those of the CRT. Based on this discovery, efforts were made to formulate the CRT plan and teaching materials in a flexible manner, including a change of the CRT curriculum to avoid duplicated teaching, to match the academic career and work experience of the trainees. Furthermore, because of the importance of understanding the inherent technology to achieve the intended KAIZEN outcomes of intermediate-level KAIZEN activities at an enterprise, a lecture on unique inherent technology was introduced from the third batch CRT with the cooperation of the MIDI, LIDI, etc. to match the nature of business of the ICT enterprises. By the time of the completion of the Project, the standard teaching materials to be used for the CRT for intermediate-level KAIZEN training have been developed, incorporating a series of revisions made throughout the project period. The draft guidelines for the implementation of intermediate-level KAIZEN training were prepared during the third batch training period and were finalized after the completion of the fifth batch training.

**[Indicator 2-4] Five (5) CRT and ICT of intermediate-level have been conducted.**

In all five batches of intermediate-level KAIZEN training, CRT and ICT were conducted in accordance with the schedules shown in the table below. In the case of the fifth batch ICT, the original plan was for completion in April, 2020. However, because of the impact of the spread of infection by COVID-19, the ICT duration was extended by one month to May, 2020.

Table-20 Implementation Schedule of Intermediate-Level KAIZEN Training

Batch	CRT	ICT	Ref. MSc in Kaizen
1 <sup>st</sup>	Nov. 2 – Dec. 1, 2015	Dec. 7, 2015 – Aug. 26, 2016	Mar. 2014 – Sep. 2015
2 <sup>nd</sup>	Sep. 19 – Oct. 14, 2016	Oct. 19, 2016 – May 12, 2017	Jul. 2015 – June 2017
3 <sup>rd</sup>	Dec. 4 – Dec. 29, 2017	Jan. 2 – Sep. 9, 2018	Mar. 2017 – Oct. 2018
4 <sup>th</sup>	Jan. 16 – Feb. 5, 2019	Feb. 6 – July 26, 2019	Mar. 2018 – Jul. 2019 (Incl. two-month “Bridging course”)
5 <sup>th</sup>	Sep. 16 – Oct. 8, 2019	Oct. 9, 2019 – May. 20, 2020	n/a

**[Indicator 2-5] Evaluation reports on CRT and ICT of intermediate-level are produced twice.**

In the intermediate-level KAIZEN training, three types of evaluation took place. These were (i) evaluation of trainees, (ii) evaluation of trainers and (iii) survey on the degree of satisfaction among the ICT enterprises. In the case of (i) evaluation of trainees, the trainees in each batch were evaluated based on the evaluation guidelines and an evaluation report on the trainees was produced for each of the five batches. This evaluation of the trainees is based on three evaluation items, i.e. (i) CRT test results, (ii) attitude competency and (iii) technical competency, and the overall evaluation of each trainee is based on the actual score for each item.

**Output 3: A coordinated system (vertical and horizontal) is put in place whereby the quality of the KAIZEN training and consultancy services provided by the EKI and other institutions is ensured and KAIZEN dissemination is promoted at the national level.**

**[Indicator 3-1] A certification, accreditation and registration system for KAIZEN consultants is prepared and 174 consultants are certified and registered.**

In 2017, the KAIZEN Consultant Certification, Accreditation and Registration System (CARS) was established. In the last three years, the certification examination was held three times for basic-level consultants (BCs) and intermediate-level consultants (ICs). So far, 47 (23 BCs and 24 ICs) have been accredited and registered as certified consultants. When a target indicator value of 174 was set, it was planned to increase the number of the EKI’s staff members to 250. However, this figure at present of 154 (of which 109 are consultants) is much lower than the planned figure and is one factor for the failure to achieve the original target. Another reason is that many applicants did not actually attend the examination due to a busy work schedule or lack of sufficient teaching materials to study (the ratio of those sitting the actual examination among the original applicants was as low as 40 – 50%). However, of these, as many as 27 are EKI consultants (10 BCs and 17 ICs). In the third CARS examination held in the period from 2019 and 2020, a verification examination at two levels (5S leader and 5S master) was also introduced and a total of 288 applicants passed this examination (161 5S leaders and 127 5S masters). Although this verification examination does not provide a consultant qualification, it has produced many KAIZEN practitioners to facilitate the dissemination of KAIZEN (Output 3), playing a part in the achievement of Output 3.

The results of these examinations are shown in the table below.

Table-21 CARS Examination Results

Item		2017	2018	2019	<i>Aggregate</i>
BC/IC Overall results	Number of the Passed (EKI Consultants)	19 (16)	10 (9)	18 (2)	<b>47 (27)</b>
	Gender Ratio	95:5	50:50	94:6	<b>81:9</b>
	Average Age of the Passed (years old)	32.8	27.1	37.8	<b>33.5</b>
Basic consultant	Number of Successful Males	8	2	9	<b>19</b>
	Number of Successful Females	0	4	0	<b>4</b>
	Total (EKI Consultants)	8 (5)	6 (5)	9 (0)	<b>23 (10)</b>
	Pass Rate	27%	13%	16%	<b>19%</b>
Intermediate consultant	Number of Successful Males	10	1	8	<b>19</b>
	Number of Successful Females	1	3	1	<b>5</b>
	Total (EKI Consultants)	11 (11)	4 (4)	9 (2)	<b>24 (17)</b>
	Pass Rate	55%	67%	38%	<b>53%</b>
5S Leader	Number of Successful Males	-	-	139	<b>139</b>
	Number of Successful Females	-	-	22	<b>22</b>
	Total	-	-	161	<b>161</b>
5S Master	Number of Successful Males	-	-	114	<b>114</b>
	Number of Successful Females	-	-	13	<b>13</b>
	Total	-	-	127	<b>127</b>

[Indicator 3-2] KAIZEN curricula, manuals and teaching materials are reviewed every year.

As already described in [Indicator 2-3], the teaching materials and implementation guidelines for intermediate-level KAIZEN training have been revised for improvement for each batch and the relevant knowledge, experience, etc. are accumulated at the EKI.

[Indicator 3-3] A system for collecting, compiling, and utilizing information on KAIZEN practices is put in place and utilized.

Under the Project, guidelines for organizational management were prepared for the purpose of implementing internal KAIZEN at the EKI to enhance its organizational capacity and also to gather and utilize information related to the implementation of KAIZEN. Meanwhile, the KMIS (KAIZEN Management Information System) is currently being developed by the EKI as a database regarding the outline as well as situation of KAIZEN implementation at enterprises and is scheduled to be completed in the Ethiopian fiscal year ending in July, 2020 to commence operation. Moreover, the EKI has been involved in the development of a teaching aid for the case method for multiple target sectors of intermediate-level KAIZEN training as part of its efforts to develop wide-ranging teaching materials and has held an annual workshop to share good practices and research papers relating to the implementation of KAIZEN.

[Indicator 3-4] A study report on the improvement trends of and EKI's contribution made to the Ethiopian industry sector is produced.

To verify any positive contribution of KAIZEN activities, it is necessary to examine the results of these activities from the financial point of view. For this reason, the EKI and the Project Team discussed and agreed to conduct an “analysis of value-added productivity indicators targeting ICT enterprises”.

Subsequently, the relevant directorates produced 13 individual analysis reports. Meanwhile, sustained efforts to transfer skills, etc. to those in charge of continually analyzing productivity indicators at the EKI have reached the point where the EKI is now capable of producing its own analysis reports without external assistance for their feeding back to the enterprises concerned.

Table-22 Target Enterprises for Analysis of Productivity Indicators

Period	Name of enterprise	Region
Dec. 2016 – Jan. 2017	MAA Garment (1 <sup>st</sup> batch ICT company) Sheba Leather (1 <sup>st</sup> batch) Almeda Textile (1 <sup>st</sup> batch)	Tigray
Sep. 2017 – Jan. 2018	Mugher Cement (2 <sup>nd</sup> batch) Kaliti Metal (2 <sup>nd</sup> batch) Awash Aluminum (EKI independent)	Oromia
Nov. 2019 – Dec. 2019	Amhara Pipe Factor (APF) Amhara Water Well Drilling Enterprise (AWWD) Amhara Building Works Construction Enterprise (ABWCE) Amhara Road Works Enterprise (ARWE)	Amhara
Dec. 2019 – Mar. 2020	Messebo Cement Factor Mesfin Industrial Engineering Sheba Leather	Tigray

[Indicator 3-5] EKI KAIZEN magazines are published once a year.

During the project period, the EKI published three annual EKI magazines (No. 3/2015, No. 4/2016 and No. 5/2017) and three KAIZEN Proceedings (i.e. newsletters) (2016/2017, 2017/2018 and 2018/2019 editions). Moreover, the EKI holds seminars at the national and local levels during the annual KAIZEN month (September to October) and the National KAIZEN Awards Ceremony every two years. The EKI also transmits news and information regarding the dissemination of KAIZEN using various media, including public and private broadcasting services and social network services (SNS). Two documentary films featuring excellent KAIZEN performance have been produced and repeatedly broadcast by both radio and TV channels. Moreover, as described in Indicator 3-3, the EKI has held an annual research workshop since 2017 for the purpose of sharing best practices with those stakeholders in KAIZEN at federal and local organizations.

### 3.3 List of Project Products

Products produced during the project period are listed in the table below.

Table-23 List of Project Products

No.	Name	Date of production
1	EKI Kaizen Dissemination Plan	2015
2	Guideline of Organizational Management of Civil Service Organization	March 2019
3	Concept and Application of Kaizen Indicator	June 2020
4	Implementation Manual of Intermediate-level (Level 2) Kaizen training	April 2020
5	Evaluation Guideline for Trainees of Intermediate-level Kaizen	September 2019
6	Material for Classroom Training (CRT) of Intermediate-level Kaizen	May 2020
7	Kaizen Consultant Certification, Accreditation and Registration System (CARS) Guideline, Release 1.2	November 2019
8	Consultant Evaluation Framework	May 2020
9	Postgraduate Program Curriculum and Handbook on Doctor of Philosophy (PhD) in Kaizen Management (Quality and Productivity Management)(by Operations and Quality Management Chair, School of Mechanical and Industrial Engineering, Ethiopian Institute of Technology – Mekelle (EiT-M), Mekelle Universty)	May 2018

### 3.4 Details of Activities

This section describes those activities requiring detailed scrutiny among those activities mentioned earlier in “3.2 Degree of Achievement of Each Indicator”.

#### 3.4.1 Common Activities for All Outputs

##### (1) JCC

During the project period, the JCC met seven times as outlined in the table below.

Table-24 Outline of Each JCC Meeting

	Date/Venue	Outline	Chairman
First	2016/5/25 9:00-10:30 @MoPSHRD	<ul style="list-style-type: none"> <li>Confirmation of the Work Plan and sharing of the activity plan</li> <li>Revision of PDM (Ver.1)</li> </ul>	State Minister, MoPSHRD
Second	2016/12/15 9:00-11:30 @MoPSHRD	<ul style="list-style-type: none"> <li>Sharing of progress of project activities</li> <li>PDM (Ver.2)</li> </ul>	Minister, MoPSHRD
Third	2017/4/18 15:00-17:00 @MoPSHRD	<ul style="list-style-type: none"> <li>Sharing of progress of project activities</li> <li>Introduction of the outline of CARS</li> </ul>	Minister, MoPSHRD
Fourth	2018/1/26 9:00-11:30 @MoPSHRD	<ul style="list-style-type: none"> <li>Introduction of KAIZEN dissemination activities by the EKI</li> <li>Sharing of progress of project activities</li> <li>State of construction of the industrial resource development centre</li> </ul>	Minister, MoPSHRD
Fifth	2018/11/30 9:00-11:30 @Civil Service Commission (CSC)	<ul style="list-style-type: none"> <li>Introduction of KAIZEN dissemination activities by the EKI</li> <li>Sharing of progress of project activities</li> <li>Participation by the JICA Headquarters Mission</li> </ul>	Commissioner, CSC
Sixth	2019/12/5 14:00-17:00 @CSC	<ul style="list-style-type: none"> <li>Sharing of progress of project activities</li> <li>Introduction of the outline of the EKI’s 10-year Strategic Plan</li> </ul>	Commissioner, CSC
Seventh	2020/5/29 9:00-13:00 Via Zoom	<ul style="list-style-type: none"> <li>Reporting of the project results and joint evaluation results</li> <li>Handling of COVID-19 by the EKI</li> <li>Way forward suggestions by the JICA Headquarters</li> </ul>	Commissioner, CSC

At the start of the Project, it was planned the Project Team of Japanese experts to start the work in Ethiopia in late July, 2015, marking the implementation of full-scale project activities. However, only a discussion on the Work Plan in the short-term field work period (early August to mid-September, 2015) took place because of the absence of key members on the EKI side due to staff departures, official trips and other reasons. The first JCC meeting was finally held much later on 25th May, 2016, partly because of the change of the competent ministry supervising the EKI from the MoI to the MoPSHRD following the government reorganization in October, 2015 and partly because of the reorganization of the EKI itself (the Work Plan itself secured the consent of the EKI at the end of December, 2015).

At the final seventh JCC meeting, the Directorate General of the EKI acted as the host for the first ever teleconference using Zoom as all of the Japanese experts had returned to Japan in mid-March, 2020 due to the global spread of COVID-19. Some 40 people, including those representing stakeholder organizations and enterprises in Ethiopia and the Japanese Ambassador to Ethiopia, participated in this teleconference.

### 3.4.2 Activities Related to Output 1

#### (1) Enhancement of the Management Capacity of the EKI's Senior Officials

As part of the Project, the Management Skill Training Programme was implemented, targeting senior officials of the EKI. While only senior officials of the EKI were initially assumed to be the targets of this programme, the scope of the trainees was expanded in response to a request made by the EKI to include candidates for senior positions (trainees of the intermediate-level KAIZEN training and others), EKI consultants and executives and managers of ICT enterprises. The contents of this Management Skill Training Programme are outlined in the table below.

Table-25 Outline of the Management Training for Senior Officials of the EKI

Item	Contents
Target Persons	Senior officials, candidates for senior official positions and consultants of the EKI
Purposes	<p>&lt;Senior Officials of the EKI&gt;</p> <ul style="list-style-type: none"> <li>• Understanding of the roles of (middle-ranking) managers and mastering of the necessary management skills</li> <li>• Examination of the possible application of mastered management skills at the EKI (for sector management)</li> </ul> <p>&lt;Other than Senior Officials&gt;</p> <ul style="list-style-type: none"> <li>• Understanding of the role of (middle-ranking) managers as candidates for future senior official positions and mastering of the necessary management skills</li> <li>• Examination of the possible application of mastered management skills at the EKI (for team management)</li> <li>• Use of mastered management skills to improve motivation and communication between middle-ranking managers of enterprises as part of consultation activities at the ICT enterprises</li> </ul> <p>&lt;Senior Officers and Managers of ICT Enterprises&gt;</p> <ul style="list-style-type: none"> <li>• Understanding of the role of managers to continually proceed with KAIZEN</li> <li>• Efforts to utilize the mastered management skills in one's own organization (utilization for departmental management, etc.)</li> </ul>



Item	Contents
Training Contents	<ul style="list-style-type: none"> <li>• Roles of a manager (concepts of management and organization; objectives of an organization; roles of a manager)</li> <li>• Performance management (performance indicators, KPI, PDCA and problem solving methods)</li> <li>• Training of subordinates (motivation; OJT guidance method; communication skills, including coaching and listening)</li> <li>• Development of organizational capacity (corporate culture; team management and productivity improvement; knowledge management)</li> <li>• Leadership for business innovation (necessity for innovation; leadership and requirements of a leader)</li> </ul>
Training Duration	3-4 days
Completed Training	<p>First : 17<sup>th</sup> and 18<sup>th</sup> November and 2<sup>nd</sup> and 3<sup>rd</sup> December, 2015 (4 days) Participants: 22 (9 EKI senior officials; 12 EKI consultants; 1 other)</p> <p>Second : 2<sup>nd</sup> – 4<sup>th</sup> and 6<sup>th</sup> May, 2016 (4 days) Participants: 21 (5 EKI senior officials; 16 EKI consultants)</p> <p>Third : 23<sup>rd</sup> – 26<sup>th</sup> May, 2016 (4 days) Participants: 26 (entirely senior officers and managers of the first batch ICT enterprises: 3 – 5 from each enterprise)</p> <p>Fourth : 15<sup>th</sup> – 17<sup>th</sup> May, 2017 (3 days) &lt;S&gt; Participants: 20 (6 EKI senior officials; 14 senior officers and managers of the 4 second batch ICT enterprises)</p> <p>Fifth : 31<sup>st</sup> October – 2<sup>nd</sup> November, 2019 (3 days) Participants: 35 (CEOs and managers of 12 public enterprises in Amhara State)</p>

Because of the generally high evaluation results of this programme by the participants from enterprises, there was an attempt to foster EKI trainers to lead the programme so that the EKI could provide this training service to enterprises in addition to improvement of the management capacity of senior officials of the EKI. Some five people were selected as candidates for such trainer's positions and these people underwent ToT (training of trainers on management skills). In the end, three people listed in the table below were fostered as trainers and were in charge of all lectures during the fifth programme which was considered a "pilot training programme for enterprises".

Table-26 Trainers Trained by the Management Training

No.	Name	Directorate/Post
1	Mr. Andualem Ayele	Senior KAIZEN Consultant, Chemical Industry KAIZEN Directorate
2	Mr. Weldemhret Aregay	Senior KAIZEN Consultant, Metal Industry KAIZEN Directorate
3	Ms. Selamawit Solomon	Senior KAIZEN Consultant, Agro, Food and Beverage Industry KAIZEN Directorate

## (2) Formulation of Guidelines for Organizational KAIZEN

As the EKI has been rapidly expanding, there is an urgent need to enhance its own organizational strength. While efforts are being made, the current situation appears to be that enhancement of the organizational strength is trailing behind the pace of expansion. To deal with this problem, the JICA Project Team prepared the "Proposal for Organizational KAIZEN and Development at the

EKI” consisting of the following five themes in November, 2018 for the purpose of further enhancing the organizational management capacity of the EKI.

- (i) Effective implementation of a directorate’s weekly meeting
- (ii) Matching aspirations of each consultant with the EKI’s future direction
- (iii) Generalisation, accumulation and utilization of good and bad practices in the directorate
- (iv) Standardization of consulting activities in the directorate
- (v) Further dissemination of KAIZEN through professional seminars

The structure of organizational KAIZEN is shown below.

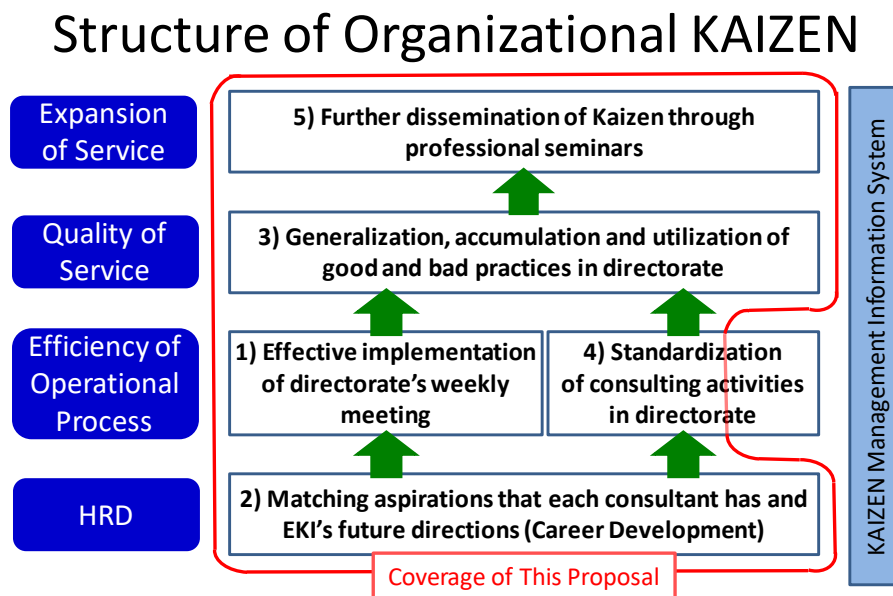


Fig.-3 Structure of Organizational KAIZEN

Several activities were carried out in regard to the five themes mentioned above. These included (i) interviews at the four targeted directorates jointly selected by the EKI and the Project Team and also various related directorates, (ii) analysis of information obtained and preparation of a proposal document for KAIZEN and (iii) presentation of and opinion exchange regarding the proposal document to/with senior officials and directors of the EKI. Based on the results of such analysis and opinion exchange, the Guideline for Organizational Management of Civil Service Organization was formulated as the organizational KAIZEN guideline.

### 3.4.3 Activities Related to Output 2

- (1) Formulation and Implementation of Intermediate-level KAIZEN Services Implementation Plan
  - 1) Outline of the Implementation of Intermediate-level KAIZEN Training

Throughout the project period, intermediate-level KAIZEN training was implemented five times. Each batch of this training is outlined in the table below.

Table-27 Outline of Training in Five Batches

Batch	Implementation Schedule		No. of Trainees		No. of ICT Enterprises		No. of CFTs	
	CRT	ICT	Planned	Actual	Planned	Actual	Planned	Actual
First	2015/11/2-12/1	2015/12/7-2016/6/26	18	<b>17</b>	6	<b>6</b>	60	<b>72</b>
Second	2016/9/19-10/14	2016/10/19-2017/5/12	18	<b>17</b>	6	<b>6</b>	60	<b>122</b>
Third	2017/12/4-12/29	2018/1/2-2018/9/9	18	<b>16</b>	9	<b>9</b>	90	<b>111</b>
Fourth	2019/1/16-2/5	2019/2/6-2019/7/26	20	<b>19</b>	10	<b>10</b>	100	<b>129</b>
Fifth	2019/9/16-10/8	2019/10/9-2020/5/20	14	<b>14</b>	7	<b>7</b>	70	<b>70</b>
Total	-	-	88	<b>83</b>	38	<b>38</b>	380	<b>504</b>

At the start of the Project, the target number of trainees was proposed by the Project Team to be six in each batch and 30 in five batches based on the number of staff members of the EKI, level of Ethiopian industries and actual needs of local enterprises. However, the EKI requested an increase of the trainees in the light of the anticipated expansion of its organization and the need to enhance the motivation of its consultants. After discussions between the EKI and the Project Team, the number of trainees in each batch was increased to around 18. Because the EKI was under the jurisdiction of the MoI at the time, ICT enterprises were restricted to those in the manufacturing industry. The subsequent change of the competent authority and need of Ethiopia for the wide dissemination of KAIZEN led to the experimental inclusion of enterprises in the public sector and health sector in the ICT from the fourth batch. Such flexibility of the plan in response to Ethiopia's needs and changing circumstances resulted in the smooth progress of activities and realization of the intended outcomes while developing a relationship of trust with the EKI.

## 2) Standardization of Teaching Materials for CRT

To ensure the appropriate implementation of intermediate-level KAIZEN training throughout the five batches, the training plan was reviewed and the plan for the next batch was formulated at the end of each batch, taking the results of a questionnaire survey, etc. into consideration. In regard to the CRT, the teaching materials were reviewed to correspond to the level and needs of the actual trainees and the training proceeded from one batch to another and the case method and case study were steadily developed and improved. In the end, standard teaching materials for CRT for intermediate-level KAIZEN training were compiled based on the CRT schedule and teaching materials used in the fifth batch. The CRT schedule for the five batch is shown in the table below.

Table-28 CRT Schedule for Fifth Batch Training

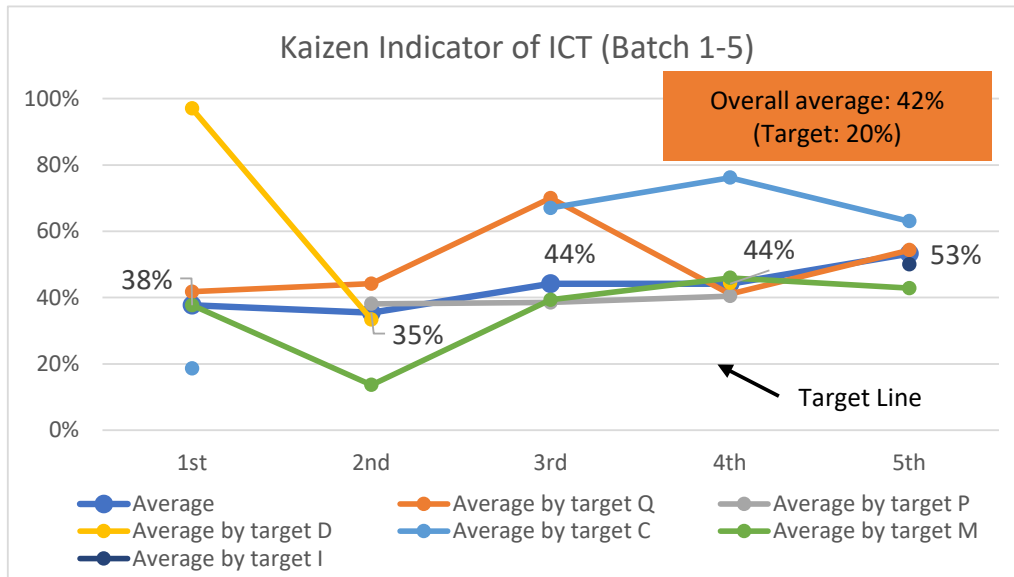
Date	Morning (9:00-12:00)	Afternoon (13:30-16:30)
16 Sep. 2019 (Mon)	<ul style="list-style-type: none"> <li>✓ Orientation</li> <li>✓ Pre-CRT Exam</li> </ul>	✓ <b>Intermediate Kaizen Story and Tool</b>
17 Sep. (Tue)	<ul style="list-style-type: none"> <li>• QC story &amp; tools</li> <li>• IE</li> <li>• Case method</li> </ul>	(to be continued)
18 Sep. (Wed)	(to be continued)	(to be continued)
19 Sep. (Thu)	<ul style="list-style-type: none"> <li>✓ <b>Production Planning</b></li> <li>• Outline</li> <li>• Production types</li> </ul>	<ul style="list-style-type: none"> <li>• Steps of production planning</li> <li>• Bullwhip effect</li> <li>• MRP</li> </ul>
20 Sep. (Fri)	(to be continued)	(to be continued)
Weekend		
23 Sep. (Mon)	<ul style="list-style-type: none"> <li>✓ <b>Toyota Production System (TPS)</b></li> <li>• Heijyunka</li> <li>• Standardized work</li> <li>• Visual control &amp; 5S</li> </ul>	<ul style="list-style-type: none"> <li>• Jidoka &amp; Five Whys</li> <li>• Just-in-Time</li> <li>• Value Stream Map</li> </ul>
24 Sep. (Tue)	<ul style="list-style-type: none"> <li>• Case Method</li> </ul>	<ul style="list-style-type: none"> <li>• Kanban training</li> </ul>
25 Sep. (Wed)	<ul style="list-style-type: none"> <li>✓ <b>Cost and Accounting</b></li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
26 Sep. (Thu)	<ul style="list-style-type: none"> <li>✓ <b>Economic Engineering</b></li> <li>• Kaizen effect calculation</li> </ul>	<ul style="list-style-type: none"> <li>• Cost &amp; profit study</li> <li>• Sunk Cost</li> </ul>
27 Sep. (Fri)	<ul style="list-style-type: none"> <li>• Capacity and profitability analysis</li> <li>• Investment pay-off analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
Weekend		
30 Sep. (Mon)	<ul style="list-style-type: none"> <li>✓ <b>Inherent Technology</b></li> <li>• Briefing</li> </ul>	<ul style="list-style-type: none"> <li>• Visit to MIDI</li> </ul>
1 Oct. (Tue)	<ul style="list-style-type: none"> <li>• Visit to LIDI</li> </ul>	<ul style="list-style-type: none"> <li>• Visit to TIDI</li> </ul>
2 Oct. (Wed)	<ul style="list-style-type: none"> <li>✓ <b>TQM</b></li> <li>• Framework of TQM</li> <li>• SWOT analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
3 Oct. (Thu)	<ul style="list-style-type: none"> <li>• Policy management</li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
4 Oct. (Fri)	<ul style="list-style-type: none"> <li>✓ <b>TPM</b></li> <li>• Steps of TPM</li> <li>• 16 major losses</li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
Weekend		
7 Oct. (Mon)	<ul style="list-style-type: none"> <li>• 8 pillars of TPM</li> <li>• Preventive maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Case method</li> </ul>
8 Oct. (Tue)	<ul style="list-style-type: none"> <li>✓ <b>Ethical code</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Orientation of ICT</li> <li>✓ Post-CRT Exam</li> </ul>

### 3) KAIZEN Indicators for ICT

The initial PDM listed the average increase rate of productivity between before and after KAIZEN as Indicator 2 for the Project Purpose. However, as KAIZEN includes such targets as quality in addition to productivity, the KAIZEN indicators were defined and sorted out. To be more precise, following the revision of the PDM in December, 2016, it was agreed between the EKI and the Project Team to (i) divide “advanced KAIZEN” into “advanced level” and “intermediate level” and to set “intermediate-level KAIZEN” as the target level for the current technology transfer under the Project and (ii) use KAIZEN indicators (KIs) to measure the results of KAIZEN implementation in relation to the 8 KAIZEN targets of the EKI. Based on this agreement, the target

value of each KAIZEN indicator was set (see Attachment 3 of Separate Volume I: Products (Guidelines, etc.) for the KAIZEN indicators).

The figure below shows the calculated average value of the KAIZEN indicators for each target based on the results of the implemented KAIZEN activities in each batch.



Note: Q: Quality, P: Productivity, D: Delivery, C: Cost, M: Maintenance, I: Institution building

Fig.-4 Performance of KAIZEN Indicator by Target

Indicator 2 for the Project Purpose: Against the planned average increase of 20%, the average value for each batch ranged from 35% to 53%, confirming the achievement of positive KAIZEN effects at ICT enterprises.

#### 4) Evaluation of the Capacity of the Trainees

##### ① Evaluation Items

The trainees were evaluated in terms of three categories: (i) level of knowledge regarding intermediate-level KAIZEN as determined by the written examination (referred to as “CRT evaluation”), (ii) attitude competency during the training period (motivation, cooperativeness, ability to communicate, morale, etc.) (referred to as “attitude evaluation”) and (iii) evaluation at the Final Progress Sharing Meeting (FPSM) to measure the learning level during training (referred to as “FPSM evaluation”).

##### ② Evaluation Methods

###### a) CRT Evaluation (Post-CRT)

A completion test was conducted on the last day of the CRT and the score achieved by each trainee was used as the evaluation score for the trainee in question. Those failing to

reach the pass level (70 points) underwent an additional test and those passing the additional test were uniformly given a score of 70 points.

b) Attitude Evaluation

Firstly, three technology experts responsible for training conducted their own evaluation of the respective trainees in their charge and compared the assessed levels of the trainees with one another to make the assessment fairer. The evaluation score for each trainee was then determined at the end of the ICT through review and adjustment of the general performance of each trainee in the course of the training.

c) FPSM Evaluation

The evaluation score for the FPSM evaluation using the evaluation standard sheet was the score calculated on the basis of the presentation performance of each trainee at the Final Progress Sharing Meeting (FPSM) at the end of the ICT.

③ Evaluation Results

The overall evaluation score (%) was evaluated using the following formula based on the evaluation scores of the three types of evaluation described above.

$$\text{Overall evaluation score (\%)} = \text{CRT evaluation score} \times 20\% + \text{attitude evaluation score} \times 30\% + \text{FPSM evaluation score} \times 50\%$$

The overall results for all of the trainees of the five batches are shown in the table below. The pass level is 70% or higher in the overall score.

Table-29 Overall Evaluation Results of Trainees of Five Batches

Batch	(a) CRT test	(b) Attitude competency evaluation	(c) Technical competency evaluation	Overall
1 <sup>st</sup>	72%	82%	-	-
2 <sup>nd</sup>	81%	81%	80%	80%
3 <sup>rd</sup>	74%	73%	79%	76%
4 <sup>th</sup>	77%	75%	78%	77%
5 <sup>th</sup>	77%	80%	79%	79%

The overall evaluation method was not yet developed for the first batch training and the pass or failure of a trainee was based on the evaluation results for CRT evaluation and attitude evaluation. The evaluation system was reviewed and improved, taking the results of the first batch training results into consideration. For the second batch training, the overall evaluation method based on three aspects was introduced (see Attachment 5 of Separate Volume I : Products (Guidelines, etc.)).

## 5) Implications of Statistical Analysis Results of Consultant Evaluation Results

### ① Purpose of Analysis

As mentioned above, the overall evaluation of trainees based on the three evaluation categories of “CRT evaluation (post-CRT)”, “attitude evaluation” and “FPSM evaluation” was in place from the second batch training onwards. As a result, it was possible to obtain evaluation values for 65 trainees from the second to the fifth batch training based on the common evaluation method. It was decided to conduct a multiple regression analysis between evaluation categories and also a statistical analysis of the correlation between the personal attributes of a trainee and the overall evaluation result in order to obtain the more effective development of a consultant’s capacity and/or improvement of the KAIZEN results.

### ② Analysis Results

#### a) Database

A database incorporating gender, affiliation, position, years of experience, major subject at university and academic performance (for some) as well as the evaluation scores for three categories and the overall score was created for analysis.

Table-30 Consultant Database (Excerpt)

No.	Name	Batch	Post CRT	Attitude	FPSM	Total	M/F	Affiliation	Position	Organization	Years of experience	B.A. (B.Sc.)	Academic performance
303	XXXX	3	0.870	0.833	0.820	0.834	M	TVET Kaizen Directorate	Consultant	EKI	5.1	Industrial Engineering	3.34
306	XXXX	3	0.560	0.733	0.840	0.780	F	Agro Food and Beverage Industry Kaizen Directorate	Assistant Consultant	EKI	4.3	Industrial Engineering	2.73
308	XXXX	3	0.580	0.767	0.840	0.790	F	Chemical Industry Kaizen Directorate	Assistant Consultant	EKI	4.3	Industrial Engineering	2.41
311	XXXX	3	0.730	0.900	0.850	0.841	M	Agro Food and Beverage Industry Kaizen Directorate	Consultant	EKI	5.4	Industrial Engineering	3.14
313	XXXX	3	0.720	0.900	0.850	0.839	F	Metal Industry Kaizen Directorate	Assistant Consultant	EKI	3.1	Mechanical Engineering	3.04
307	XXXX	3	0.740	0.767	0.850	0.803	F	Construction Works Kaizen Directorate	Junior Consultant	EKI	2.9	Construction Technology	2.64
314	XXXX	3	0.770	0.767	0.800	0.784	F	Construction Works Kaizen Directorate	Junior Consultant	EKI	2.9	Construction Technology	2.52
315	XXXX	3	0.650	0.733	0.770	0.745	M	Construction Works Kaizen Directorate	Junior Consultant	EKI	2.9	Construction Technology	2.76
312	XXXX	3	0.640	0.733	0.800	0.760	F	Construction Works Kaizen Directorate	Junior Consultant	EKI	2.5	Civil Engineering	2.52
317	XXXX	3	0.740	0.367	0.660	0.588	M	Construction Works Kaizen Directorate	Junior Consultant	EKI	2.5	Civil Engineering	3.09
310	XXXX	3	0.730	0.767	0.780	0.766	M	Agro Food and Beverage Industry Kaizen Directorate	Assistant Consultant	EKI	2.5	Food & Process Engineering	3.16
418	XXXX	4	0.720	0.700	0.700	0.704	M	Awarding, Recognition and Certification Directorate	Associate Kaizen Researcher	EKI	3.6	Economics	2.94
416	XXXX	4	0.700	0.700	0.750	0.725	M	Basic Utility Service	Associate Kaizen Consultant	EKI	3.1	Management	
402	XXXX	4	0.880	0.900	0.820	0.854	M	Basic Utility Service	Lead Kaizen Consultant	EKI	2.10	Tourism Management	
403	XXXX	4	0.870	0.867	0.810	0.839	M	Construction Works	Director	EKI	5.4	Urban Management	2.92
401	XXXX	4	0.880	0.900	0.820	0.856	M	Basic Utility Service	Senior Kaizen Consultant	EKI	2.10	Tourism Management	3.68
404	XXXX	4	0.910	0.800	0.810	0.827	M	Construction Works	Senior Kaizen Consultant	EKI	2.1	Economics	2.75
407	XXXX	4	0.840	0.800	0.800	0.808	M	Logistics and Supply Works	Associate Kaizen Consultant	EKI	3.1	Logistic	2.99
409	XXXX	4	0.670	0.800	0.790	0.775	M	Natural Heritage and Tourism	Associate Kaizen Consultant	EKI	3.6	Tourism Management	3.4
408	XXXX	4	0.750	0.800	0.770	0.775	M	Regional and City Kaizen Directorate	Associate Consultant	EKI	3.1	Tourism Management	

b) Multiple Regression Analysis of Post-CRT and Attitude to FPSM

It is expected that good scores for “post-CRT” indicating the classroom performance and for “attitude” indicating the attitude towards practical learning lead to a high FPSM score. The actual

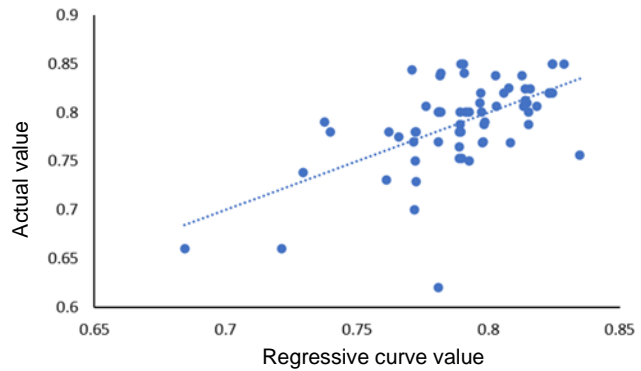


Fig.-5 Actual FPSM Value and Regression Curve Value

multiple regression analysis results of this correlation show a regression coefficient for post-CRT of -0.0077, a regression coefficient for attitude of 0.2623 and an intercept value of 0.5938. As the F value and P value for the multiple regression line were 16.2 and below 0.05 respectively, significant correlation was affirmed with 95% probability. In other words, a consultant with good knowledge of TQM, TPM, TPS, etc. and also with a good attitude in terms of communication with an enterprise and leadership is expected to achieve better KAIZEN results. The above figure is a dispersion diagramme of the FPSM values from the regression curve and actual FPSM values. Although the divergence between these two values is large in some cases, this may be the result of inadequate KAIZEN activities due to an insufficient KAIZEN activity implementation system or inferior operating conditions on the part of an enterprise or, conversely, due to a very high actual result reflecting the enthusiastic commitment to KAIZEN among some enterprises.

c) Correlation between Consultant’s Attributes and Total Score and Supplementary Analysis

c)-1 Correlation between Attributes and Total Score

Any finding of correlation between the attributes of individual consultants and their total scores on the database is useful information to find a consultant who is capable of leading high level KAIZEN efforts. The table below shows the correlation coefficient or correlation ratio between each attribute and the total value.



Table-31 Correlation between Consultant's Attributes and Total Value

Attribute	Correlation Coefficient or Correlation Ratio*	Judgement Result
Affiliation	0.28*	Weak correlation
Position	0.44*	Viable correlation
Major Subject at an university	0.35*	Weak correlation
Academic performance	0.15	No correlation
Years of experience	0.15	No correlation
Gender	$\leq 0.1^*$	No correlation
Batch	$\leq 0.1^*$	No correlation

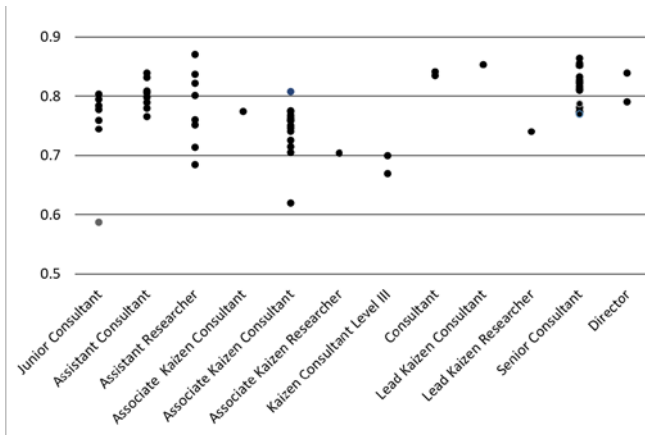
The analysis results generally indicate that there is no correlation except position. In other words, the trainees can equip themselves with new skills through training regardless of their personal attributes. Further analysis led to the following information.

c)-2 Supplementary Analysis

- Position

The correlation with position shows that the higher the job position of a trainee is, the higher the total score is. As the table below shows, there is a tendency for the total score to become higher from the position of junior to assistant, lead and senior consultant.

Table-32 Dispersion and Average Score by Position

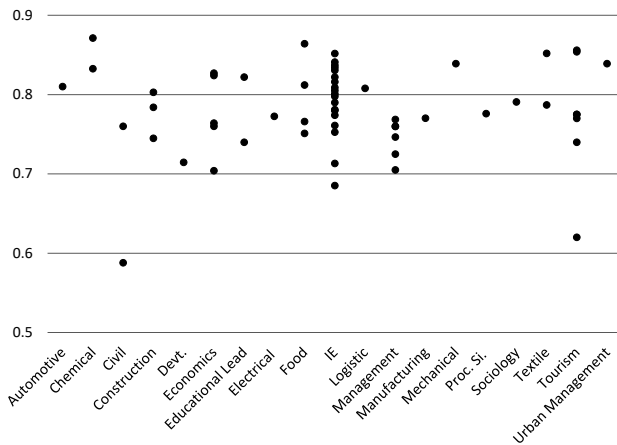


Position	Number	Overall Average
Junior Consultant	7	75.0%
Assistant Consultant	8	80.2%
Assistant Researcher	8	78.0%
Associate Kaizen Consultant	1	77.5%
Associate Kaizen Consultant	15	74.5%
Associate Kaizen Researcher	1	70.4%
Kaizen Consultant Level III	2	68.5%
Consultant	2	83.8%
Lead Kaizen Consultant	1	85.4%
Lead Kaizen Researcher	1	74.0%
Senior Consultant	17	81.3%
Director	2	81.5%

- Major Subject at University

While the correlation with the major subject at university is weak, the average score among those majoring in IE, accounting for a large proportion of the trainees, is relatively high with less dispersion. In short, those majoring in IE at university have a higher total score compared to those majoring in other subjects with 85% reliability as their t value and p value compared to the average values of others are 1.5 and 0.13 respectively.

Table-33 Dispersion and Average Score by Major Subject

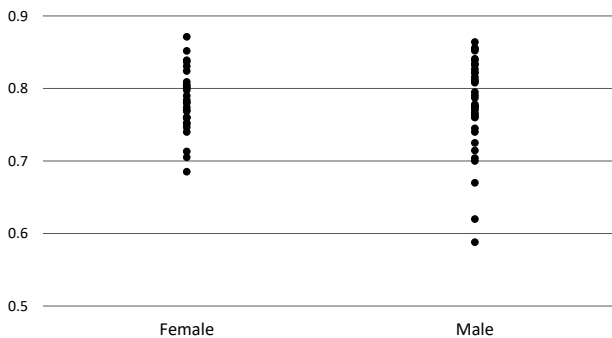


Major Subject at University	Number	Overall Average
Automotive	1	81.0%
Chemical	2	85.2%
Civil	2	67.4%
Construction	3	77.7%
Devt.	1	71.5%
Economics	5	77.6%
Educational Lead	2	78.1%
Electrical	1	77.3%
Food	4	79.8%
IE	19	79.4%
Logistic	1	80.8%
Management	6	74.4%
Manufacturing	1	77.0%
Mechanical	1	83.9%
Proc. Si.	1	77.6%
Sociology	1	79.1%
Textile	2	82.0%
Tourism	7	77.0%
Urban Management	1	83.9%

- Gender

Although there is no correlation with gender, dispersion is very low among females, suggesting that female consultants are more likely to master the training contents and produce training results equally among themselves.

Table-34 Dispersion and Average Score by Gender



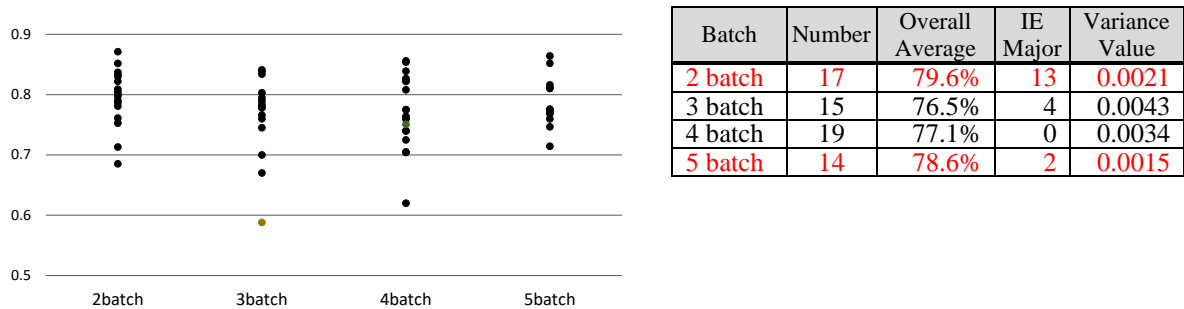
Gender	Number	Overall Average	Variance Value
Female	28	78.2%	0.0019
Male	37	77.7%	0.0039

- Batch

While there is no correlation with the batch, the average score is high and the dispersion is low for the second and fifth batches. The reason in the case of the second batch is the high proportion of those majoring in IE as shown in the table below. Meanwhile, the fifth batch trainees show the second highest average score and the lowest level of dispersion although the number of trainees with an IE background is small. The reasons for this are inferred to be (i) the appointment of assistant trainers to support the JICA expert and to lead the training and (ii) the increasingly shared know-how of KAIZEN among EKI consultants by the time of

the implementation of the final batch training. The assistant trainers in particular provided advice whenever the trainees experienced a stumbling block. Given this situation, it is hoped that the EKI has built the foundations to proceed with KAIZEN without the assistance of JICA experts in the coming years.

Table-35 Dispersion and Average Value by Batch



#### d) Implications of Statistical Analysis

- Use of tools to develop the evaluation method

It is hoped that the evaluation method based on post-CRT, attitude and FPSM which was used in the Project will continue to be used for practical work as a tool to foster consultants. The capacity of consultants can be enhanced by consolidating their KAIZEN knowledge through regular written examinations and conducting personal interviews by someone in a higher position to provide coaching on each item for attitude evaluation. High KAIZEN results can be expected through such efforts and the resulting experience of success is expected to further enhance the capacity of consultants.

- Fostering of consultants equipped with higher skills through selective education

The analysis results by attribute suggest that the involvement of a senior or lead consultant with an IE background in intermediate-level KAIZEN offers a high level of probability of producing an excellent result. The fostering of consultants equipped with higher skills is believed to be feasible by selecting consultants with such a background and utilizing the development tools described earlier.

## (2) Collaboration with Higher Educational Institutions

### 1) Current Situation of the Master's Degree Course

The KAIZEN master's degree course launched in March, 2014 for the purpose of further enhancing the consultant knowledge and skills of the EKI consultants consists of three semesters (study of various subjects in the first and second semesters and thesis writing in the third semester).

Table-36 List of Subjects Taught in the KAIZEN Master’s Degree Course

1	Total Quality Management (TQM)
2	3MUs & 5S principle
3	Work study & Plant layout
4	Research Methodology
5	Kaizen Philosophy
6	Total Productive Maintenance (TPM)
7	Industrial Psychology and Communication Skill
8	Change Management
9	Toyota Production System (TPS)
10	Quality Control Circle and Problem-Solving Techniques

As of June, 2020, the KAIZEN Master’s degree course has been completed four times and the implementation schedule and number of completing students in each generation are shown in the table below.

Table-37 Schedule of Master’s Degree Course on KAIZEN and Number of Completed Students

Phase	Schedule	Number of Completed Students (Including Those Expected to Complete)
First	March, 2014~September, 2015	19 <sup>6</sup> (EKI: 19)
Second	July, 2015~June, 2017	16 (EKI: 16)
Third	March, 2017~October, 2018	13 (EKI: 10, AACKI: 2, DDMKI: 1)
Fourth	March, 2018~July, 2019 (Includes a two month long bridge course)	18 (EKI: 18) Expected to complete
Total	-	66 (EKI: 63)

Under the EKI’s consultant development plan, those attending the master’s degree course become trainees of the intermediate-level KAIZEN training as a means of improving their capacity (see the table below). In the case of the fifth generation of master’s degree course, it is expected to start in June, 2020 or later after the fifth batch of intermediate-level KAIZEN training because of the timing of completion of the Project.

Table-38 Master’s Degree Course Schedule for Third Through Fifth Batch (Actual and Planned)

Year	2017												2018												2019												2020												2021											
Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
3rd Batch	MSc: 1st Semester (green), 2nd Semester (red)												3rd Semester (Thesis writing) (blue)																								The end of project																							
Kaizen Training in Project													Intermediate Kaizen training (red bar) CRT, ICT																																															
4th Batch													MSc: 1st Semester (green), 2nd Semester (red)												3rd Semester (Thesis writing) (blue)																																			
Kaizen Project																									4th Batch (red bar)																																			
5th Batch																																					MSc: 1st Semester (green), 2nd Semester (red), 3rd Semester (Thesis writing) (blue)																							
Kaizen Project																																					5th Batch (red bar)																							

<sup>6</sup> Apart from 18 consultants belonging to the EKI, one consultant belonging to the FeTA at the time completed the course with the EKI’s sponsorship (Mr. Biruk Wubishet, “Challenges of Kaizen Implementation and Sustainability in Micro and Small Enterprises”). This person became a researcher of the EKI in November, 2016.

## 2) Opening of the Kaizen Ph.D. Course and Support Activities

Since 2016, the JICA Project Team had been implementing support activities led by Professor Osaka, an expert responsible for “support for higher education”, to open a Kaizen Ph.D. course at Mekelle University. In September, 2018, the Board of Mekelle University approved the curriculum for this Ph.D. course, paving the way for the opening of the course in October, 2018. Prior to this, the selection of candidate Ph.D. students within the EKI and the entrance examination and interviews were held in August through September, 2018. Of the seven applicants from the EKI, four were selected as the first batch Ph.D. students (Table-40).

Table-39 Outline of the Kaizen Ph.D. Course

Item	Contents
Title	Doctor of Philosophy (Ph.D) in Kaizen Management (Quality and Productivity Management)
Purpose	Fostering of human resources with academic research ability and leadership in the field of Kaizen management
Duration	Four years (possible completion in three years or extension of the course by a further two years)
Contents and Units of the Ph.D. course	First year (First Semester and Second Semester): Course work (3 units/subject x 8 subjects = 24 units); each subject consists of 16 lessons Second year (First Semester): Internship (3 units) Second year (Second Semester) to Fourth Year (Second Semester): Thesis study (2 units/semester x 5 semesters = 10 units)
Course Subjects	<u>First Year First Semester</u> 1. Advanced Research Methods 2. Advanced Total Quality Management 3. Innovation Management 4. Strategic Management and Leadership <u>First Year Second Semester</u> 1. Lean Manufacturing 2. Industrial and Production Systems Engineering 3. Change Management 4. Seminar
Enrolment Requirements	One year after obtaining a master’s degree in a field related to KAIZEN, engineering, technology or management; a person with academic ability equivalent to a master’s degree holder; other
Course Completion Requirements	<ul style="list-style-type: none"> <li>• Publication of two or more academic papers</li> <li>• Passing of the final examination (presentation to examiners and public interview)</li> <li>• Required number of units completed: 33 – 37 (24 units from course work, 3 units from internship and 6 – 10 units from thesis study)</li> </ul>

Source: Postgraduate Program Curriculum and Handbook on Doctor of Philosophy (PhD) in Kaizen Management (Quality and Productivity Management), School of Mechanical and Industrial Engineering, Ethiopian Institute of Technology – Mekelle (EiT-M), Mekelle University, May 2018

Table-40 List of Kaizen Ph.D Course Students

No.	Name	Position in EKI
1	Mr. Haftu Hailu	Director, Chemical Industry Kaizen Directorate
2	Mr. Asnake Gudisa	Director, Agro, Food and Beverage Industry Kaizen Directorate
3	Mr. Tujuba Regasa	Director, University Kaizen Directorate
4	Mr. Biruk Wubishet	Director, Research and Best Practice Directorate

Following a request made by Mekelle University to JICA in June, 2018 for assistance for the implementation of a Ph.D course, it was decided to dispatch Professor Osada to teach two subjects (“Advanced Total Quality Management” and “Innovation Management”) out of the 8 subjects of the course (assistant lecturer: Dr. Fasil Tadesse). The opening ceremony for the Ph.D course was held on 15th October, 2018 to match the start of intensive lectures on these two subjects. The implementation schedule for the intensive lectures and lecturers for the eight subjects in the first year (first and second semesters) are listed in the table below.

Table-41 Implementation Schedule for Intensive Lectures and Lecturers  
for Subjects of the Kaizen Ph.D Course

Date	Course name	Main / Course assistant	Venue
October 15 – 19, 2018	Advance TQM (Kai 813)	Prof. Hiroshi OSADA / Dr. Fasil Tadesse	Federal TVET Institute
October 22 – 26, November 20, 2018	Innovation Management (Kai 815)	Prof. Hiroshi OSADA / Dr. Fasil Tadesse	
October 29 – November 02, 2018	Strategic Management and Leadership (Kai 817)	Dr. Yasin Ibrahim / Dr. Kinfe Tsegay	
November 12 – 16, 2018	Advanced Research Methods (Kai 811)	Dr. Mulu Bayaray / Dr. Haftu	
June 10 – 12, 2019	Seminar (Kai 816)	Dr. Mulu Bayaray / Dr. Kinfe Tsegay	EKI
June 13 – 15, 2019	Industrial and Production Systems Engineering (Kai 814)	Dr. Fasil Tadesse / Dr. Idris Zehredin	
June 17 – 19, 2019	Lean Manufacturing (Kai 812)	Dr. Yasin Ibrahim / Dr. Gebremeskel Kahsay	
June 20 – 22, 2019	Change Management (Kai 818)	Dr. Abebe Ejigu / Dr. Hailekiros Sibhato	

Historically, the KAIZEN Ph.D. course at Mekelle University was planned to seek a partnership with a Japanese university but this plan was abandoned. As an alternative, JICA proposed a new scholarship programme called “International Personnel Doctorate Course”. Although it took some time to finalize an accepting university, such university was decided using a connection between a member of the Project Team and the university concerned. One EKI consultant has passed the interview with the university and is expected to arrive in Japan in October, 2020 as a research student.

### 3.4.4 Activities Related to Output 3

#### (1) Dissemination of KAIZEN to Local Areas

The KAIZEN dissemination activities of the EKI in local areas mainly follow two methods. One is for the EKI to directly provide KAIZEN services for local enterprises, organizations and associations and the other is for local KAIZEN organizations directly controlled by local governments to provide KAIZEN services (see Fig.-5 below). The former involving the direct provision of services by the EKI is mainly observed in those areas where there is no local KAIZEN

organization. In these areas, the EKI directly provides basic level KAIZEN services. The EKI, in fact, provides intermediate level KAIZEN services in all areas. In the future, basic level KAIZEN services are expected to be provided by local KAIZEN organizations. In the case of the latter, the EKI are currently providing capacity building training and OJT for consultants working for local KAIZEN organizations or associations. Meanwhile, consultants of local KAIZEN organizations or associations are directly providing basic level KAIZEN services.

Assistance for the dissemination of KAIZEN to local areas under the Project included to accompany EKI personnel in response to a local move to establish a KAIZEN organization and to arrange a lecture as part of the dissemination of KAIZEN in addition to the work to clarify the demarcation between the EKI and local KAIZEN organizations in regard to the provision of KAIZEN services. To be more precise, the division of the roles between different organizations was clarified as shown in the following figure as such division became necessary in reference to the sector, scale, location and level of KAIZEN technology of individual target enterprises (see Table-43 for demarcation).

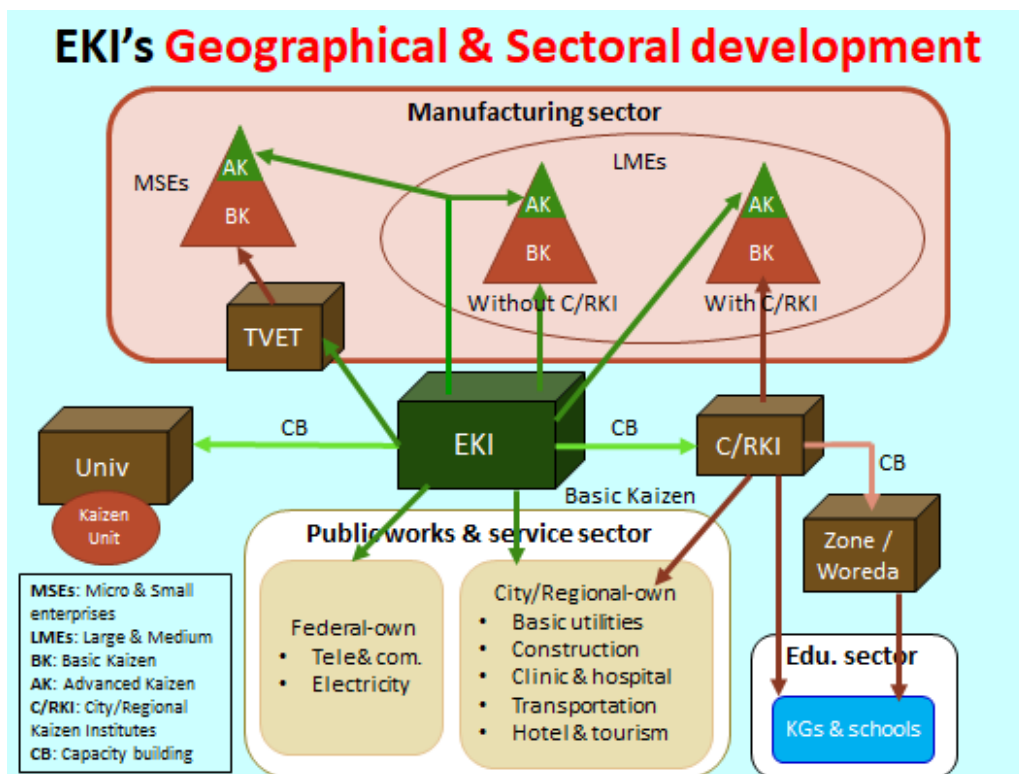


Fig.-6 EKI's Geographical and Sectoral Development

At present, local KAIZEN organizations are in place in four areas, i.e. Addis Ababa City, Dire Dawa City, Oromia State and Harari Region. The Amhara, SNNPR and Benishangul-Gumuz Regions have a section responsible for KAIZEN dissemination although a proper local KAIZEN organization has not yet been established. For these regions, the EKI is engaged in human resources development to disseminate basic KAIZEN. Preparatory work is in progress in four regional states

and the EKI is educating officials of local governments and various sectoral bureaus, including bureaus of public servants.

Table-42 State of Establishment of Local KAIZEN Organizations (as of June, 2020)

Name	Year of establishment	MoU	Proclamation	Name of organization	Scale of organization
Addis Ababa City	Nov. 2015		✓	Addis Ababa City KAIZEN Institute	43 consultants
Dire Dawa City	May 2016		✓	Dire Dawa Management and KAIZEN Institute	5 consultants
Oromia Region	Sept. 2016		✓	Oromia Regional KAIZEN Institute* in Oromia State University (*Initially, it was directorate and it became institute in March 2018.)	12 consultants
Amhara Region	Dec. 2017	✓ (Signed on Feb. 2018.)		KAIZEN Directorate in Amhara National Regional State Leadership Academy (ANRSLA).	1 director, 15 consultants and 15 <i>supporters</i> (prospect consultants) from different sectoral bureaus (Education, Health, Agriculture, Industry, Administration)
Harari Region	Dec. 2018		✓	Harari Management and KAIZEN Institute	3 consultants and 30 <i>supporters</i> (prospect consultants) from different sectoral bureaus
SNNPR	Nov. 2018	✓		Kaizen and Reform Directorate	15 consultants
Benishangul-Gumuz	Nov. 2018	✓		Under Benishangul-Gumuz Management Institute	17 consultants
Tigray	Under preparation (It is agreed by regional administration that Tigray Leadership Academy is to take responsibility to establish the regional KAIZEN institute.)				
Gambella	Under preparation				
Somali	Under preparation				
Afar	Under preparation				

Note: - All Kaizen institutes/offices are under Civil Service Office of each region.

- Under the MoU between EKI and each region, EKI shall provide capacity building activities for regional personnel and to support the basic Kaizen implementation. It is an experimental period to verify the effect of Kaizen in each region.

## (2) Cooperation with Other Related Organizations

Since 2017, the EKI has been implementing a KAIZEN training scheme called the Sectoral KAIZEN Movement, targeting engineers of research institutes for industrial development (MIDI, TIDI, LIDI, etc.) under the jurisdiction of the MoTI (formerly the MoI) to raise human resources equipped with basic KAIZEN knowledge and skills at these research institutes. Although the number of organizations implementing KAIZEN and those cooperating with KAIZEN activities is increasing through the active KAIZEN dissemination activities of the EKI as well as similar human resources development efforts by C/RKIs, there has been a chronic shortage of human resources to fully accommodate the external requests for the EKI's support for KAIZEN. In response, the EKI has compiled a demarcation paper to ensure the efficient implementation of KAIZEN while avoiding any overlapping of KAIZEN assistance between various KAIZEN organizations. The draft demarcation paper was discussed with the representatives of Oromia State and Amhara State on 30th November, 2018. There is now an agreement that this paper is considered to represent the policy of the EKI when coordinating with other organizations.



Table-43 Demarcation of Training and Consulting Concerning KAIZEN Management Technologies

Responsible organization	Target of Kaizen dissemination			Level / content of Kaizen		
				Kaizen management technology		Inherent technology
	Business category	Size / Type	Region / City	Basic	Intermediate	
Ethiopian Kaizen Institute (EKI)	Manufacturing	LMEs	<b>Where there is C/RKIs</b> AA, DD, Oromia, Amhara	✓	✓	* (Upon request, in cooperation with IDIs)
		LMEs	<b>Where there is not C/RKIs</b> Tigray, SNNPR, Harar, Afar, Somali, Genishangul-Gumuz, Gambera	✓	✓	ditto
		Small enterprises			✓	
	Construction		All (Mainly in AA and surroundings)	✓		
	Logistics and transportation			✓		
	Basic utilities	National enterprises		✓		
	Other services (Hotel, tourism, and other public services)			✓		
	Construction		<b>Where there is not C/RKIs</b>	✓		
	Logistics and transportation		Tigray, SNNPR, Harar, Afar, Somali, Genishangul Gumuz, Gambera	✓		
	Basic utilities	Regional enterprises		✓		
	Other services (Hotel, tourism, and other public services)			✓		
	Education	Bureau, KGs, Pri. Sec. and Preparatory schools	<b>Mainly for city/region without C/RKIs</b>	✓ (upon request)		
		Higher education (Univ., college)	All	✓		
	Health	Bureau, health clinics/posts	<b>Mainly for city/region without C/RKIs</b>	✓ (upon request)		
	Hospitals	All (Mainly in AA and surroundings)	✓			
Regional/City Kaizen Institutes (R/CKIs)	Manufacturing	MSEs (*)	Each city/region	✓	(✓****)	
	Construction			✓		
	Logistics and transportation			✓		
	Basic utilities	Regional/city enterprises		✓		
	Other services (Hotel, tourism, and other public services)			✓		
	Education	Bureau, Woreda, KGs, Pri. Sec. and Preparatory schools		✓		
	Health	Bureau, hospital, health clinics/posts		✓		
TVETs	Manufacturing, construction, trade, services and urban agri, etc.	MSEs (*)	All	✓		
Industrial Development Institutes (IDIs) **	Metal, Textile, Leather, Chemical & construction, Meat & milk, Food, beverage and pharmaceutical	LMSs and SMEs	All	*** (With EKI, who is responsible institute)	ditto	✓

\*\* : Metal (MIDI), Textile (TIDI), Leather (LIDI), Chemical & construction (CCDI), Meat & milk (MMDI), Food, beverage and pharmaceutical (FBPDI)

\*\*\* : Only for small enterprises, upon request.

The experience of a series of intermediate-level KAIZEN training has made it clear that the more advanced a KAIZEN task is, the more difficult it is to solve an associated problem solely using management technologies, making knowledge of inherent technologies essential to find suitable countermeasures. In fact, some efforts are being made from the third batch onwards, including the preparation of a curriculum for the learning of inherent technologies as part of the CRT and making research organizations to explain the contents of their services. Another effort is to make trainees visit research organizations (MIDI, TIDI and LIDI) to observe their mechanical equipment.

### (3) Operation of the KAIZEN Consultant Certification, Accreditation and Registration System (CARS)

#### 1) Outline of the CARS

The KAIZEN Consultant Certification, Accreditation and Registration System (CARS) was launched in May, 2017 and this system is outlined in the table below.

Table-44 Outline of the CARS

Item	Contents
Purpose	<p><u>To ensure the quality of consulting services.</u></p> <ol style="list-style-type: none"> <li>1) To improve the consulting techniques</li> <li>2) To provide the standards for Kaizen consulting competencies in human resources development</li> <li>3) To function as a roadmap of self-enlightenment of consultants.</li> </ol>
Type of Examination	<p><u>Verification Examination</u></p> <ul style="list-style-type: none"> <li>• 5S Leader</li> <li>• 5S Master</li> </ul> <p><u>Consultant Certification Examination</u></p> <ul style="list-style-type: none"> <li>• Basic consultant (First grade)</li> <li>• Intermediate consultant (Second grade)</li> <li>• Advanced consultant (Third grade)</li> <li>• Principal consultant (Fourth grade)</li> </ul> <p style="text-align: right;">} Core certification</p>
Difference between the Verification and Certification Examinations	<p>The verification examination checks and verifies that an applicant has reached a certain level of knowledge and skills. The consultant certification examination certifies that an applicant possesses the capacity and knowledge required to offer consultation.</p>
Flow of Examination	<p><u>Verification Examination</u></p> <ul style="list-style-type: none"> <li>• Written examination only</li> </ul> <p><u>Consultant Certification Examination (Core certification)</u></p> <ul style="list-style-type: none"> <li>• Confirmation of the eligibility for the examination, written examination, oral examination and overall evaluation</li> </ul> <p><u>Consultant Certification Examination (Principal consultant)</u></p> <ul style="list-style-type: none"> <li>• Confirmation of the eligibility for the examination, oral examination and overall evaluation</li> </ul>

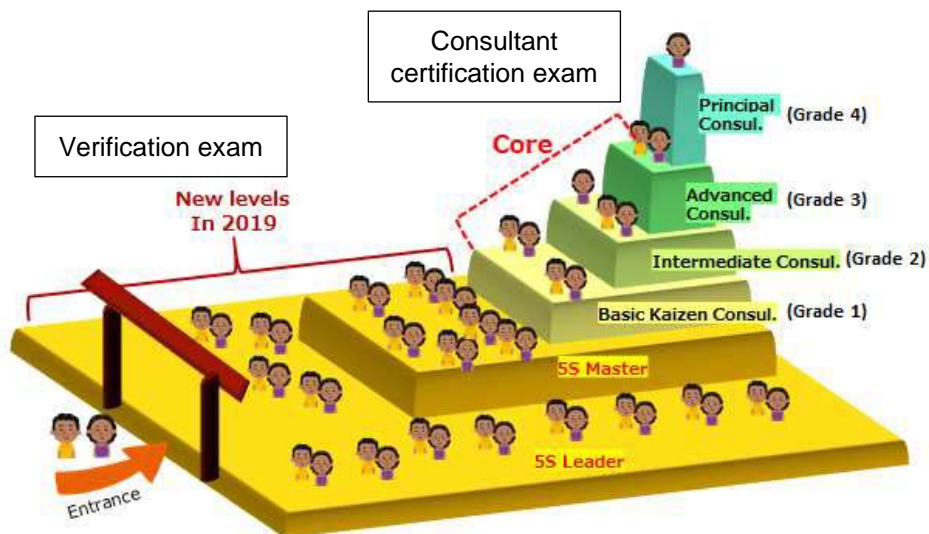


Fig.-7 Structure of the CARS

## 2) Implementation Situation of the CARS

Since the launch of the CARS, three CARS examinations have so far been held. The first CARS examination held in 2017 took place at two levels, i.e. BC and IC levels. In the second CARS examination in 2018, efforts were made to improve the operational aspect of the CARS, taking the implementation results of the first CARS examination into consideration, and the KAIZEN starter

(KS) test was also conducted as a verification examination in addition to the BC and IC examinations. It was then discovered that there was a very large gap between the KS test and the BC/IC examination in terms of the scope of the test/examination and level of difficulty and that the level of the BC examination was too high for participants from enterprises. To deal with these problems, the verification examination for a 5S leader/5S master, which is an examination specially featuring the 5S and which is neither a consultant qualification examination nor a knowledge-oriented KS test, was newly introduced to replace the KS test. As a result, the number of examinees from enterprises for this new 5S leader/5S master examination considerably increased to the point where 288 examinees passed this examination. The results of the past three CARS examinations are shown in the table below. For implementation of the third CARS examination, a Memorandum of Understanding (MoU) was concluded between the EKI and the Ethiopian Industrial Engineers Association (EIEA) and part of the administrative work for the CARS examination was entrusted to the EIEA. In line with such change of the CARS implementation system, the guidelines for the CARS were revised and the revised edition (Release 1.2) was distributed to stakeholders to develop a common understanding. This change enabled the EIEA to collect the examination fee, etc. from the latest examination to allocate such revenue to meet the operation cost. This arrangement has led to a situation where the administration of the CARS is conducted by a separate organization without incurring any financial loss and also without the need to revise the EKI's relevant proclamation.

Table-45 Results of the CARS Examination

	BC			IC			KS		5S Leader		5S Master	
	Applicants	Examinees	Successful Examinees	Applicants	Examinees	Successful Examinees	Examinees	Successful Examinees	Examinees	Successful Examinees	Examinees	Successful Examinees
First (2017)	58	30	<b>8</b>	33	20	<b>11</b>	-	-				
Second (2018)	82	47	<b>6</b>	21	6	<b>4</b>	70	60				
Third (2019)	134	56	<b>9</b>	65	24	<b>9</b>			270	<b>161</b>	265	<b>127</b>
Total	274	133	<b>23</b>	119	50	<b>24</b>	70	60	270	<b>161</b>	265	<b>127</b>

#### (4) Development of the Consultant Evaluation System

As a public organization, the EKI has its own personnel merit rating system but does not have an evaluation system for the capacity of consultants. As part of the efforts to rectify this situation, a questionnaire survey with all in-house consultants and an interview survey with those linked to the Human Resources Directorate were conducted from November to December, 2018 to obtain an insight into the existing consultant evaluation system and need for evaluation. The survey subjects included the method, frequency, fairness, standard evaluation items and degree of satisfaction

concerning the existing evaluation system at the EKI and the findings were analysed to prepare a draft evaluation framework. After discussions with the EKI management on this draft, the Consultant Evaluation Framework was developed in May, 2020 with a view to establishing a desirable consultant evaluation system.

The outline of this Framework is shown in the table below (see Attachment 7 of Separate Volume I: Products (Guidelines, etc.) for details).

Table-46 Outline of the Consultant Evaluation Framework

Item	Contents
Purpose	(a) Spreads EKI values (b) Realises a right person in right position (c) Makes feedback to unify future directions of EKI and consultants (d) Checks any difference between long-term human resource development (HRD) plan and actual situation (e) Determines personnel treatment
Principle	As convincing evaluation increases the motivation of consultants, the principle of evaluation is to conduct evaluation which earns the sense of satisfaction among consultants. Three elements, “validity”, “Objectivity” and “equitability” are required to achieve this principle. <div style="text-align: center;"> </div>
Outline	Evaluation consists of three components, i.e. a) Attitude, b) Competency and c) Performance. Each component has 4 to 6 evaluation criteria. a) Attitude : Inherent characteristics and abilities of the person. Enthusiasm and tenacity are also included although they may not appear or may appear later. b) Competency : Common characteristics and abilities required to produce positive results in the field of consulting. For example, persuasive power and listening ability are apparent common characteristics of capable consultants. c) Performance : Actual results produced by a person evaluated. There are two types of contribution: external contribution (to a client) and internal contribution (in-house).

(5) Activities Related to Productivity Indicators (Survey on Impacts of KAIZEN Activities on Productivity Indicators in Financial Statements)

1) Historical Changes of Impact Survey Method

As an initial plan adopted at the beginning of the Project, an impact survey was entrusted to the EDRI as a local subcontractor to grasp the impacts of KAIZEN guidance on enterprises. A treatment group (30 ICT enterprises) and control group (30 other enterprises) were established and baseline, midline and endline surveys were conducted using a survey sheet. However, it was difficult to obtain cooperation for the gathering of financial data, especially from enterprises in the control group, and the survey was terminated at the end of the first subcontract agreement period.

University professors<sup>7</sup> were then consulted on a possible alternative method and it was decided to examine the possibility of using a survey on productivity indicators by the Research and Best Practice Directorate of the EKI as an alternative survey.

## 2) Outline of the Survey on Productivity Indicators

To verify any contribution by KAIZEN, it is necessary to examine the impacts of KAIZEN activities from the financial viewpoint. Because of this, the productivity indicators to be evaluated by the EKI were examined in December, 2015 and it was decided to conduct “the analysis of value-added productivity targeting ICT enterprises” as a survey on the impacts of KAIZEN activities on productivity indicators in financial statements. These indicators and the survey method are outlined below.

Table-47 Outline and Survey Method of Value-Added Productivity Indicators

Item	Contents
Purpose	Measurement of the impacts/effects of KAIZEN activities in terms of productivity indicators
Target Enterprises	30 ICT enterprises (6 enterprises/batch x 5 batches)
Method	<ul style="list-style-type: none"> <li>• Interview survey at each ICT enterprise for ICT</li> <li>• Survey on the impacts of KAIZEN activities on productivity by comparing (i) the pre ad post-KAIZEN performance of each indicator at the enterprise level and (ii) a section (plant) targeted by KAIZEN activities with a section (plant) not targeted</li> </ul>
Main Productivity Indicators	<ul style="list-style-type: none"> <li>① Labour productivity (added value/no. of employees)</li> <li>② Ratio of added value (added value/sales)</li> <li>③ Sales per employee (sales/no. of employees)</li> <li>④ Capital intensity ratio (total assets/no. of employees)</li> <li>⑤ Total asset turnover (sales/total assets)</li> <li>⑥ Operating profit ratio (operating profit/sales)</li> </ul> <p>* Data on the “productivity of capital” and “total factor productivity” will also be separately collected for measurement.</p>

## 3) Issues for the Implementation of the Survey and Countermeasures

As described in the section on the indicator achievement section [Indicator 3-4], the survey produced 13 individual reports. There were several issues as listed below which were believed to be responsible for the fewer number of enterprises surveyed than originally anticipated.

- Resistance of business owners to providing financial data
- Incomplete data on financial matters, labour input, etc.
- Burden on the financial officers of enterprises

These issues appear to have been exacerbated by the facts that the EKI is a public organization and that only some 50% of the target enterprises listed the essential breakdown of the manufacturing cost, sales and administration cost and general management cost to pick up added-value items

<sup>7</sup> Professor Keijiro Otsuka of Kobe University and Associate Professor Go Shimada of Meiji University were approached for advice.

(personnel cost, rental fee and taxes other than corporate tax) even though they are mostly middle-scale or large enterprises routinely producing financial statements.

As one countermeasure to deal with these issues, there have been efforts to foster competent EKI personnel (researchers) to reduce the burden on the financial officers of enterprises while seeking the understanding of enterprises of such a need. In the first three years of the Project, the target EKI personnel for this were not clearly identified, creating a situation of repetitive classroom learning and the sorting out of data each time EKI officers were dispatched to enterprises. In the final two years of the Project, however, five officers of the Research and Best Practice Directorate were permanently assigned as researchers to conduct this work and each of them gained experience of conducting a financial survey at multiple enterprises. To be more precise, each researcher became able to complete the process of “explanation of the survey principle to an enterprise → obtaining of data from the enterprise → data input → data analysis → preparation of a report → presentation of the report to the owner of the enterprise” without external help. The five researchers fostered are listed in the table below.

Table-48 List of Researchers in Charge of the Productivity Indicator Survey

Name	Title
Mr. Tewodros Getachew	Lead KAIZEN Researcher /Acting Director
Ms. Feven Addis	Senior KAIZEN Researcher
Ms. Tadelech Tefera	KAIZEN Researcher
Ms. Betelhem Yitagesu	Associate KAIZEN Researcher
Mr. Ashebar Assefa	Associate KAIZEN Researcher

The continuous implementation of this survey is essential for the preservation and improvement of their capacity. In addition, it is desirable to conduct comparative analysis with the benchmark data compiled by the Central Statistical Agency for each type of manufacturing as well as construction industry in Japan and also to accumulate a number of enterprise analysis data for each sector for the purpose of improving the quality of reports, making the best use of one’s imagination.

(6) Preparation of a Standard KAIZEN Textbook for Capacity Development of Consultants

Since July, 2018, there has been a series of discussions with the EKI management on the concept of a standard KAIZEN textbook. The issues confirmed through these discussions are ① there are no systematically structured standard books which correspond to the levels of KAIZEN technology of consultants, ② a suitable textbook is necessary to prepare for the CARS examination and ③ a standard textbook is required to assist the consulting service of which the demand is expected to increase in the coming years. The outline of this standard textbook is shown below. The purposes of preparing such a textbook are assumed to be ① its use for various training schemes of the EKI, ② standards for the evaluation of consultants, ③ its use as a source material for the preparation of

questions for various qualification certification examinations and ④ its use as a textbook for third country training which is conducted by the EKI as a centre of excellence (CoE).

Table-49 Outline of the Standard KAIZEN Textbook

Title	“ <b>KAIZEN</b> ” — Guidebook for Consultant from Theoretical to Applications— or “ <b>KAIZEN Standard Book</b> ”—What and How of KAIZEN—
Style	<ul style="list-style-type: none"> <li>• Cover: soft cover</li> <li>• Volume: 400 pages (including cover, text and references)</li> <li>• Size: 16.1 mm x 23.9 mm (between B5 and A4)</li> <li>• Paper: coated paper for the cover and 40 – 50 gm paper for the rest</li> </ul>
Contents	<ul style="list-style-type: none"> <li>• KAIZEN technologies of basic and intermediate levels</li> <li>• 8 chapters and 161 sub-headings (topics)</li> </ul>
Language	English
Target Readers	<ul style="list-style-type: none"> <li>• Consultants, researchers and other staff members of the EKI</li> <li>• Consultants, researchers and other staff members of C/RKIs</li> <li>• TVET trainers</li> <li>• KAIZEN practitioners of manufacturing enterprises, schools, universities, hospitals and service providers</li> <li>• Persons interested in KAIZEN (students, TVET trainees and others)</li> <li>• Trainees from other African countries</li> </ul>
Purpose of Use	<ul style="list-style-type: none"> <li>• Textbook for basic level and intermediate level KAIZEN training</li> <li>• Self-learning by consultants</li> <li>• Textbook for people intending to implement KAIZEN in the future</li> </ul>
Editors and Authors	Chief editor (technical aspect and overall contents): 1 Chief editor (language): 1 Editors: 6 Authors: approximately 20
Publication Plan	Price: 400 Birr Publisher: undecided Sales routes: undecided

By July, 2019, nine volunteers had been selected from the EKI and the first draft was completed for some 30% of the topics (51 out of 161 topics) after orientation on writing (sharing of the writing guidelines) and three writing workshops. The progress of the work temporarily slowed down because several cases of copyright infringement were discovered during the reviewing process. In February, 2020, the EKI management, Project Team and directorates in charge discussed and analysed this problem and agreed that writing on teaching topics would continue under a new system (increased number of writers and placement of chapter editors from the EIEA). However, at the start of this new system, the spread of COVID-19 infection forced the suspension of this activity in Ethiopia in March, 2020. Because of the limitations of remote control of the assignment of writers, etc. under the current situation, it has been agreed that the EKI will independently continue this activity with the aim of completing and publishing a standard KAIZEN textbook by the end of 2020.

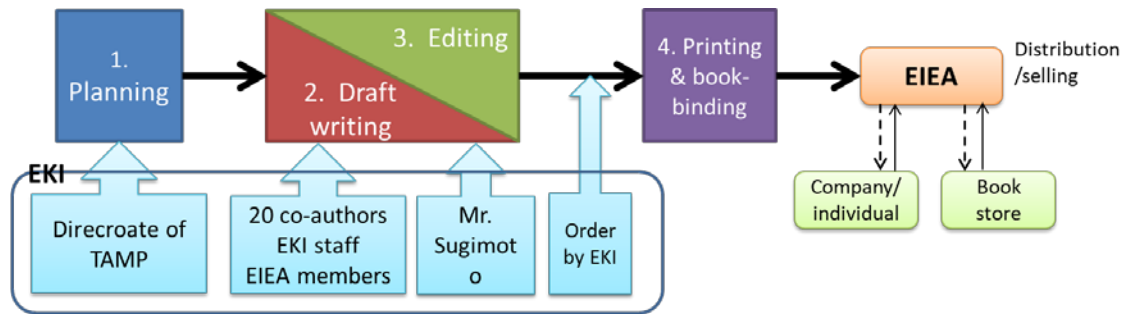


Fig.-8 Sequence of Writing and Publication of Standard KAIZEN Textbook Under the New System

(7) Publicity of the KAIZEN Effects and Impacts

1) Outline of Public Relations Activities of the EKI and Project Team

The Public Relations Office of the EKI is engaged in various activities, ranging from the gathering, provision and transmission of KAIZEN-related information to the publication and distribution of pamphlets, annual EKI magazine and KAIZEN-related materials (manuals and guidelines) and arrangements for media personnel to observe training and events. In this year (from August, 2019), this Office has facilitated the implementation of various events, including the KAIZEN Month Seminar and National and Nationality Day, in cooperation with the relevant sectors of the EKI, and has reported its activities using social media (Facebook). In March, 2019, it prepared publicity materials (six banners, 52 photographs, etc.) for the EKI and the Project with the budgetary assistance of the JICA Ethiopia Office and these are now displayed at the EKI building (see the photographs below).







## 2) Dissemination Activities Through Seminars and Workshops

### ① KAIZEN Month Seminar

The EKI holds KAIZEN dissemination seminars every year during the KAIZEN month (from September to October) and also the National KAIZEN Awards Ceremony every two years. During the KAIZEN month in 2019, these seminars were held for KAIZEN dissemination and sharing of best practices and survey/research results under the theme of “KAIZEN for excellent working culture and industrial competitiveness”. At the state level, the seminar was held in five cities. i.e. Bahir Dar (3rd October), Hawassa (11th October), Mekelle (15th October), Adama (19th October) and Assosa (24th October). For the federal-level seminar, Professor Emeritus Osada of Tokyo Institute of Technology was invited to participate in the three events described below.

#### Lecture for Members of the Standing Committee of the House of People’s Representatives

On the afternoon of 28<sup>th</sup> October, Professor Osada delivered a lecture on the theme of “Contribution of Kaizen to National Development” at the lecture hall of the House of People’s Representatives of Ethiopia. The lecture featured such topics as (i) contribution of KAIZEN to Japan’s economic growth, (ii) principles of KAIZEN, (iii) development of KAIZEN and (iv) keys to the success of Toyota Motor Corporation. The participants included parliamentary staff, etc. in addition to the originally planned some 30 members of the Standing Committee (Dr. Misrak Mekonnen (Head of the Secretariat), Mrs. Emeye Bitew (Chairperson of the Human Resources and Technology Standing Committee) and others), totalling some 100

people. At this lecture, Mr. Getahun Tadesse, Speaker of the House of People’s Representatives (former Minister of the MoPSHRD) gave an opening address and stayed for the lecture. Deputy Commissioner Birhanu and Director Tesfaye of the CSC also participated.

National KAIZEN Conference (Fifth KAIZEN Awards Ceremony)

This ceremony was held in the afternoon of 29th October at a hotel in Addis Ababa. The main guests were Mr. Tadesse, Speaker of the House of People’s Representatives, Deputy Commissioner Birhanu of the CSC, Mrs. Emeye, member of the House of People’s Representatives and representatives of various states on the Ethiopian side and Ambassador Matsunaga of the Embassy of Japan in Ethiopia, Professor Hiroshi Osada, Professor Kenichi Ohno of the GRIPS and Chief Representative Shinkawa of the JICA Ethiopia Office on the Japanese side. At the ceremony, the keynote address by Professor Ohno followed a silent prayer for late President Ogata of JICA and the opening address by Deputy Commissioner Birhanu. The number of participants was approximately 170, including those from the relevant Ethiopian ministries and other government organizations, educational institutions, private enterprises and state and private television stations in addition to Japanese stakeholders.

During the presentation session, a lecture by Professor Osada on “the Contribution of KAIZEN to National Development and Competitiveness of Global Enterprises” was followed by a presentation by Two Brothers Food Complex, one of the excellent enterprises awarded, and another presentation entitled “New Ethiopian KAIZEN philosophy” exploring the new KAIZEN philosophy and implementation strategy in Ethiopia was made by Project Team Leader Sugimoto.

At the end of the ceremony, the National KAIZEN Award was presented to 15 organizations, 12 KPTs and 13 individuals. The recipients of the Outstanding Award are listed in the table below.

Table-50 Enterprises Receiving the National Outstanding KAIZEN Award

	“Newly Introduced KAIZEN” Category	“Continued KAIZEN” Category
1.	Amhara Road Construction Organization	MAA Garment and Textile Factory
2.	Two Brothers Food Complex	Amhara Water Drilling Enterprise
3.	Lehagere Primary and Secondary School	Mesfin Industrial Engineering

Lecture for the CSC, Its Affiliated Organizations, etc.

In the afternoon of 30th October, a lecture entitled “KAIZEN to Develop the Quality and Efficiency of Service in Public Sector” took place at a lecture hall of the Civil Service University. The topics dealt with were (i) principles of KAIZEN, (ii) development of KAIZEN and (iii) promotion of KAIZEN in the service sector in response to a request made

by the EKI. A hospital in Zambia, a state financial bureau in Malaysia and a CSR activity in India were introduced as examples of (iii). A total of 129 people participated, representing the CSC, CSC-affiliated organizations (CSU, Ethiopian Management Institute, Meles Zenwi Leadership Institute, development institutes under the jurisdiction of the MoTI (MIDI, LIDI, etc.), Ethiopian parliaments and the EKI.

② Workshops Organized by the Research and Best Practice Directorate

The Research and Best Practice Directorate of the EKI organizes a workshop(s) every year to share and disseminate the practice of KAIZEN. Two workshops were organized in the last year which targeted local municipal and state governments and enterprises, organizations and associations implementing KAIZEN. The first workshop entitled “KAIZEN Management Philosophy for Overall National Growth” was held on 6th and 7th April, 2019 in Debra Zeit. Some 150 participated, including representatives of government organizations (Civil Service Commission, MoTI, various research institutes for industrial development, the EKI, etc.), higher education institutions (Mekelle University and Bahir Dar University) and enterprises, educational institutions and public service organizations implementing KAIZEN. Using a similar format, a second workshop entitled “Expanding KAIZEN Implementation Outcomes for Quality and Productivity Improvement” was held on 7th and 8th June, 2019 in Debra Zeit. This second workshop and interviews with some of the participants were broadcast on ETV (Ethiopian Television). The presentations were compiled in the EKI Proceedings and published at the end of June, 2019.

Table-51 EKI Proceedings

2009 EC Edition (2016-17)	2010 EC Edition (2017-18)	2011 EC Edition (2018-19)

3) Other Public Relations Activities

Following the expansion of the organization and roles of the EKI, the number of study visits to the EKI by government officials of other countries and those involved in other projects have increased along with the amount of coverage by the mass media, etc. (15 – 20 visits a year). The acceptance of these study visits as well as press coverage is essential for the EKI which is seeking to become

a centre of excellence. As such, both the EKI and the Project Team conducted wide-ranging public relations for a diverse range of organizations. The Project Team also arranged and/or accompanied visits by EKI officials to enterprises and taught know-how on public relations, ranging from the preparation of various reference materials to preparations for actual publicity activities, with a view to strengthening and establishing an internal system to effectively as well as efficiently conduct public relations.

## (8) Sharing of Knowledge with Other African Countries

### 1) Africa KAIZEN Annual Conference (KAIZEN Knowledge Sharing Seminar)

From 2016, the KAIZEN Knowledge Sharing Seminar has been held every year as a programme to share knowledge and experience relating to the dissemination and promotion of KAIZEN with other African countries where similar KAIZEN projects are being implemented. The first seminar in 2016 sponsored by the EKI which was aiming at becoming a centre of KAIZEN excellence in English-speaking Africa was held in Ethiopia. From the second Seminar, the participating countries have taken turn as hosts as the second (2017), third (2018) and fourth (2019) seminars were held in Kenya, South Africa and Tunisia respectively. While it started as a KAIZEN Knowledge Sharing Seminar, it became the Africa KAIZEN Annual Conference from the third seminar in 2018 under the Africa KAIZEN Initiative jointly launched by JICA and the NEPAD in April, 2017. This Annual Conference consists of a keynote address(es), panel discussions, study visits to enterprises and group work and aims at becoming a place for the sharing of the political significance of the implementation of KAIZEN as well as knowledge/lessons in each country and also for discussions on action plans for the coming years.

The Fourth Seminar (Annual Conference) in Tunisia was the first such seminar in French-speaking Africa and the Africa KAIZEN Awards were introduced for the first time. Two Ethiopian enterprises, i.e. MAA Garment and Textile Plc and Amhara Water Well Drilling Enterprise were nominated for an award. After the presentation session involving nominated enterprises as model cases in the participating countries, MAA Garment and Textile Plc<sup>8</sup> received the Outstanding Award. This enterprise was invited to the TICAD VII held in Yokohama in August, 2019 along with A to Z Textile Mills Ltd., a Tanzanian enterprise which also received the Outstanding Award, to make a presentation at a side event sponsored by JICA. The table below lists the Ethiopian participants of the KAIZEN Knowledge Sharing Seminars (Africa KAIZEN Annual Conferences).

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<sup>8</sup> Apart from the KAIZEN guidance by the EKI, this enterprise received Japanese experts on sawing and product inspection under a project sponsored by the METI and began to deliver T-shirts to Japan after the improvement of such technical problems as irregular colour, etc.

Table-52 Outline of KAIZEN Knowledge Sharing Seminars (AKAC)

No	Title	Period	Venue	No. of Part.	Participants from Ethiopia
1	KAIZEN Knowledge Sharing Seminar 2016	March 23-25, 2016	Addis Ababa, Ethiopia	93	EKI and the JICA Project team
2	KAIZEN Knowledge Sharing Seminar 2017	April 26-28, 2017	Nairobi, Kenya	127	(1) Mekonnen Yaie, GD, EKI (2) Seblewongel Haregawein, Deputy DG, EKI
3	Africa KAIZEN Annual Conference 2018	June 2-4, 2018	Durban, South Africa	150	(1) H.E. Mr. Tadesse Chaffo, Minister of Public Service and Human Resource Development (2) Mekonnen Yaie, GD, EKI (3) Dr. Kokeb Demeke, Deputy DG, EKI
4	Africa KAIZEN Annual Conference 2019	June 24-26, 2019	Tunis, Tunisia	215	(1) Mekonnen Yaie, GD, EKI (2) Gebremeskel Challa, Deputy GD, EKI (3) Tewodros Getachew, Lead Consultant, Research and Best Practice Directorate, Research and Certification Sector, EKI (4) Daniel Gezae, Kaizen Officer, MAA Garment and Textile (5) Tesfaye Tefera Mekuriaw, CEO, Amhara Water Well Drilling Enterprise

## 2) Assistance for the EKI to Perform Its Function as a Center of Excellence

In January, 2019, the JICA Ethiopia Office (Djibouti Office) requested the EKI to provide KAIZEN guidance for government organizations in Djibouti and a KAIZEN (5S) seminar was held at the JICA Ethiopia Office on 30th and 31st January, 2019. Nine people from five organizations (Road Authority, Waste Management, Coast Guard, National Civil Protection and Geothermal Energy Development Office) participated in the seminar from Djibouti.

After the seminar, a KAIZEN implementation master plan for Djibouti was formulated in response to a further request by the JICA Djibouti Office. Based on this plan, the first visit to Djibouti (fact-finding survey and finalization of the action plan) took place from 5th to 7th March, 2019. This was followed by a second visit (training on the 5S and elimination of Muda) from 7th to 11th April, 2019 and EKI consultants conducted management-level training and staff-level training for five managers and 15 staff members of five organizations. The third visit from 23rd to 25th April, 2019 aimed at confirming the progress of KAIZEN implementation at each organization, completing the series of KAIZEN guidance (Phase 1) for Djibouti.

Even though there have been many study visits to the EKI by government and other organizations from African countries, the provision of consulting services in another country was the first such attempt by the EKI. The fact that the EKI built its actual experience from the initial formulation of a plan to the implementation of various activities laid the foundations for the future dissemination of KAIZEN by the EKI in other countries. Meanwhile, it has been pointed out that the response of

the EKI to the preparations for the requested training was slow, making it highly desirable for the EKI to establish an in-house desk to act as a window to deal with training in other countries so that any preparations and the selection and dispatch of trainers can be smoothly conducted in the future.

#### 4. Results of Joint Review

##### (1) Results of Review Based on DAC Evaluation Criteria

Joint evaluation of the Project was conducted in May, 2020 in line with the five evaluation items set by the OECD-DAC. The results are described below.

##### 1) Relevance: **High** on the basis of the following reasons:

- Under the current five-year GTP 2 (2nd Growth and Transformation Plan, 2015/16-2019/20), the Government of Ethiopia (GoE) lists the improvement of product quality, productivity and competitiveness as the key to achieving the structural reform of the economy and clearly indicates Kaizen as a principal tool to achieve such objectives.
- EKI and the Project Team have been modifying and conducting the project activities by responding to the government's demand of Kaizen dissemination in different sectors as well as to changing the situation of manufacturing sector. The priority sector is manufacturing, but the Project introduced the intermediate-level Kaizen into the public enterprise (1), transportation service enterprises (2) and public health institution (1) by foreseeing the future demand of Kaizen in such sectors.
- In the intermediate-level training, the revision and modification of the CRT such as adding new case methods materials and including inherent technology session, etc. were done after every batch as mentioned above in [Indicator 2-3]. The project also facilitated the collaboration with industrial development institutes such as Metal Industrial Development Institute (MIDI) and Textile Industrial Development Institute (TIDI) in order to provide the necessary technologies to the client enterprises. In addition, the EKI started providing its own intermediate-level Kaizen consulting service from 2017.

##### 2) Effectiveness: **High** on the basis of the following reasons:

- As all the verifiable indicators associated with the Project Purpose except one (Indicator 1: "32 consultants are certified and registered as intermediate-level KAIZEN consultants") were achieved, it can be said that the Project Purpose was achieved from the quantitative point of view.
- Regarding Indicator 1, however, 20 non-EKI peoples were also qualified (9 from higher education, 7 from private consulting firms and 4 from private enterprises), totaling 47 consultants (EKI: 27, non-EKI: 20). Therefore, it can be said that the EKI and the Project contributed to the development of external resources, including the private consulting firms

- All the indicators of the Outputs were also achieved except one “3-1: A certification, accreditation and registration system for KAIZEN consultants is prepared, and 174 are certified and registered.” As mentioned above, 47 people were qualified for the Kaizen Consultant Certificate and 288 people were passed the 5S Leader and 5S Master verification examinations. The latter is broken down to TVET/college/university (25%), public enterprises (19%), government institutes (19%) and private enterprises (15%). This means that Kaizen consultants of two levels of basic and intermediate Kaizen have been fostered, while Kaizen practitioners have been steadily developed in both private and public sectors through the Kaizen dissemination system led by the EKI.
- Because the Kaizen dissemination plan was developed at an earlier stage of the project period with reference to cases in Argentina, Malaysia, Singapore and Japan, showing the way forward for the EKI, the EKI and the Project were able to achieve the intended results efficiently.
- During the project period, the visit of the Minister (MoPSHRD) and Commissioner (Civil Service Commission) to Japan was organized twice (2017 and 2019). These visits were very effective to disseminate the Kaizen philosophy and technology across Ethiopia. One of the major results is that the Kaizen lecture by Professor Hiroshi Osada was organized for the Standing Committee members of the Ethiopian Parliament (House of People’s Representatives) and its staff in Oct. 2019.

3) Impact: **High** on the basis of the following reasons:

(a) Prospects to achieve the Overall Goal

- Through the implementation of the Project, “Kaizen” becomes the common terminology for improvement of quality and productivity in not only the manufacturing sector but also other sectors.
- Among the 56 enterprises (Large and Medium Enterprises: LMEs) received intermediate-level Kaizen from the Project or EKI independently, 51 enterprises (91%) have continued the Kaizen activities.
- For Kaizen implementing enterprises, the value of Kaizen Indicators (KIs) can be expected to improve by 40-50% in the targeted production lines or sections. When it comes to company-wide figures, it can vary depending on the degree of horizontal development but may reach 10%.
- In collaboration with the industrial development institutes, the EKI and the Project Team were able to provide better quality of consulting services, which corresponds to the needs of client enterprises that require the inherent technologies of the specific industry.

- In the African Kaizen Conference of 2019, MAA Garment and Textiles PLC and Amhara Water Well Drilling Enterprise (AWWDE), which received the Kaizen consultancy service from the EKI, received the Outstanding award (1st place) and the Excellent Award (2nd place) respectively. The former was invited to attend TICAD 7 in Yokohama, Japan. In addition, this enterprise received the technical consultation under a project of Japan's METI (Ministry of Economy, Trade and Industry) in collaboration with EKI and TIDI to enhance the Ethiopian textile industry and won the sample order (80,000 pieces) from one leading Japanese SPA<sup>9</sup>. It is expected that this kind of enterprise would lead in the relevant industrial sector.
- Currently, local KAIZEN activity bases are three regional/municipal Kaizen institutes in Dire Dawa, Harari and Oromia and the Kaizen Directorates under Bureau of Public Service and Human Resources Development in Addis Ababa, Amhara, SNNPR and Benishangul-Gumuz. EKI provides capacity development programs to these local bodies which are responsible for the dissemination of basic-level Kaizen to micro and small enterprises (MSEs) as well as such sectors as education, health and other public services together with TVETs
- The Project provided inputs to the new 10-year EKI's strategic plan (2020-2030).

(b) Positive impact

- The management skill training mentioned earlier under Output 1 was well received by enterprises. Currently, this training features only one level. Once it is further developed and established as stratified training, it will enable the EKI to earn constant revenues and to serve for the other countries in Africa
- In correspondence to the EKI's current strategic framework and its human resources development plan, the Kaizen Ph.D. course was launched in October, 2018 in collaboration with Mekelle University after the preparation period of about two-years. Professor Osada was involved in the development of the curriculum and worked as the main course advisor of the two courses of the first year. Currently, four EKI members are doing their 2<sup>nd</sup> year research work. In addition to this, three Ethiopians (one from the EKI and 2 from Mekelle University) have successfully passed the interviews and are going to enroll in doctoral courses in Japan either as a research student or credited auditor student in October, 2020. After completing their respective courses, they are expected to become key professionals and to be engaged in the national Kaizen dissemination efforts.

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<sup>9</sup> SPA is the abbreviation of "Speciality Store Retailer of Private Label Apparel" and refers to an enterprise which consistently handles manufacturing planning, material procurement, outsourcing of production and retailing of clothing.



Table-53 PhD Candidate in Kaizen Ph.D. Course in Mekelle University

No.	Name	Position in EKI (as of Oct. 2018)
1	Mr. Haftu Hailu	Director, Chemical Industry Kaizen Directorate
2	Mr. Asnake Gudisa	Director, Agro, Food and Beverage Industry Kaizen Directorate
3	Mr. Tujuba Regasa	Director, University Kaizen Directorate
4	Mr. Biruk Wubishet	Director, Research and Best Practice Directorate

Table-54 Persons Selected for Ph.D. Study in Japan

No.	Name	Title
1	Mr. Yigedeb Abay	Acting DDG, Manufacturing Sector Director, Metal Industry Kaizen Directorate, EKI
2	Mr. Goytom Desta	Lecturer, Ethiopian Institute of Technology, Mekelle University
3	Mr. Getu Tadesse	Lecturer, Ethiopian Institute of Technology, Mekelle University

- EKI has been acquiring experience as a model institute of disseminating Kaizen in Africa. During the project period, EKI received visitors from Zambia, Ghana and Djibouti. EKI also sent two consultants to Djibouti to provide the basic-level Kaizen training for the five governmental organizations. It even attracts the interest of the United Nations agencies (e.g. UNDP) and NEPAD-AU.
- As revision of the proclamation of EKI establishment delayed (in order to establish the revenue base), the Project Team sought for the alternative body to run the CARS to run a revenue generating system. The EKI subsequently collaborated with the Ethiopian Industrial Engineers' Association (EIEA) and the EIEA handled the 2019 CARS examination consisting of the 3<sup>rd</sup> BC and IC and 1<sup>st</sup> 5S Leader and 5S Master examinations. This arrangement helped the revitalization of the EIEA.

(c) Negative impact

None

4) Efficiency: **Very High** on the basis of the following reasons:

- When the inputs planned at ex-ante evaluation are compared with the actual inputs, the project cost increased by 19% and the number (man-month) of dispatched experts increased by 25%. These increases of inputs made it possible to flexibly respond to the needs of EKI and the Ethiopian government. The dissemination of Kaizen philosophy and technologies became much wider, more reliable and more efficient along with the quantitative outputs stipulated by the indicators of the project. The followings are some of the direct outputs of the increased inputs.
- ✓ The planned number of trainees of the Intermediate-level Kaizen training was changed three times from the initial plan of 30 (6 × 5 batches) to 90 (18 × 5 batches). In the end,

a total of 83 intermediate-level Kaizen consultants were trained (81 are still with the EKI).

- ✓ Management skill training for EKI managers, which was not in the initial plan, was conducted three times, benefiting 48 EKI managers and consultants. This training was also provided to the ICT enterprises and other private and public enterprises upon request. In total, 45 enterprises (101 senior and middle managers) benefited from this training. The selected three EKI consultants were trained as trainers to provide the trainings for enterprises.
  - ✓ The doctoral Kaizen course was established at the Ethiopia Institute of Technology (EiT) of Mekele University in October 2017. Four EKI consultants have been taking the course and two private students have also been admitted to the course. In addition, one EKI consultant is qualified to join the doctoral course in Japan from October 2020. These five EKI consultants are expected to become core consultants who will lead the EKI and to accelerate the dissemination of Kaizen.
  - ✓ In 2017 and 2019, the Minister of the complement ministry and Commissioner of CSC were invited to Japan. Due to the restructuring of ministries and agencies of Ethiopian government, the supervising authority of the EKI changed three times in the project period. However, because those officials' timely visits to Japan, their understanding of Kaizen was deepened, and it became possible to promote the project activities and the dissemination of Kaizen across Ethiopia more efficiently.
- The details of the inputs were shown in the following two tables. Table-55 shows the comparison of inputs at initial plan, the project inception and the actual. Table-56 shows the transition of the increment of the input and its reasons.

Table-55 Comparison of Changing Planned Inputs and Actual Inputs

Item	Initial Plan (Ex-ante evaluation paper)	Plan (July 2015, the start of the PJ)	Actual (As of the end of June 2020)
Project cost (Japanese side)	670 million yen	723 million yen* (+8%)	780 million yen* (+19%)
Project Period	2015/6 – 2020/5 (60 months)	2015/7-2020/6 (60 months)	2015/7-2020/6 (60 months)
Total number of dispatched experts	-	92	89
Total MM	150.00 MM	168.70 MM (+12%)	187.97 MM (+25%)
Number of trainees of overseas trainings	-	Total 50 persons • Third countries: 30 • Japan: 20	Total 50 persons • Third countries: 42 • Japan: 8

(\*It doesn't include the cost of provision of the vehicles.)

Table-56 Increase of Inputs and Reasons

Date	Project cost (million yen)	Total MM	Factor
Initial Plan	670	150.00	• Ex-ante evaluation paper
Plan (2015/7)	723 (+53)	168.70 (+18.70)	• First contract signed. • Addition of management skill training for EKI management
2016/9/30	739 (+69)	173.24 (+23.24)	• Increment of the number of trainees of intermediate-level Kaizen training • Addition of Kaizen doctoral course establishment support
2017/2/20	747 (+77)	175.38 (+25.38)	• Introduction of task achievement approach of Kaizen upon the re-definition of Kaizen level • Addition of the minister invitation program to Japan
2017/8/22	771 (+101)	186.32 (+36.32)	• Second contract signed. • Changes in the number of trainees in each overseas training
2017/6/14	777 (+107)	187.97 (+37.97)	• Additional participants to Africa Kaizen Annual Conference • Addition of the commissioners' invitation program to Japan • Strengthening PR organization capacity

5) Sustainability: **Very High** on the basis of the following reasons:

(a) Organizational sustainability

- The attention of the Ethiopian Government paid to KAIZEN has been high, as the ministry supervising the EKI was upgraded to the Civil Service Commission, which is directly accountable to the Prime Minister's office, in October, 2018, when the government was restructured.
- The government recognizes KAIZEN as the philosophy and tool for transforming the country and human resource development instead of simply considering it as the system or technology for industrial sector. KAIZEN dissemination has been one of the priority agenda of the responsible ministry or commission. All the JCC meetings were chaired by the minister (or state minister) or the Commissioner of CSC.
- EKI has 155 staff in total, out of whom 111 are technical staff members. As mentioned earlier, 83 technical staff members (consultants and researchers) were trained in the intermediate-level training; and 81 are still in EKI and one transferred to Addis Ababa City's Kaizen Directorate under the Bureau of Public Service and Human Resource Development (the retention rate: 98%).
- The Project also proposed the new consultant evaluation system with three components: (a) Attitude, (b) Competency and (c) Performance. This proposal was made against the current situation that the evaluation of EKI consultants is conducted based on the same evaluation framework as ordinary civil servants. It is expected to raise the motivation of consultants and obtain the sense of satisfaction, which are the principal aims of evaluation.

(b) Financial sustainability

- The government provided the necessary budget and it increased by 59% in five years.
- While Ethiopian government committees are supporting the dissemination of KAIZEN across the country, it is recommended that The EKI becomes a special corporation to gain the revenue up to 20% of necessary cost. To this end, The EKI is preparing a proposal to revise the EKI's Establishment Proclamation and this proposal is expected to be submitted to the Parliament in due course.

(c) Technical sustainability

- The standardized Kaizen training materials for intermediate-level KAIZEN were finalized.
- As over 70% of EKI consultants completed 7- to 8-month intermediate-level Kaizen training and EKI has started the implementation of the consultin service of this level independently from 2017, it can be said that the EKI is able to maintain the status quo. In addition, each consultant holds one or two specialized fields in terms of quality, productivity, cost, delivery, etc. Therefore, when consultants with different specialities form a small team, they will be able to provide better consulting services to clients, while the capacity building program continues to strengthen their specialities.
- As mentioned in (3) Impact, there will be five EKI consultants, who will complete their respective Kaizen PhD courses either in Ethiopia or Japan. They are expected to serve as prominent professionals facilitating KAIZEN dissemination technically and academically in Ethiopia as well as Africa.

(2) Key Factors Affecting Implementation and Outcomes

There are three major factors that have affected the implementation and outcomes of the Project. First, it is the relationship of trust established between the EKI and the Project Team in the course of the project implementation. This relationship has been improving gradually from the inception of the Project, and communication has been effectively conducted with the common goal in mind. Secondly, the EKI's human resource has been developed not only through the project activities but also EKI's own activities of KAIZEN dissemination in the country, while the Project Team has been building the systems to be managed by the EKI independently. Thirdly, it is the prompt response and continuous support of the JICA headquarters and JICA Ethiopia Office. As the demand and expectation of the Ethiopian Government increased for KAIZEN dissemination, EKI's requests towards the Project Team also increased. JICA always provided the opportunities of consultation to the EKI and the Project Team to find the feasible ways to meet the demands, even it was initially not planned. In addition, JICA provided various exposure opportunities for the EKI, such as knowledge sharing seminars, the invitation programs for ministers and overseas trainings.

The EKI could access KAIZEN-related enterprises or organizations and established the network, which would not have been possible or not easy otherwise.

### (3) Evaluation on the results of the Project Risk Management

The risk management of the Project was evaluated “effectively done” throughout the project period. Some of the reasons are as follows. As mentioned above in 4.1, there were environmental and social instabilities intermittently in Ethiopia during several years of the project period, including ethnic and regional conflicts as well as the shortage of foreign currency and electricity. These influenced the manufacturing operation of client enterprises. In such cases, the EKI and the Project Team always communicated each other to share information and discuss viable countermeasures. For instance, when the project team members could not go to Oromia Region due to the travel restriction imposed by JICA/EoJ, the EKI asked its trainees to travel alone and continue the KAIZEN activities and/or other staff to travel with the trainees to give support to the trainees. In such occasions, the Project Team took necessary actions remotely. When the client enterprises faced the shortage of foreign currency, the Project Team discussed with the trainees to modify the ICT themes that can be implemented in such situation.

Regarding the Kaizen M.Sc. program, the EKI took a major coordination role to harmonize the schedules of M.Sc. program and the project training. As it requires 1.5 to 2 years to complete the entire course of M.Sc., there was an overlapping between the two from the third batch onwards and the Project might not have completed all five batches within the project period. In such situation, the EKI communicated the issue with Mekelle University and rearranged the schedule so that the Project could complete all the training courses in the project period.

Regarding the turnover of EKI staff members, it was relatively high at the beginning of the Project. However, the EKI was transferred to the Ministry of Public Service and Human Resources Development (MPSHRD) following the governmental reorganization in October 2015 and the EKI underwent its own reorganization with an increase of the number of management positions in March 2016. Recruitment of new consultants followed. At that time, the EKI staff salary system was also revised significantly. In addition, there were other schemes that EKI has been implementing: (1) Consultants Career Development Path, (2) Criteria-based and fair nomination of overseas training opportunities, (3) sustained human resource development (HRD) programs (launching of the M.Sc. & Ph.D. programs for further upgrading of academic credentials of its consultants as mentioned above). These were considered as important factors to increase the retention rate of the EKI staff.

## **5. Pending Issues, New Ideas and Lessons Learned Regarding Project Implementation (Work Execution Method and Operating Structure)**

### **(1) Response to Changing Needs for Assistance**

When a project period is as long as five years with swiftly changing circumstances of the recipient country and counterpart organization for a project, there may often be instances of the project contents becoming completely irrelevant to the needs of the recipient country. This can particularly happen in the later years of a project as discrepancies may occur between the demands of the counterpart organization and the project contents.

The EKI which was originally established under the jurisdiction of the MoI (presently the MoTI) later became part of the MoPSHRD and further moved under the jurisdiction of the CSC. All three of these major events occurred during the five year period of the Project and the transformation of the EKI in this period means that its KAIZEN dissemination activities now cover the service sector and state enterprises in addition to the manufacturing sector.

To efficiently proceed with the Project with such a fast-changing organization acting as the counterpart, it is necessary to have a permanent radar to understand what requests are made to the EKI by the government and what the EKI should do to maintain a smooth relationship with various government ministries. To be more precise, as the EKI like any other public organization only informs official decisions to the Project Team, there is a delay in the implementation of the necessary measures to make the Project more effective and efficient. What is required is to anticipate forthcoming information and associated vital decisions and there are three methods to achieve this as described below.

- The first method is to predict what the EKI is likely to do by linking pieces of the latest information, which are fragmented and not very reliable, and by removing any contradictions.
- The second method is to find a theme which may interest the EKI, to compile a report concerning such a theme (current situation, problems and countermeasures) and to propose the report to the EKI. Alternatively, a theme can be raised during a conversation to check how much the EKI is interested in such a theme.
- The third method is to raise an issue of which the EKI is unaware or plays down its importance but which is considered by the Project Team to be important and to propose the relevant KAIZEN measures.

To implement these methods, the Project Team increased the number of opportunities for discussions with the Research Directorate, etc. which had previously had hardly any contact with the Project Team to significantly improve the quality and quantity of information. Moreover, more opportunities for face to face discussions were arranged with senior officials of the EKI to make it easier to obtain the necessary information.

These moves led to the establishment of a relationship of trust between the Project Team and the EKI, enabling the smooth and efficient implementation of the project activities. Some examples of a good response to the changing circumstances are the introduction of the verification examination (5S Master and 5S Leader), implementation of organizational KAIZEN and preparation of the relevant guidelines, introduction of awards for EKI staff members and adjustment of KAIZEN indicators.

## (2) Responses to the Institutionalization of KAIZEN

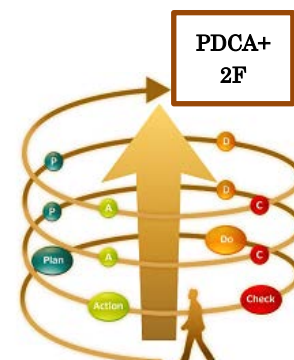
In general, institutionalization means the establishment of rules, manuals, customs, laws, etc. to smoothen and facilitate the working of the functions of a main system and also to make each function properly perform. One example is to review the evaluation system for the purpose of revising the salary system.

However, institutionalization is more than such a visible and simple mechanism. The PDCA (Plan, Do, Check, Act) Cycle is a typical example of the institutionalization of activities. In the case where institutionalization is attempted to continually improve KAIZEN activities at an enterprise, there are several methods considered to be effective and two examples are described below.

- To make PDCA truly effective rather than a token activity, stakeholders are gathered to confirm and analyse achievements and to discuss and decide future measures before moving to the next step. Many enterprises do not pay much attention to “Check” and “Act” even though they implement the presentation of “Plan” (using the occasion of a management policy announcement meeting, etc.). “Plan” and “Check” at least must be properly executed.
- Good practices and bad practices experienced throughout the year are compiled into a report while a meeting to present actual cases is held roughly twice a year to share experiences.

What is frequently observed with many projects is emphasis on “Plan” and “Do” while neglecting “Check” and “Act” in the latter part of the cycle. Positive achievement in a project often depends on “Check” and “Act” rather than “Plan” and “Do”. One concrete example in the case of the present Project is the improvement of training and CARS results by means of calculating the ratio of examinees answering correctly for each question of the CRT test in the intermediate-level KAIZEN training and CARS examination and devising a better teaching method for those topics with a low ratio of correct answers or changing the question itself. In this context, the PDCA cycle is one type of institutionalization which contributes to better training results.

The importance of invisible institutionalization can be demonstrated in the case of the strengthening of PDCA activities. To be more precise, this means the PCDA + 2F cycle where 2F stands for “Feedback” and “Fast”. As shown



in the figure on the right. “Feedback” is derived from the entire PDCA cycle, pushing up the level in each subsequent cycle. “Fast” means the acceleration of the PDCA cycle to respond to changes. In brief, the PDCA cycle is an activity which consists of one cycle. The addition of 2F enables the next PDCA cycle to become a more advanced and shorter cycle.

(3) Responses to the Capacity Building of Consultants

When the level of KAIZEN moves up from basic to intermediate, three viewpoints of KAIZEN become more important. These are “inherent technology”, “marketing” and “management”.

Inherent technology means a technology to manufacture a specified product which makes the best use of the characteristics of materials as well as processing while focusing on such visible processes as the working process and assembly. There are several ways to learn an inherent technology, including (i) reliance on the consultant’s major field of study at university, (ii) cooperation with an industry-specific research institute under the jurisdiction of the MoTI and (iii) independent learning of the knowledge and skills associated with an inherent technology by a consultant oneself.

In the case of the second viewpoint of “marketing”, the implementation of KAIZEN may end up as KAIZEN for partial optimization. For example, when a client does not praise the quality which has been improved by KAIZEN efforts, such qualitative KAIZEN falls into the trap of partial optimization. Such KAIZEN efforts fail to obtain client satisfaction and simply end up being an exercise in self-satisfaction. In short, KAIZEN which does not lead to client satisfaction is simply partial KAIZEN.

The third viewpoint is the management viewpoint. One example of improved productivity failing to achieve an increase of the profits of an enterprise is that the KAIZEN of one process without any KAIZEN efforts for both the previous and subsequent processes is simply an exercise of self-satisfaction and does not produced increased profits. Conversely, the horizontal expansion of KAIZEN to include other processes instead of confining KAIZEN to one process can boost positive KAIZEN effects, enabling the management to achieve better business results. KAIZEN means constant improvement and is the most important posture for business management. In other words, unless a better method of business operation is constantly sought, there is the possibility that an enterprise will lose the market competition, resulting in exit from the market.

There are several important points when implementing KAIZEN from these three viewpoints. They are (i) the more advanced KAIZEN is, the higher the necessity for an inherent technology is, (ii) it is necessary to look at products and the market from the perspective of the client and not the enterprise, (iii) it is necessary to widely apply





partial KAIZEN and (iv) the equivalence of the concept of KAIZEN and the concept of business management lies in the fact that both are endless exercises.

(4) Responses Concerning the Desirable Direction for the EKI and Coevolution of the Life Plans of the EKI's Staff Members

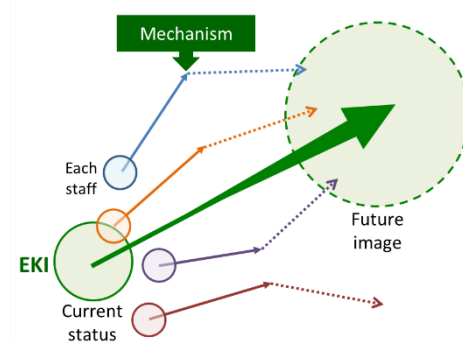
Coevolution is a term to express the Win-Win relationship whereby multiple individuals or organizations influence each other to achieve evolution and growth. In other words, when an organization and its employees move in the same direction together, they can progress at a faster speed, making it easier to enhance their strengths and to mutually complement their weaknesses.

The fact that the future direction of the EKI as an organization coincides with the direction of the life plans of the EKI's staff members practically means that these employees want to flourish within the EKI because of their agreement with the EKI's vision and policy for its business management. As both the intended direction of the EKI and career intentions of the staff members are on the same track, it is easier for the EKI as an organization and its staff members to move forward together.

Suppose that a staff member A of the EKI wants to become a successful and famous consultant. For this reason, A takes the initiative to deal with both those enterprises where KAIZEN appears difficult and those consultation challenges which are seemingly difficult to deal with. Such a performance increases not only the reputation of A but also the reputation of the EKI. There is a symbiotic relationship as serving the EKI means serving A and vice-versa. Their interests converge. Seven steps proposed below are necessary steps to create such a mechanism.

- ① Establishment of a common understanding concerning the present and future business environment of the EKI
- ② Prediction of fields in which the EKI is likely to develop its business activities
- ③ Prediction of an increase or decrease by type of work in line with changes of the business environment
- ④ Skills, abilities, technical knowledge, qualifications, knowledge and experience required for the types of work referred to in ③ above.
- ⑤ Adjustments to match the above predictions with the career paths hoped for by the EKI's staff members
- ⑥ Creation of opportunities to consolidate skills and professional knowledge of which a future shortage is expected
- ⑦ Interview between a staff member and superior on the former's career plan approximately once a year

It becomes possible for the EKI or each consultant to follow these steps by means of establishing a common understanding of the future direction to clarify the skills and knowledge likely to face a shortage. At present, the EKI is formulating a 10 year plan. Further elaboration and remodelling of this plan will make the practical implementation of each step possible.



## 6. Recommendations to Achieve the Overall Goal

### (1) Prospect of Achieving the Overall Goal

The overall goal to be achieved 3 – 5 years after the completion of the Project and the relevant indicators are described below.

Overall Goal: Quality and productivity in targeted industries are improved, leading to an enhancement of industrial competitiveness in Ethiopia.

[Indicator 1] 20% of LMEs have continued KAIZEN for more than two years.

[Indicator 2] 10% of SME have continued KAIZEN for more than two years.

[Indicator 3] The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the previous two years increased by 10% on average compared to before KAIZEN

As described so far, the EKI conducts follow-up activities for ICT enterprises and new consultations of its own. Once the EKI continues these activities, the number of enterprises which implement or continue KAIZEN is expected to increase. The KAIZEN activities under the Project for five years have already led to the emergence of model enterprises which have received the KAIZEN Award, even an Africa KAIZEN award. The prospect of achieving the Overall Goal is expected to increase as these enterprises play the role of a driving force as the EKI continues to promote the dissemination of KAIZEN. Meanwhile, KAIZEN consulting for MSEs is the responsibility of the TVET and R/CKI and the EKI conducts the work to develop human resources at these organizations through guidance on KAIZEN. It is hoped that activities to develop human resources will continue and expand to spread the efforts to disseminate KAIZEN nationwide.

### (2) Recommendations for the EKI and Government of Ethiopia

There are several issues as described below which the EKI should work on with its eyes firmly set on its own development in the next few years to successfully achieve the Overall Goal.

## 1) Development of the EKI to Become a Self-Funding Organization through Revision of Its Proclamation

This has been consistently proposed since 2015 when the KAIZEN Dissemination Plan was formulated. According to the EKI, a bill to revise its Proclamation has been presented to the Parliament several times but has always been pushed back behind other bills, failing to be properly deliberated.

Compared to five years ago when the issue was first proposed, there is a much stronger case today for the EKI's transformation into a self-funding organization. There are several reasons as described below to propose a change of the EKI to a self-funding organization.

- One of the most important ethical rules for a consultant is the possession of a sense of providing clients with a service. It is no exaggeration to say that the mission of a consultant is to satisfy clients. Accordingly, it is important for a consultant to display a posture and attitude of providing a service for a client during a consultation and then to receive a fair fee for such service.
- A questionnaire survey with a client after the completion of a consulting agreement lasting for a certain period tends to return favourable comments for an EKI consultant. To improve client satisfaction through KAIZEN consulting, a consulting fee should be charged so that the true opinion of the client of the consulting service received can be expressed.
- The introduction of a consulting fee gives the EKI a sense of business marketing. As mentioned earlier, it is essential for KAIZEN activities to be accompanied by a sense of marketing. It is necessary to proceed with the dissemination of KAIZEN with a posture of "we endeavour to improve client satisfaction through consulting".

## 2) Standardization of KAIZEN Consulting

The standardization of follow-up is important to improve the efficiency of consulting activities. The standardization of KAIZEN themes, client requests and number, level and duration of available consultants makes it easier to formulate a plan to visit enterprises. Such standardization also leads to the standardization of follow-up.

The analysis of consulting activities is essential to enable such standardization. The required frequency of visits (times/month) and required number of consultants ( $\Sigma$  level x number) should be analysed using past data to establish standard values. In addition, the number of feasible visits to an enterprise should be decided based on the number of feasible working days of each consultant. In this way, it is possible to efficiently utilize the limited resources and time for consulting activities.

As the use of IT is extremely useful for such analysis and routine management, it is desirable to proceed with the optimization as well as standardization of the work through the introduction of IT.

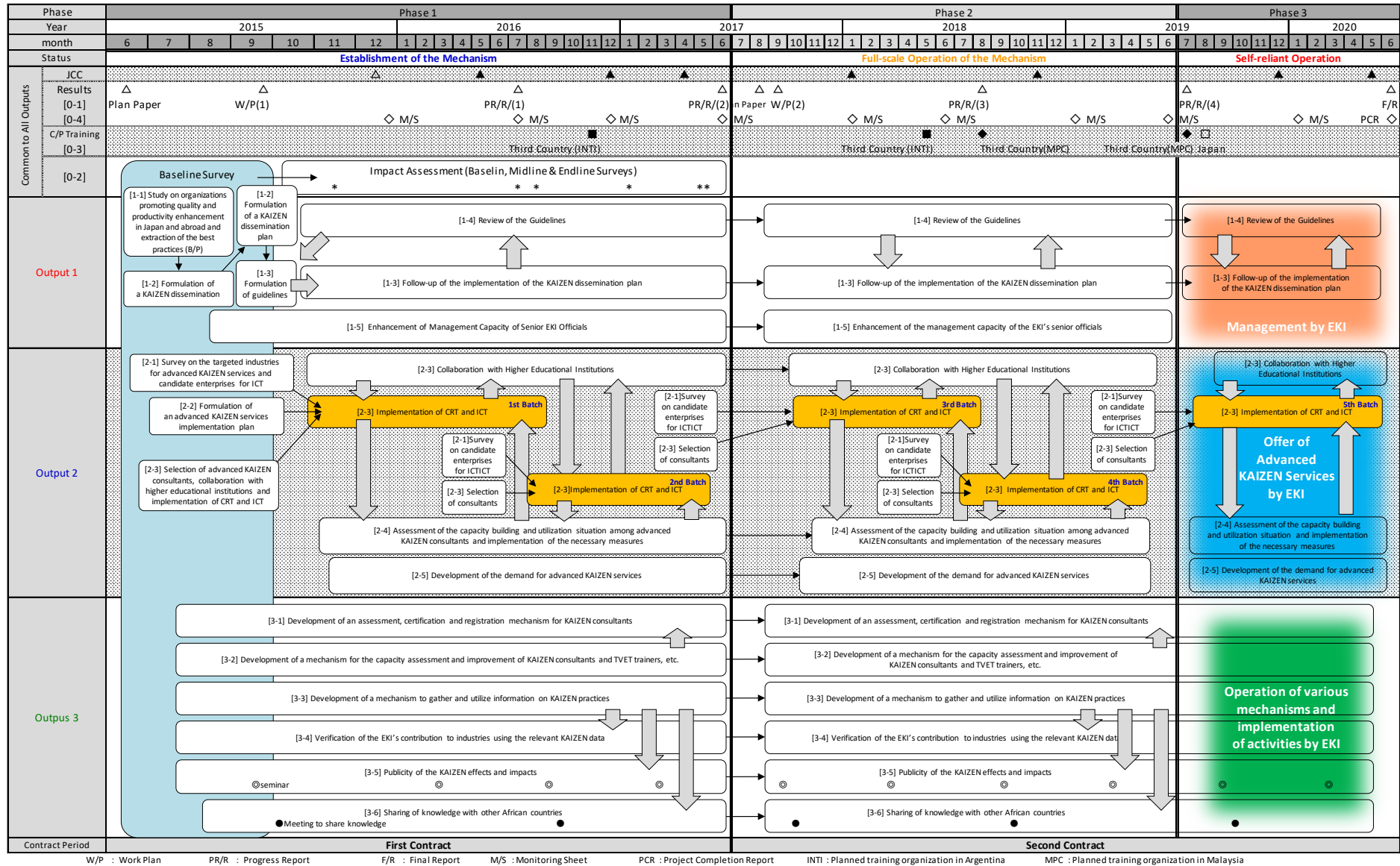
### 3) Capacity Building of the EKI Aiming at Becoming a Centre of Excellence

It is necessary for the EKI to become a model for neighbouring countries by means of demonstrating its notable capacity in specific industries and fields to enhance the industrial competitiveness of Ethiopia. Such development is linked to the EKI's pursuit of becoming a Centre of Excellence (CoE) in English-speaking Africa. Accordingly, continuation of the EKI's capacity building based on the following approaches is desirable.

- Fostering of a small number of consultant groups equipped with specialist knowledge and experience of management and marketing in specified industries with a view to offering a comprehensive marketing service to such specified industries.
- Fostering of small consultant groups to provide stratified management training for each of supervisor, junior manager and senior manager groups. Although the management training implemented under the Project is effective to a certain extent, it is only useful for one level of managers, failing to respond to the needs of multiple levels of managers. Accordingly, the development and continuation of different training schemes corresponding to different levels of managers can further strengthen the capacity of the EKI. The existing management training has widened its scope to include ICT enterprises and this training has been highly praised by the receiving enterprises. Therefore, the capacity building of the EKI to enable its external provision of management training means expansion of the EKI's services for client enterprises. Moreover, it is essential for the EKI to expand various functions linked to the provision of KAIZEN services as a CoE. The expansion of services for enterprises is essential from such a point of view.

## **APPENDIX**

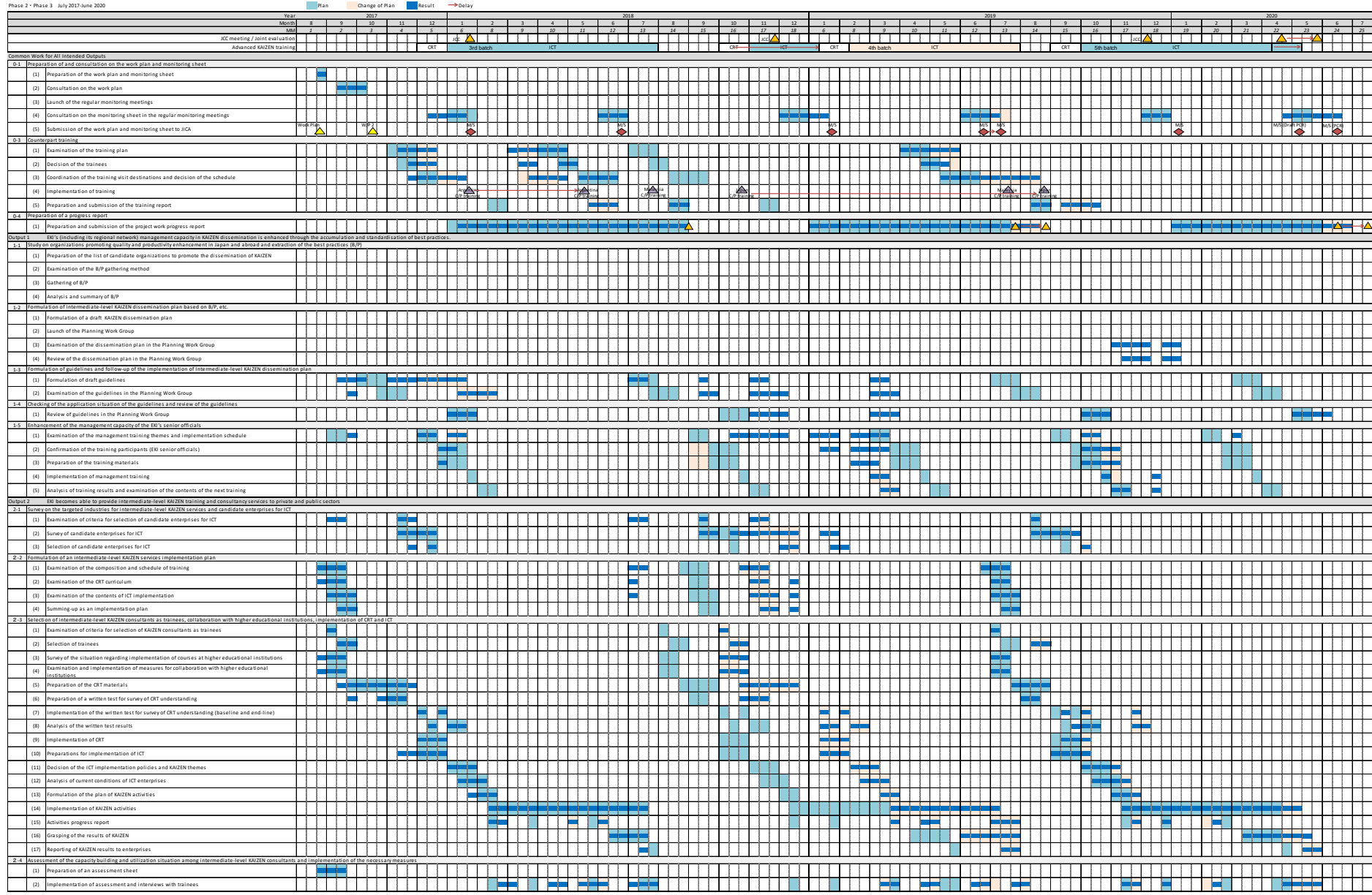
# Appendix 1: Work Flow



A-1

# Appendix 2: Work Breakdown Structure (WBS)

Phase 2 - Phase 3 July 2017-June 2020



A-2







## Appendix 4: Results of ICT Implementation for Intermediate-level Kaizen training (All 5 batches)

### (1) 1st batch

Name of Enterprise	Theme	Current Situation (Before Kaizen)	Target	Result (After Kaizen)	Kaizen Indicator	Target	Details of Activities
Metahara Sugar Factory	Reduction of sucrose loss	<b>8.70%</b>	5.50%	<b>5.80%</b>	<b>33.3%</b>	C	Mill repair, introduction of operator-based maintenance and review of the manufacturing conditions, etc.
	Reduction of fuel cost	<b>2.2 MB/ month</b>	1.4 MB/ month	<b>2.0 MB/month</b>	<b>9.1%</b>	C	Introduction of operator-based maintenance and change of the bagasse drying method, etc.
	Improvement of colour	<b>692 IU</b>	450 IU	<b>650IU</b>	<b>6.1%</b>	Q	Repair of broken equipment and review of the composition of additives, etc.
Wonji Sugar Factory	Cost reduction (spare parts and steam)	<b>52 B/Qt</b>	47 B/Qt	<b>.*</b>	<b>*</b>	C	Introduction of preventive maintenance and repair of the steam pipe, etc.
	Reduction of down time	<b>70 hrs/ month</b>	14 hrs/ month	<b>17 hrs/ month</b>	<b>75.7%</b>	M	Introduction of operator-based maintenance, improvement of equipment and prevention of stone incursion, etc.
	Reduction of sucrose loss	<b>40%</b>	37%	<b>38%</b>	<b>5.0%</b>	C	Optimization of the process and strengthening of the temperature control, etc.
Peacock Shoe Factory	Reduction of fraction defective	<b>2.47%</b>	2.00%	<b>2.00%</b>	<b>19.0%</b>	Q	Review of the acceptance inspection lines and separation of the work area from the parts storage area, etc.
	Increase of production capacity	<b>850 pairs/ month</b>	935 pairs/ month	<b>.*</b>	<b>*</b>		Improvement of the line balance and improvement/introduction of jigs and tools, etc.
	Reduction of frequency of system breakdowns	<b>26 times/ month</b>	12.5 times/ month	<b>12.5 times/ month</b>	<b>51.9%</b>	M	Introduction of TQM (daily checks, preventive maintenance and education, etc.
Kebir Enterprise PLC	Reduction of fabric loss	<b>12.30%</b>	5.80%	<b>8.70%</b>	<b>29.3%</b>	C	Improvement of cut-out patterns, improvement of the temporary storage method and education, etc.
	Reduction of defective fabric	<b>13.20%</b>	7%	<b>8%</b>	<b>39.4%</b>	Q	Improvement of the equipment adjustment method, improvement of the fabric transporting method and education, etc.
	Improvement of OEE	<b>64.10%</b>	76%	<b>54.70%</b>	<b>-45.0%</b>	M	Readjustment of equipment and addition of new jigs and tools, etc.
Sheba Leather Industry	Improvement of OEE	<b>25%</b>	63%	<b>65.90%</b>	<b>68.2%</b>	M	Introduction of operator-based maintenance, improvement of the line balance and education, etc.
	Reduction of volume of waste	<b>2.9Mf<sup>2</sup></b>	2.6Mf <sup>2</sup>	<b>2.7Mf<sup>2</sup></b>	<b>6.9%</b>	C	Review of the inspection specifications and utilization of remnants through the implementation of FIFO, etc.
	Shortening of the production lead time	<b>37.3M minutes</b>	18.6M minutes	<b>19.2M minutes</b>	<b>97.1%</b>	D	Change of the layout, introduction of SOP and implementation of training, etc.
Almeda Textile Factory	Reduction of rework rate	<b>5.60%</b>	2.00%	<b>3.00%</b>	<b>46.4%</b>	Q	Implementation of preventive maintenance and calibration, improvement of the SOP description method and education, etc.
	Reduction of fraction defective	<b>12.70%</b>	5.00%	4.80%	62.2%	Q	Regular replacement of the sinker, repair of oil leakage and improvement of the cleaning method, etc.

(\* Measure Incomplete.)

(Note: Q for Quality, P for Productivity, C for Cost, D for Delivery and M for Maintenance in productivity)

Note: The figure is reduction rate, not KI. So, it is not included in the average.

<b>Average of KIs</b>	<b>37.6%</b>
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(2) 2nd batch

A-6

Company	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target	Result (After Kaizen)	Kaizen Indicator	Target	Details of Activities
Kangaroo Shoe	Product based on market assessment	TA	<b>1<sup>st</sup> quality 54.6 point</b>	60	<b>105</b>	<b>n/a</b>	Q	Development of a new model based on market assessment; evaluation through repeated market assessment
	Finding the best practice in stitching process	TA	<b>Capacity 10 pairs/day</b>	12 pairs/day	<b>16 pairs/ shoe</b>	<b>75.0%</b>	P	Change from the cell method to the line method to reduce the waiting time
	Development of cost estimation model	TA	<b>Accuracy 42.2%</b>	32.2%	<b>28.30%</b>	<b>n/a</b>	C	Investigation of the cause of a large variation concerning the material cost; formulation as well as implementation of a countermeasure
	Productivity improvement	PS	<b>Line efficiency 44.1%</b>	50%	<b>53.00%</b>	<b>15.9%</b>	P	Application of IE to the bottleneck process to reduce the cycle time
Tikur Abay Shoe Factory	Machine capacity improvement	PS	<b>Capacity 260 pairs/day</b>	450 pairs/day	<b>286 pairs/day</b>	<b>20.0%</b>	P	Improvement of the operation rate of equipment which used to experience frequent breakdowns to improve the production capacity
	Increasing productivity	PS	<b>Capacity 345 pairs/day</b>	400 pairs/day	<b>423 pairs/day</b>	<b>45.2%</b>	P	Application of IE to the bottleneck process to reduce the cycle time
Mugar Cement	Improve productivity and quality	PS	<b>Capacity 53.2t/hr</b>	122.4t/hr	*	*	P	Improvement of the production capacity through an improved operating rate of the mill
	Enhance Machinery/ Equipment efficiency	PS	<b>OEE 47.1%</b>	75%	<b>55%</b>	<b>20.8%</b>	P	Investigation of the causes of breakdowns; formulation of countermeasures; introduction of TPM
	Improve productivity	PS	<b>Input 215 t/hr</b>	295 t/hr	<b>281t/hr</b>	<b>61.4%</b>	P	Measures to reduce the loss of raw materials; improvement of the productivity of old equipment
Kalitiy Metal	Reduce Machine Down Time	PS	<b>Stoppage 328 hrs/month</b>	216.4 hrs/month	<b>234.5 hrs/ month</b>	<b>28.5%</b>	P	Repair of bearings and gear; improvement of the lubrication method, etc.
	On time delivery	PS	<b>On time delivery 50%</b>	75%	<b>66.70%</b>	<b>33.4%</b>	D	Fundamental change of the production plan; establishment of manpower and equipment operating rates
	Defect Rate Reduction	PS	<b>Defect rate 1.87%</b>	0.75%	*	*	Q	Suspended due to forced long-term absence
Excel Plastic	Reduction of machine stoppage	PS	<b>Availability 64.5%</b>	74.50%	<b>74.20%</b>	<b>27.3%</b>	M	Prevention of the intrusion of foreign matters to the nozzle; reduction of frequent stoppages
	Identifying and optimizing cost	TA	<b>HDPE cost 42.9 birr/kg</b>	39.9 birr/kg	<b>39.3 birr/kg</b>	<b>8.4%</b>	C	Increase of the production capacity through improvement of the cooling system, etc.
	Reduction of waste and reworks	PS	<b>Defect rate 22.8%</b>	20%	<b>14.90%</b>	<b>34.6%</b>	Q	Clarification and visualisation of the set parameters for each product, etc.
Fafa Food Complex	Visualizing and Optimizing Cost of Quality	TA	<b>Cost of quality 23.4k birr/year</b>	15% reduction (19.9 K birr/yr)	<b>23.50%</b>	<b>23.5%</b>	Q	Reduction of the cost of defects, in turn caused by in-house or external reasons, by means of eliminating sources of inclusion of foreign matters
	Improving OEE	PS	<b>OEE 68%</b>	76.50%	<b>68%</b>	<b>0.0%</b>	M	Improvement of the maintenance method of the targeted equipment, introduction of self-maintenance (a production stoppage lasting for more than one month occurred)
	Improve Quality	PS	<b>Defect rate 48.9%</b>	10%	<b>12.50%</b>	<b>74.4%</b>	Q	Reduction of the fraction defective through prevention of the re-occurrence of defective products using the cause analysis method

(\* Measure Incomplete.)

(Note: Q for Quality, P for Productivity, C for Cost, D for Delivery and M for Maintenance in productivity)

Note: The figure is reduction rate, not KI. So, it is not included in the average.

<b>Average of KIs</b>	<b>35.4%</b>
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## (3) 3rd batch

Company	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target	Result (After Kaizen)	Kaizen Indicator	Target	Actions Taken
Cottex	Minimization of reworks in sewing section	PS	<b>Fraction defective 20%</b>	10%	<b>6%</b>	<b>70.0%</b>	Q	Lowering of the fraction defective through the strict implementation of worker education and quality control
	Inventory reduction by production planning improvement	TA	<b>Inventory value/year 6.1 Mbirr</b>	4.9Mbirr	<b>*1</b>	*	C	Reduction of the inventory level through the introduction and firm establishment of an adequate production planning system
G-7 Trading & Industry	Reduction of frequent yarn breakage in weaving machine	PS	<b>Operating ratio 63.5%</b>	82.00%	<b>79.00%</b>	<b>42.5%</b>	M	Efficient use of jute, the raw material, in addition to (i) improvement of the properties of jute through the maintenance of appropriate humidity and temperature and mixing of urea, etc. and (ii) improvement of the operating rate through better handling of the jute in the spinning process
			<b>Waste 13.4%</b>	6.70%	<b>6.60%</b>	<b>50.7%</b>	P	
	Down time reduction and capacity increasing of drawing machine	PS	<b>Non-operating hours 6.4 Hr/d</b>	3.2Hr/d	<b>3.3 hr/d</b>	<b>48.4%</b>	P	Shortening of the down time of the jute drawing machine using the TPM method
3F Furniture	Improving equipment OEE for enhancing machine productivity	PS	<b>OEE 52.1%</b>	65.60%	<b>66.50%</b>	<b>43.8%</b>	M	Improvement of the OEE (overall equipment efficiency) of the NC machine
	Improving product quality of high demand products	TA	<b>11.50%</b>	5.00%	<b>*2</b>	*	Q	Reduction of the fraction defective through the introduction of a quality process chart
Bekas	Defect Reduction on Plastic Bottles for Detergent	TA	<b>Material loss 28 g/piece</b>	10g/piece	<b>10 g/piece</b>	<b>64.3%</b>	P	Reduction of the material loss of the plastic bottles for detergent
	Enhancing Machine Productivity	PS	<b>Productivity 9,296 pieces/ shift</b>	14,332 pieces/ shift	<b>*3</b>	*	P	Enhancement of the productivity of the detergent filling process through adequate maintenance and mechanisation of the process
Mesfine Industrial Engineering (MIE), Gelan Site	Lead time reduction (Improving frame assembly lead time)	PS	<b>Assembling time 364 min/frame</b>	309 min/ frame	<b>309 min/frame</b>	<b>15.1%</b>	D	Reduction of the assembly time, including improvement of the preceding process, through analysis of the assembly process of the trailer frame
	Improvement of welding quality through TWI	TA	<b>Grade of welding quality 2</b>	4	<b>3</b>	-	Q	Strengthening of the competitiveness through improvement of the welding quality of trailers using TWI
Technostyles plc.	Lead time reduction in drawer assembling and cost reduction	TA	<b>39.3 min</b>	23.0 min.	<b>23.0 min</b>	<b>41.6%</b>	D	Shortening of the assembly time through modification of the furniture assembly process (drawers)
	Productivity Improvement of office furniture	TA	<b>26.39 min</b>	18.47 min	<b>*4</b>	*	D	Productivity improvement (shorter production time, etc.) through general improvement of the production process of office furniture (tables)

Company	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target	Result (After Kaizen)	Kaizen Indicator	Target	Actions Taken
Yekatit Paper Converting PLC	Reduction of downtime of glue folder machine (reduce belt cutting)	PS	<b>Ratio of stoppage hours 27.5%</b>	19.40%	<b>23.30%</b>	<b>15.3%</b>	P	Improvement of the belt connection method, etc. to reduce the down time of the glue folder machine caused by belt cutting
	Reducing machine down time and improving machine productivity	PS	<b>Ratio of stoppage hours 17.9%</b>	13.40%	<b>14.50%</b>	<b>19.0%</b>	P	Reduction of the down time of the printing machine through shortening of the set-up change time by means of introducing TPM and conducting multiple activity analysis
	Reduction of paper wastage (Make better use of paper)	TA	<b>62.70%</b>	85.00%	<b>87.70%</b>	<b>67.0%</b>	C	Reduction of printing paper wastage through an increase of the number of products printed on each paper and other means
Berhanena Selam Printing Company Bekas	Reduction of defect of print	PS	<b>14.70%</b>	10.20%	<b>*5</b>	*	Q	Reduction of defective printing through improvement of the printing conditions and other means
	Reduction of down time of printing machines	PS	<b>1.5 hr/shift</b>	0.8 hr/shift	<b>1 hr/shift</b>	<b>33.3%</b>	P	Shortening of the set-up change time through multiple activity analysis
National Cement Share Company	Rotary kiln availability enhancement for clinker production	PS	<b>283 days/year</b>	330 days	<b>309 days/year</b>	<b>31.7%</b>	M	Increase of the annual equipment operating days through the introduction of TPM and other means
	Reduction of spare parts consumption (Spare part planning and control)	TA	<b>712,515 birr/6 months</b>	605,640 birr/6months	<b>*6</b>	*	C	Reduction of the spare parts procurement cost through the repair and re-use of spare parts

(\* Measure Incomplete.)

(Note: Q for Quality, P for Productivity, C for Cost, D for Delivery and M for Maintenance in productivity)

Note: The figure is reduction rate, not KI. So, it is not included in the average.

<b>Average of KIs</b>	<b>44.2%</b>
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(4) 4th batch

Name of Enterprise	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target(s)	Result (After Kaizen)	Kaizen Indicator	Target	Contents of the Countermeasure
B & C Aluminum	Extrusion machine cycle time reduction by applying homogenization process	PS	<b>Cycle time 4.2min. RAM speed 3.5mm/sec</b>	3.5 min (16% reduction) RAM speed 4.2mm/sec	<b>3 min.</b>	<b>28.6%</b>	P	To improve the productivity by means of increasing the extrusion speed through the homogenization treatment of the aluminium billet
	Extrusion scrap reduction through material quality improvement	PS	<b>5.00%</b>	4.00%	<b>4.20%</b>	<b>16.6%</b>	Q	To reduce the defect rate of the aluminium moulding process through shedding, improvement of the oxide removal method and improvement of the die nitriding treatment
Anbessa Shoe Factory	Lasting line rework reduction by applying QC approach	PS	<b>16.70%</b>	8.00%	<b>8.00%</b>	<b>52.1%</b>	Q	To rework the lasting line which is the principal process in the manufacture of leather shoes and to reduce the failure rate through training
	Stitching line defect reduction by applying QC approach and productivity improvement through bottle neck cycle time reduction with ECRS	PS	<b>9.10%</b>	5.00%	<b>5.30%</b>	<b>41.8%</b>	Q	To rework the principal processes in the stitching of leather shoes and to reduce the fraction defective through training
			<b>318 pairs/day</b>	67.90%	<b>454 pairs/day</b>	<b>30.4%</b>	P	
Home Base House & Office Furniture PLC	On time delivery by schedule management (keep customer promised delivery)	PS	<b>10%</b>	50%	<b>50.00%</b>	<b>44.4%</b>	D	To establish a system where a common form is used to manage all processes from sales marketing to product shipment, followed by checking of the form at the weekly meeting on production processes for the purpose of preventing the late delivery of furniture
	Cost reduction of Kitchin board by reducing the returned product	PS	<b>26 pcs</b>	13 Pr.	<b>18 pcs</b>	<b>30.8%</b>	Q	To review the entire processes from design to shipment, to standardize the design work and to establish a quality control system between processes in order to reduce the number of returned furniture after delivery to customers
Adiss Ababa Bottle & Glass Company	Reduction of Defects	PS	<b>1.79%</b>	0.87%	<b>0.92%</b>	<b>48.6%</b>	Q	To analyse the causal factors of such defects emerging in the glass bottle moulding process as cracks, etc. and to implement countermeasures
	Reduction of Down Time	PS	<b>41.90%</b>	16.50%	<b>21%</b>	<b>49.9%</b>	M	To implement operator maintenance as well as shortening of the set-up changing time to reduce the down time in the glass bottle moulding process
Roha Pack	OEE improvement of Blow & Mold machine	PS	<b>32.10%</b>	56.80%	<b>61.70%</b>	<b>54.6%</b>	M	To improve OEE through the maintenance and repair of the PET bottle blow machine and improvement of the machine operating method
East Africa Tiger Brands	Cost reduction by improving boiler efficiency and minimizing steam waste	TA	<b>39%</b>	50%	<b>55%</b>	<b>76.2%</b>	C	To improve the boiler combustion efficiency and to minimize steam loss through the pipes in order to reduce the energy cost per unit product in the manufacture of detergents
			<b>65lt/ton</b>	30lt/ton	<b>41lt/ton</b>	<b>36.9%</b>	C	
	"Reducing waste and scrap rate of Vitex line (By monitoring and maintenance of the machine)"	PS	<b>12%</b>	6%	*	*	M	To reduce the scrap rate as well as defect rate by means of preparing a machine operation manual, strictly enforcing operator maintenance and the installation of sensors to detect abnormalities
<b>6%</b>			3%	*	*	M		

Name of Enterprise	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target(s)	Result (After Kaizen)	Kaizen Indicator	Target	Contents of the Countermeasure
Ethiopian Shipping and Logistics (ESL) Services Enterprise, Kality Branch	Fuel, spare parts and tire costs reduction by applying Operations Research	TA	<b>264,328 birr</b>	315,740	*	*	C	To reduce the truck fuel cost by means of planning the best truck allocation based on the operation research results
			<b>3,224,625 birr</b>	4,836,937	<b>1,641,258 birr</b>	<b>49.1%</b>		To reduce the maintenance cost through the in-house production of spare parts and tyre rotation
	Truck down time reduction by QC approach	PS	<b>60 Truck</b>	30	<b>40</b>	<b>33.3%</b>	M	To reduce the down time through guidance for drivers regarding safety and economic driving, improved efficiency of the repair shop and enhanced collaboration between the operation department and dry port department
			<b>16 Hr.</b>	8	*	*		
Dess General Trading PLC	Enhancement of Production Performance by PAC Application	TA	<b>27.80%</b>	37.80%	<b>75.40%</b>	<b>65.9%</b>	P	To enhance the production performance by means of using the PAC (Performance Analysis and Control) method to clarify problems of the current process and to improve the production efficiency through a change of the plant layout
	Smooth Flow by Heijunka Production System		<b>6,720 pieces</b>	0	*	*	P	To reduce the pre-delivery work in progress through the introduction of smoothed (Heijunka) production
Yirgalem Addis Garment Factory	Stitching line defect reduction by applying QC approach	PS	<b>30%</b>	15%	<b>13%</b>	<b>56.7%</b>	Q	To reduce the fraction defective through (i) review of the work standards for important processes of sewing and (ii) training
	Stitching line productivity improvement through bottle neck cycle time reduction with ECRS	PS	<b>450 pcs/day</b>	85%	<b>588 pcs/day</b>	<b>55.2%</b>	P	To reduce the cycle time by means of improving the bottleneck process of stitching using the ECRS method
Adama Garment Industry	Productivity improvement at sewing section by operator's skill up through TWI	TA	<b>60%</b>	65%	<b>62%</b>	<b>5.0%</b>	P	To improve the overall productivity by means of reducing the duration of the bottleneck process using the TWI method
	Productivity improvement by line balancing		<b>54%</b>	68%	<b>75%</b>	<b>45.7%</b>	P	To improve the productivity by means of shortening the bottleneck process through changes of the line balance and layout

(\* Measure Incomplete.)

(Note: Q for Quality, P for Productivity, C for Cost, D for Delivery and M for Maintenance in productivity)

Note: The figure is reduction rate, not KI. So, it is not included in the average.

<b>Average of KIs</b>	<b>44.2%</b>
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(5) 5th batch

A-11

Name of Enterprise	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target(s)	Result (After Kaizen)	Kaizen Indicator	Target	Contents of the Countermeasure
Horizon Tyre	Improving bladder life cycle	PS	<b>193 cycles</b>	350 cycles	<b>234 cycles</b>	<b>26.1%</b>	C	<ul style="list-style-type: none"> <li>Optimize the bladder preparation process by Taguchi Method, DOE to solve crack failure.</li> <li>Improve curing press maintenance, e.g. frequent repacking teflon sealing, etc to eliminate oxygen attack.</li> </ul>
	Reduction of fuel consumption	TA	<b>0.57 kl/ton</b>	0.45 kl/t	<b>0.45 kl/ton</b>	<b>100.0%</b>	C	<ul style="list-style-type: none"> <li>Improve maintenance to eliminate steam leakage, e.g. gasket, flange, or steam trap inspection.</li> <li>More insulation on pipes and valves to eliminate heat loss.</li> </ul>
Sino Ethiopia	Achieving high quality rate by defect reduction (machine 1)	PS	<b>4.30%</b>	2%	<b>3.60%</b>	<b>16.3%</b>	Q	To reduce the defects of gelatin-capsules by improving the level of operators skill for maintenance & the operation procedure of the automatic production machine No.1
	Enhancing machine OEE performance	PS	<b>76.1%</b>	89.7%	<b>83.5%</b>	<b>31.0%</b>	M	Increased OEE by increasing production speed to the standard production capacity level of the automatic production machine No.2 & reducing the jigs changing time.
Belayab Cables	Optimize PVC Consumption Over Unit Length on Bedding Process	PS	<b>172,786 birr/km</b>	57,179 birr/km	<b>48,602 birr/km</b>	<b>71.9%</b>	C	Optimize the PVC consumption in bedding process by adjusting the brakes and using the right die.
	Scrap Reduction of PVC and XLEP	PS	<b>6%</b>	3%	<b>3%</b>	<b>50.0%</b>	Q	Reducing scrap of PVC by preventing leakage, improving mixing ratio and minimizing the set up time.
			<b>11.20%</b>	6%	<b>2.30%</b>	<b>79.5%</b>		Reducing scrap of XLPE by preventing leakage, improving mixing ratio and minimizing the set up time.
Memenon Printing	Set up time and rework rate reduction (Printing Machine)	TA	<b>80 min</b>	62 min	<b>51 min</b>	<b>36.3%</b>	P	Reducing set up time by remodeling the printig machine.
			<b>7%</b>	3%	<b>2%</b>	<b>71.4%</b>	Q	Reducing rework by remodeling the printig machine.
	Increase A-grade by providing visual SOP	TA	<b>60%</b>	72%	*	*	Q	Providing training by visual SOP which focus on poor quality parts in sewing process
Tikur Abay Transport plc.	Vehicle Downtime reduction	PS	<b>63% of plan</b>	76% of plan	*	*	P [Preventive maintenance frequency]	Application of a GPS and scheduling software
			<b>201 % of plan</b>	160% of plan	*	*	P [Breakdown, hour]	<ul style="list-style-type: none"> <li>Work place layout change</li> <li>Maintenance paperwork improvement</li> <li>In-house car wash</li> </ul>
			<b>17.5 hr/time</b>	14 hr/time	*	*	P [Unloading&l oading time]	<ul style="list-style-type: none"> <li>Cargo type selection standard</li> <li>Loading and unloading preparation standard</li> </ul>
	Cost Reduction	TA	<b>40,194 birr</b>	16,077 birr	*	*	C [Fuel]	<ul style="list-style-type: none"> <li>Fuel consumption standard</li> <li>Tire pressure check</li> </ul>
			<b>1,124,172 birr</b>	899,388birr	*	*	C [Spare part]	<ul style="list-style-type: none"> <li>Distilling water for battery liquid in-house</li> <li>Reuse old batteries</li> </ul>
			<b>75,000 km/tire</b>	85,000km/tire	*	*	C [Tire]	<ul style="list-style-type: none"> <li>Tire rotation</li> <li>Tire tread specification</li> </ul>



Name of Enterprise	Theme	Approach (PS or TA)	Current Situation (Before Kaizen)	Target(s)	Result (After Kaizen)	Kaizen Indicator	Target	Contents of the Countermeasure
Ethiopian Construction Works Corporation	Defect Reduction in Bricks Department (Introduction of QC system)	TA	<b>0</b>	60%	<b>50%</b>	<b>50.0%</b>	I	Introduced QC system in the production line by explaining the QC system to the director and all staffs, establishing QC organization, defining the roles of each QC staffs & preparing QC documents about the raw materials, the manufacturing processes and the final products.
	Enhancing OEE of PVA Sash Machine	PS	<b>59.80%</b>	66.60%	<b>73.60%</b>	<b>54.8%</b>	M	Enhanced OEE by supplying enough pressed air through changing the starting time of air compressors and by reducing the welding defects of the sashes by stabilizing the air pressure from the air compressors.
Ethiopian Institute of Public Health	Increasing productivity in Permi vaccine by reduction of sheep death	PS	<b>60%</b>	72%	*	*	P	Reducing sheep death by better guarantee, environment and improving innaculation method.
	Improve the quality of plants processing	TA	<b>36%</b>	20%	*	*	Q	Improving quality of medical plant processing by providing standard procedure.

(\* Measure Incomplete.)

(Note: Q for Quality, P for Productivity, C for Cost, D for Delivery and M for Maintenance in productivity, I for Institution building)

Note: The figure is reduction rate, not KI. So, it is not included in the average.

<b>Average of KIs</b>	<b>53.2%</b>
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## Appendix 5: Results for Provided Equipment (Certificate of Handover)

### CERTIFICATE OF HANDOVER

To: JICA Ethiopia office

Re: The Project on Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement in the Federal Democratic Republic of Ethiopia

This certificate of handover is to certify that the equipment in the attached list, which had been utilized for the Project on Capacity Development for KAIZEN Implementation for Quality and Productivity Improvement and Competitiveness Enhancement, have been handed over properly to Ethiopian KAIZEN Institute, as of June 29, 2020.

Attached: List of Equipment

June 29, 2020



Mr. Mekonnen Yaie  
Project Manager  
General Director  
Ethiopian KAIZEN Institute (EKI)

(Attachment)

List of Equipment

No.	Equipment	Model	Qty.	Place of Delivery	Date of Handover
1	Copy Machine	Canon IR2545 Digital Photo Copier	1 set	EK1	June 29, 2020



**MINUTES OF THE MEETING  
FOR  
THE SEVENTH JOINT COORDINATING COMMITTEE (JCC)  
FOR  
THE PROJECT ON CAPACITY DEVELOPMENT FOR  
KAIZEN IMPLEMENTATION FOR QUALITY AND PRODUCTIVITY  
IMPROVEMENT AND COMPETITIVENESS ENHANCEMENT  
IN  
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**

Ethiopia and Japan via Zoom Meeting System

9:00 – 13:00 Ethiopia time / 15:00 – 19:00 Japan time

29<sup>th</sup> May 2020

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H.E. Mr. Bezabih Gebreyes  
Commissioner  
Civil Service Commission

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Mr. Mekonnen Yaie  
Project Manager  
General Director  
Ethiopian KAIZEN Institute (EKI)

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Mr. Makoto Shinkawa  
Chief Representative  
JICA Ethiopia Office

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Mr. Seiji Sugimoto  
Chief Advisor  
JICA Expert Team

## **1. Agenda of the meeting**

Main presentation of the project

- ✓ Outline of the 3<sup>rd</sup> phase Kaizen project
- ✓ Summary of the overall achievements (Jul. 2015 – May 2020)
- ✓ Result of joint review
- ✓ Lessons learnt and recommendations

Presented by:

Mr. Mekonnen Yaie, General Director (GD), EKI

Mr. Yigedeb Abay, Acting Deputy Director General (DDG), Manufacturing Sector, EKI

Mr. Seiji Sugimoto, Chief Advisor, JICA Expert Team

The way forward

- The way forward, by Mr. Keiji Katai, Director, Private Sector Development Group, JICA
- Kaizen in the time of COVID-19, by Mr. Alowye Yigrem, Acting DDG, Service Sector, EKI

## **2. Proceedings**

The meeting was called to order at 9:00 by H.E. Mr. Bezabih Gebreyes, Commissioner, Civil Service Commission (CSC) via zoom meeting system. It was chaired by Mr. Mekonnen Yaie, GD of EKI, delegated by the commissioner.

First, the Commissioner welcomed everyone for the 7<sup>th</sup> Joint Coordinating Committee (JCC) meeting of the JICA Kaizen project, stating that all of the participants will review the project performances after the 6<sup>th</sup> JCC and all the achievements of 5-year project, and discuss the way forward. Then, he introduced new important aspect of the meeting, Covid-19 and the business continuity plan (BCP) with the Kaizen perspective, how to work with Covid-19 situation. He added that many initiatives are expected to be done to control and prevent Covid-19. Thus, he would like to hear about the Covid-19 response from the Japanese,

especially the JICA.

Mr. Mekonnen invited Japan's Ambassador, H.E. Mr. Daisuke Matsunaga to make opening remarks.

## **OPENING REMARKS**

First, the Ambassador sent his acknowledgement to the Ethiopian Government for the strong commitment towards the project. He said that the 3<sup>rd</sup> phase Kaizen project has been implemented since 2015 and will be finished in June 2020. There are three main targets of the project: (i) to strengthen the management capacity of EKI, (ii) to build the capacity of consultants who provide intermediate level Kaizen support, and (iii) to introduce consultant qualification system in Ethiopia. He said that these targets were very challenging but achieved, as he already has seen the results that were yield by the joint efforts of EKI consultants and Japanese experts. It is very important to recall long support from Ethiopian government, which was crucial for the success of this project. He extended his sincere appreciation to CSC and EKI for the commitments.

Next, he requested all participants of the project and in this meeting to present their comments on any problems regarding the implementation of Kaizen. He said that recognizing such issues is important for the continuous improvement for the effective implementation of Kaizen.

Then, he said that the world is facing unpleasant economy crises due to Covid-19 pandemic. Improving competitiveness and productivities is essential for business to recover as quickly as possible. This means Kaizen should play an important role in the Ethiopian economy on the pandemic. He also thanked EKI for their understanding in terms of unavoidable and regrettable suspension of the construction of the TICAD Human Resource Development (HRD) Center. He said that he fully understands the value of the center for the implementation of the Kaizen project in Ethiopia, hoping that the construction will resume soon after we successfully contain this regrettable disease.

At the end, he forwarded his expectation to have very successful and satisfactory result from the meeting. Then the floor opened for the presenters.

## **MAIN PRESENTATION**

As attached in Annex II.

## **DISSCUSSION**

< Questions and Comments >

H.E. Mr. Bezabih Gebreyes, Commissioner, Civil Service Commission, FDRE

1: Many capacity building trainings were done for the EKI consultants, and some of them were certified. What would be the next?

2: Regarding the suspension of the TICAD HRD building construction, how can we follow up to facilitate the resumption of the construction? On Ethiopian side, the ministry responsible for such projects has already amended the related regulation and the law. Thus, locally, the construction can be continued. So, how can the Japanese side follow up the case?

Mr. Keiji Katai, JICA Headquarter

3: As Mr. Sugimoto mentioned that it is important to bring about the overall optimization for the companies, not partial optimization, through the Kaizen practices. In this sense, I am very pleased to see the result of productivity indicator study, and it is important to continue the study on productivity indicators. If continuing such analytical work, what would be a challenge?

Mr. Toru Homma, JICA Headquarter

4: I have been involved in the Kaizen project in Ethiopia, and am very pleased to see how the project has grown. As presented, the relevance of the project was very high as the Kaizen

was recognized as a key tool in GTP 2. What about the new 10-year plan? Is the relevance kept high?

5: There are now numbers of “graduated” companies that went through the intermediate-level Kaizen implementation. How do you follow up these companies?

< Responses to the questions >

Related to Q2:

- Due to the Covid-19, the high authorities of Japan instructed JICA related people to go back to Japan as emergency measure. At the moment, we are not sure when the evacuation order is to be retracted. No one wants this situation to continue, and hopefully we will return to normal work as soon as possible. (Japanese Ambassador)
- We have communicated and agreed with the Japanese contractor (Fujita Corp.) and the consultant (Nippon Koei Co. Ltd.), so that they will resume the construction work remotely using internet technology. (Mr. Mekonnen, EKI)
- Regarding the TICAD HRD center, we would like EKI to clearly understand the difference between the Technical Cooperation and the Grant-Aid Project. For the technical cooperation, JICA signed the contract directly with the contractors, but for the Grant-Aid, it is different. EKI is the one who signed the contract with the contractors. Thus, EKI should be in the position to discuss and clarify the issues with the contractors directly. (Mr. Shinkawa, Chief Representative of JICA Ethiopia Office)

Related to Q3:

- The main issue is the hesitation of top executives to provide financial data. In addition, one of the other challenges is the readiness of companies. Some companies are not ready to provide the financial data, since they don't arrange it properly. Besides, when calculating the labor productivity, labor input data is necessary. But some companies are not ready to provide the data. (Mr. Fujita, Kaizen Project)
- To overcome such challenges, it was very useful to make sensitization of the company top executives. In case of Amhara public enterprises, we made the sensitization of the top



executives of the enterprises in cooperation with Mr. Magabiew, the Director General, Amhara Public Enterprises Supervising Authority. Similarly, the sensitization was made for the companies under EFFORT (The Endowment Fund for the Rehabilitation of Tigray, a conglomerate of businesses factories mainly based in Tigray Region). Then, the companies were very cooperative and we would conduct the study smoothly. So, it is very important for EKI to continue to brief importance of the study and follow the study. (Idem)

Related to Q1, Q4 & Q5:

- In EKI's new strategic plan, the future of EKI and Kaizen for the development of the country is already elaborated. (Mr. Mekonnen, EKI)
- The 3<sup>rd</sup> phase Kaizen project has brought a lot of knowledge and capacity development to EKI. It is a big move to our country to establish such a good institute. We are now able to respond to the challenges and difficulties of our manufacturing industries encountering currently. (Idem)
- The internal capacity through regular education and training program has been done through the intermediate Kaizen. We could also be able to established the system of certification and registration of Kaizen Consultants. All those capacity development inputs are done for providing quality Kaizen consultation services. (Idem)

< Remarks >

H.E. Mr. Bezabih Gebreyes, Commissioner, Civil Service Commission

- One of the most important things I have seen from the Kaizen initiatives so far is that we have access to all the regional offices. In addition, we discussed how to evaluate the Kaizen initiatives in private and public factories, especially the two regions, Amhara and Oromia, followed by Tigray. Some of them also won the international prizes, which was organized by JICA and AU-NEPAD. All these are our achievements.
- My concern is after graduating the training, all consultants have to work hard to make improvement on productivity, efficiency and effectiveness. Everyone should bring an

impact to factories in any sectors, as they get graduated in a Kaizen way.

## **THE WAY FORWARDS**

The two presentations were made by JICA and EKI as ANNEX III.

## **DISSCUSSION**

The commissioner opened the discussion to encourage the regional offices and others to give any questions and comments.

Ms. Sachiko Hara, JICA Headquarter

6: Regarding the EKI's response to Covid-19, have you already started the on-line consulting? Can you tell us the specific idea or method of providing training and consultation service?

7: Can you tell us what kind of demand does EKI receive from the company after Covid-19?

Mr. Awoke Legesse, Head, Dire Dawa Management and Kaizen Institute

8: Regarding the new Kaizen project, what is the plan of regional capacity building in it?

9: I appreciate the new approach (Covid-19), but how can we apply this new approach practically?

H.E. Mr. Matsunaga, Japanese Ambassador

10: Mr. Endashew, the head of Federal Police Headquarters requested the introduction of Kaizen in his agency. Is there any progress?

Dr. Ephrem Gidey, President, Ethiopian Industrial Engineers' Association (EIEA)

We have been working closely with EKI for the last one year, particularly, for the CARS

implementation. About 20 staff of the association were engaged in the CARS activities, and they were very pleased. We are ready to strengthen our partnership with EKI, as I could say that we are the key partners or stockholder of EKI.

< Responses to the questions >

Related to Q10:

- There was not progress yet due to the Covid-19 spread. (Mr. Mekonnen, EKI)

Related to Q6:

- EKI designed the Kaizen tools and new techniques in time of Covid-19 by interlacing the WHO directions. We also integrated new 2Ss (sterilization and sanitization) to original 5Ss and added some issues like business continuity plan, which has not been common in the Kaizen initiative so far. Our consultancy service will address the issue of business operation by maintaining the Cross Functional Team (CFT) as well as retaining their business and employability. (Mr. Alowye, EKI)

Related to Q7:

- We started online consulting service for some companies, by utilizing IT technologies recently. Now, we want to conceptualize the new approach and how Kaizen contributes the prevention of Covid-19. Many companies are demanding our services and we are discussing how to make it possible. EKI started using the zoom account by which we are hosting the meeting now, and we are able to connect to our companies. (Mr. Mekonnen, EKI)

Related to Q8:

- The discussion with EKI on the design of the new project shall start from now on. It is very important to have common vision on the new project, and we will discuss the regional capacity building with EKI. (Mr. Keiji Katai, JICA Headquarter)

- We are considering the regions in the next fourth phase project. Now, the concept of the new project is under the development stage. The capacity development of the regional stakeholders will continue in a similar way that what we are currently doing, but it must be a bit deeper, having higher level of technology. The basic level Kaizen shall be managed by the regional institutes to disseminate the basic Kaizen methods to all citizens. We must continue to learn and transfer the high-level technologies from Japan. (Mr. Mekonnen)

Related to Q9:

- Regarding how to train company and company's employees in this time under the restriction of gathering more than four peoples, we are designing as well as advising to reach the companies and employees virtually. So, virtual training and consultancy will be the best alternatives (but not limited) to deal at this time. In order to do so, we need the support from the partners to assist in providing the necessary IT infrastructure, so that our on-line service will be available. But it does not mean that the presence of consultant in person is unnecessary. We also have to make sure that our consultants have the necessary personal protective equipment (PPEs) against the pandemic. (Mr. Alowye, EKI)
- Regarding the proposed Audio/Video studio, we are expecting JICA to study and support the matter, because we don't know when Covid-19 stops. We can organize the meeting using the platform like Zoom, but we also need to reach out our service through developing standardized electronic materials. We have conducted the pilot e-learning project so far and now need to bring it to effect by full scale implementation. (Mr. Mekonnen, EKI)
- As presented, we developed the project proposal on how EKI will intervene in the time of Covid-19. The state of emergency does not restrict manufacturing, production and construction works. We need to put our effort on keeping the companies survive and to ensure the employees safe and secured from this pandemic, while working on increasing the productivity. (Mr. Mekonnen, EKI)
- With the current situation of Covid-19, 65% of our consultants are working from home.

Among them, two EKI consultants, who had engineering background, came up with an engineering solution against the pandemic (new idea) of producing a new adapted technology, eternal disinfecting machine. The process of developing the prototype is almost done and we are discussing with different organizations on how to get into the fabrication. Such kind of creativity must be exercised during this challenging time. (Mr. Mekonnen, EKI)

## **REMARKS**

Mr. Makoto Shinkawa, Chief Representatives, JICA Ethiopia Office gave the remarks. First, he expressed the deepest sympathy for individuals affected by Covid-19. He also expressed the sincere appreciation to Ministry of Health, Ethiopian Public Health Institute (EPHI) and all concerned bodies such as hospitals and the workers for their cares and services given to the patients. He wished that the situation would turn to be better soon.

Then, he sent the appreciation to EKI to the effort of organizing the meeting and action made to the Covid-19. He said that he was encouraged by that, and emphasized the importance of finding the way to overcome the challenges and sustain our services in such crisis.

Next, he mentioned the preparation of the new phase project, wishing that Kaizen is further disseminated widely and deeply in Ethiopia and EKI will take leadership in the African Kaizen network.

Lastly, he concluded his remarks by sending congratulation for EKI, Japanese experts and all stakeholders for the successful completion of 3<sup>rd</sup> phase Kaizen project. He anticipated that the Kaizen dissemination program will contribute to the quality and productivity improvement and enhancing the competitiveness of Ethiopian companies.

## **CLOSING REMARKS**

As the closing remarks, H.E. Mr. Bezabih Gebreyes, Commissioner, forwarded the following points:

- I acknowledge and appreciate all the journey of Kaizen and what have been achieved. EKI has covered all the planned activities of the project and showed the high level of performance.
- Regarding the action plan in the time of Covid-19, there are two dimensions: the first one is how to dealing with the disease during Covid-19, and the second one is how to continue business after Covid-19. This plan was well prepared, so I want to encourage EKI to start the initiatives soon. It is hard to support the companies to continue their business, but we can learn good lessons from the UNDP that has been supporting the government business.
- The recommendation on the amendment of the legal framework of EKI made by Mr. Sugimoto was well taken. We would appreciate it if we could receive any advice on drafting the amendment.
- Regarding the 4<sup>th</sup> phase project, let us have a virtual conference soon to understand the framework of the project.
- My suggestion on the construction of the TICAD HRD Center is that some works could be continued in the way of sub-contracting or other.
- It would be great if we have a short video clip of the 3<sup>rd</sup> phase project. There is a platform called Walta TV (one of Ethiopian broadcasting channel), so we could disseminate the achievement through it.
- His Excellency Prime Minister Dr. Abiy declared an awarding program for innovative works to be done in any sector of the country, or under multilateral and bilateral agreements, in the time of Covid-19. As we are doing Kaizen, if we make innovative works together with JICA, we would be able to provide it to national committee.

He closed his remarks thanking all the participation to the meeting and wishing everyone's safety.

At last, Mr. Mekonnen expressed his gratitude to Japanese government and JICA as well as the Japanese experts for their unreserved efforts and continual support both technically and financially. He added that EKI has already started preparing the booklet of 10-year Kaizen journey, which will be launched in coming Kaizen month, September 2020.

(end)

**ANNEX I: The participant list:**

	Name	Title and affiliation
1	H.E. Mr. Bezabih Gebreyes	Commissioner, Civil Service Commission
2	Mr. Awoke Legese	Head, Dire Dawa Management and Kaizen Institute
3	Mr. Megabiyaw Tasew	Director General, Amhara Public Enterprises Supervising Authority
4	Dr. Ephrem Gidey	Chairperson, Ethiopian Industrial Engineering Association (EIEA)
5	Dr. Haddush Goytom	Scientific Director, Ethiopian Institute of Technology (EiT), Mekelle University
6	Mr. Mekonnen Yaie	General Director, Ethiopian Kaizen Institute (EKI)
7	Mr. Yigedeb Abay	Acting Deputy DG (Manufacturing Sector), EKI
8	Mr. Asnake Guddisa	Acting Deputy DG (Research & Certification Sector), EKI
9	Mr. Alwoye Yigrem	Acting Deputy DG (Infrastructure & Service Sector), EKI
10	Mr. Mulugeta Damtew	Deputy DG (Corp. Service & Operations Management Sector), EKI
11	H.E. Mr. Daisuke Matsunaga	Japan's Ambassador to Ethiopia
12	Mr. Nobuhisa Edamura	First Secretary, Economic Cooperation Division, Embassy of Japan in Ethiopia
13	Mr. Akbar Tasmin	Economic Cooperation Division, Embassy of Japan in Ethiopia
14	Mr. Toru Homma	JICA Headquarters
15	Mr. Keiji Katai	JICA Headquarters
16	Mr. Kenji Ishizuka	JICA Headquarters
17	Ms. Saki Ito	JICA Headquarters
18	Mr. Wakabayashi Chikamasa	JICA Headquarters
19	Ms. Sachiko Hara	JICA Headquarters
20	Mr. Kimiaki Jin	JICA Headquarters
21	Mr. Makoto Shinkawa	Chief Representative, JICA Ethiopia Office
22	Mr. Takeshi Matsuyama	Deputy Representative, JICA Ethiopia Office
23	Mr. Masaki Wakai	Representative, JICA Ethiopia Office
24	Mr. Hideo Eguchi	Chief Advisor, JICA Business Development Services (BDS) Project (Observer)
25	Mr. Naonobu Fuwa	JICA Business Development Services (BDS) Project (Observer)
26	Mr. Ryuji Seno	JICA BDS Project (Observer)
27	Mr. Seiji Sugimoto	Chief Advisor, JICA Kaizen Expert Team
28	Mr. Takeshi Fujita	Vice Chief Advisor, Expert on Institution Development, JICA Kaizen Expert Team
29	Mr. Kozo Sakai	Expert on Quality and Productivity Improvement, JICA Kaizen Expert Team
30	Ms. Tomoko Inaba	Expert on System Research/Training Plan in Japan and Third Countries, JICA Kaizen Expert Team
31	Ms. Nahoko Chiku	Expert on Higher Education/System Research, JICA Kaizen Expert Team
32	Ms. Elsabet Endale	Administrative Assistant, JICA Kaizen Expert Team

(end)



Final (7<sup>th</sup>) Joint Coordinating Committee Meeting

**JICA Project for Capacity Development for  
KAIZEN Implementation**  
for Quality and Productivity Improvement and Competitiveness  
Enhancement in the Federal Democratic Republic of Ethiopia

Ethiopia and Japan, May 29, 2020

Ethiopian Kaizen Institute (EKI)  
Japan International Cooperation Agency (JICA)

1

## Contents

1. Outline of Ethiopia Kaizen Project (3<sup>rd</sup> Phase)  
Mr. Mekonnen Yaie, General Director (GD), EKI
2. Summary of the overall achievements (Jul. 2015 – May 2020)  
Mr. Yigedeb Abay, Acting Sectoral Deputy Director General, EKI
3. Result of joint review  
Mr. Mekonnen Yaie, GD, EKI
4. Lessons learnt and recommendations  
Mr. Sugimoto, Chief Advisor, JICA Kaizen Project

2

### 1. Outline of Ethiopia Kaizen Project (3<sup>rd</sup> Phase)

**< Overall Goal >**

The quality and productivity in the targeted industries are improved, leading to enhancement of **Ethiopia's industrial competitiveness.**

**< Project Purpose >**

KAIZEN practitioners are trained in **both the private and public sectors** through the KAIZEN dissemination system led by the EKI.

**< Project Period >**

5 years (July 2015 – June 2020)

3

### 1. Outline of the Project (conti.)

**< Project Area >** Entire Ethiopia

**< Target Group >**

EKI and Regional/City KI staff members, TVET Trainers, academic institutions, private enterprises and other institutions that receive training and consulting service

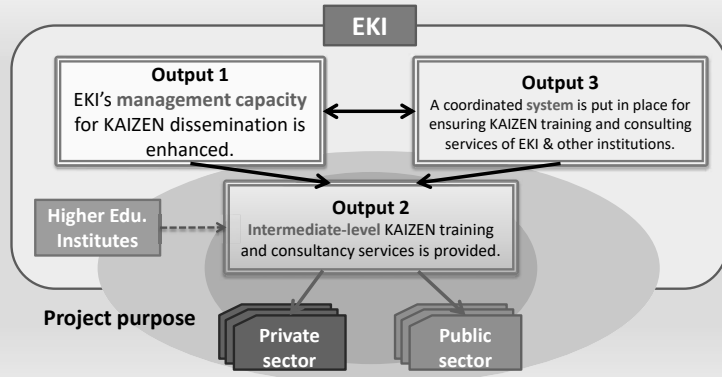
**< Project Implementing Agency >** EKI

**< Stakeholder Organization >**

- FDRE CSC (Civil Service Commission)
- MoTI (Ministry of Trade and Industry)
- MoSHE (Ministry of Science and Higher Education)

4

### 1.1 Three expected outputs of the Project



## 2. SUMMARY OF THE ACHIEVEMENTS (JUL. 2015 – MAY 2020)

### Outputs and indicators

#### < Output 1 >

EKI's (including its regional network) management capacity in KAIZEN dissemination is enhanced through the accumulation and standardisation of best practices.

*[Indicator 1-1] International best practices and performances are compiled as a reference.*

*[Indicator 1-2] A KAIZEN technologies dissemination plan is prepared and being implemented.*

*[Indicator 1-3] KAIZEN implementation guidelines are prepared, followed and revised.*

*[Indicator 1-1] International best practices and performances are compiled as a reference.*

< Output 1 >  
**Done!**

- The study of best practices of Kaizen promoting organizations in Japan and 3<sup>rd</sup> countries was completed in the first year of the project.
- Based on the study, **five-year Kaizen dissemination plan (2015-2020)** was formulated.

Appendix 6: EKI Kaizen Dissemination Plan

CONTENTS

EKI Kaizen Dissemination Plan based on BSC	1
Composition of the Kaizen Dissemination Plan	1
1. Mission, Vision and Values	2
2. SWOT Analysis	2
3. Comparison with Best Practices of Similar Organizations and EKI Activities	7
3-1. Comparison with Best Practices	7
3-1-1. Approach to Comparison	7
3-1-2. Analysis of the dissemination course	8
3-1-3. Institutionalization of KAIZEN	10
3-2. Similar Examples in Japan	11
3-2-1. Japan Management Association	11
3-2-2. Union of Japanese Scientists and Engineers	17
3-2-3. Japan Productivity Center	24
3-3. Examples of Singapore and Malaysia	32
3-3-1. Singapore	32
3-3-2. Malaysia	38
4. Listing and Arrangement of Strategies	41

< Output 1 >  
**[Indicator 1-2] A KAIZEN technologies dissemination plan is prepared and being implemented.**

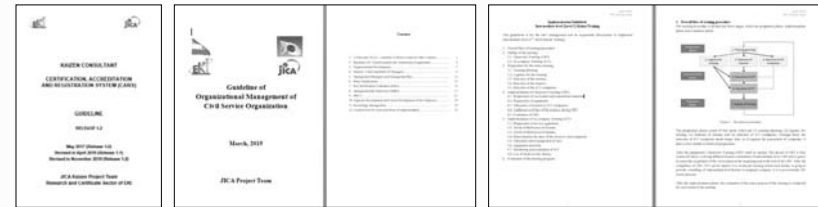
**Done!**

- The formulated Kaizen dissemination plan has **5 strategic pillars and 17 programs**.
- The Project has been supporting several programs in five years.
- It includes:
  - The establishment and implementation of consultant qualification system (CARS);
  - The establishment of city/regional Kaizen institutes;
  - The introduction of Kaizen to public organizations as well as service sector;

< Output 1 >  
**[Indicator 1-3] KAIZEN implementation guidelines are prepared, followed and revised.**

**Done!**

- For the programs that the Kaizen Project had supported, the necessary guidelines were developed, followed (implemented), and revised. Some of them are:



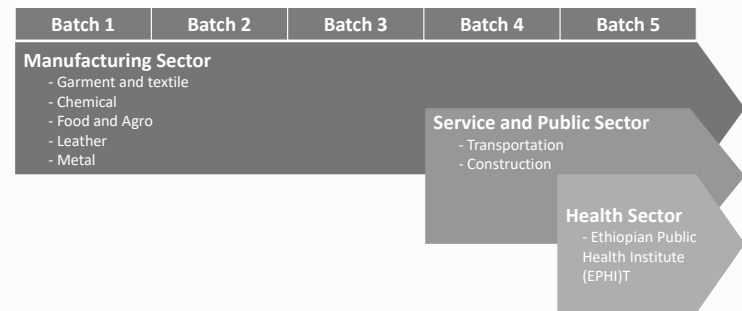
< Output 2 >

EKI becomes able to provide intermediate-level KAIZEN training and consultancy services to private and public sectors.

**[Indicator 2-1] ~ [Indicator 2-5]**

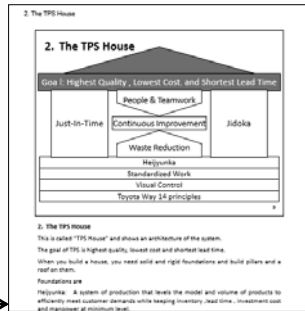
< Output 2 >  
**[Indicator 2-1] An overview of the sectors / sub-sectors targeted for intermediate-level KAIZEN training and consultancy services is prepared.**

**Done!**



**[Indicator 2-3] Course materials and manuals for Classroom Training (CRT) of intermediate-level are prepared.** < Output 2> **Done!**

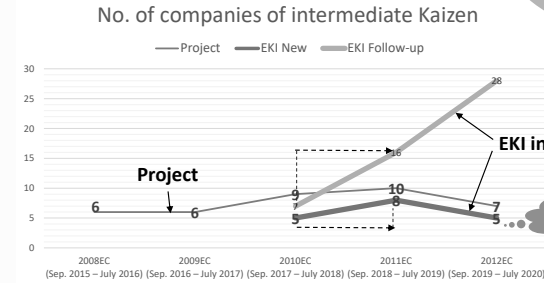
- 11 types of training materials prepared;
- These were revised for every batch corresponding to:
  - the status of the trainees;
  - the sector to be covered in the concerned batch
- And, added new contents:
  - Inherent technology;
  - Case method materials
- Complied as the standardized materials.



Sample page of TPS session 13

**[Indicator 2-2] Implementation plans for intermediate-level KAIZEN training and consultancy services are developed and put into practice through BSC.** < Output 2>

**[Indicator 2-4] Five (5) CRT and ICT of intermediate-level have been conducted.**

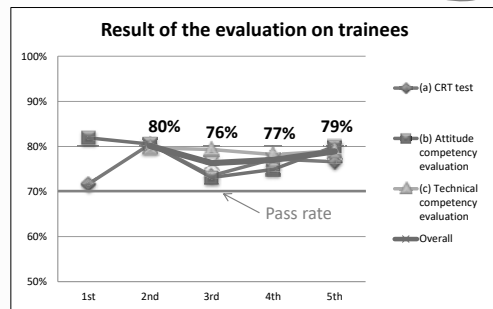


**Excellent!**

COVID-19

**[Indicator 2-5] Evaluation reports on CRT and ICT of intermediate-level are produced twice.** < Output 2> **Done!**

- For each batch, the Project conducted the evaluation on:
  - ✓ The trainees;
  - ✓ The trainers;
  - ✓ The ICT companies' satisfaction.
- The right graph shows the result of the evaluation on the trainees.



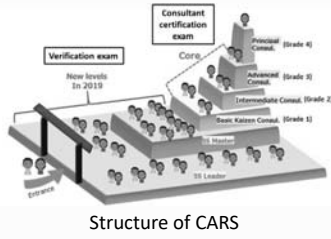
**< Output 3>**

A coordinated system is put in place whereby quality of KAIZEN training and consultancy services provided by EKI and other institutions is ensured and KAIZEN dissemination is promoted at national level.

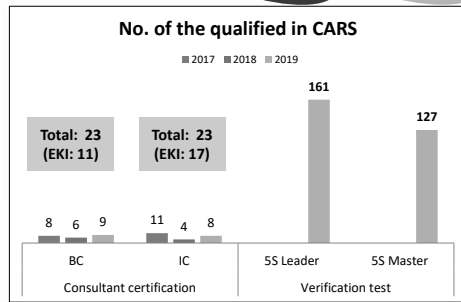
**[Indicator 3-1] ~ [Indicator 3-5]**

[Indicator 3-1] A grading, certifying and registering system for KAIZEN consultants is prepared, and 174 consultants\* are certified and registered. < Output 3>

Partially Done! Excellent!



\*Note: The set target may be too ambitious.



[Indicator 3-3] A system for collecting, compiling, and utilizing information on KAIZEN practices is put in place and utilized. < Output 3>

Done!

- Knowledge management proposed in Organizational management.
- EKI's Kaizen Management Information System (KMIS) under development.
- For sub-sectors, the case methods of the training materials developed.
- EKI's research workshop conducted every year.

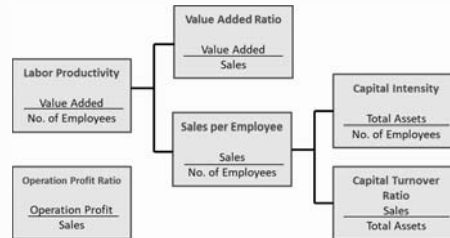


[Indicator 3-4] A study report on the improvement trends of and EKI's contribution made to the Ethiopian industry sector is produced. < Output 3>

Done!

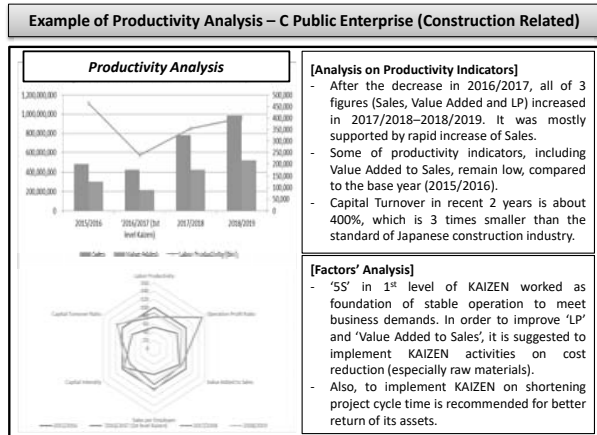
- EKI and the project conducted "the analysis of value-added productivity targeting ICT enterprises".
- In total, 13 individual reports were produced by EKI's Research and Best Practice Directorate.

Private	Garment/textile	3
	Leather	1
	Metal	3
	Chemical	2
Public	Construction	3
	Chemical	1



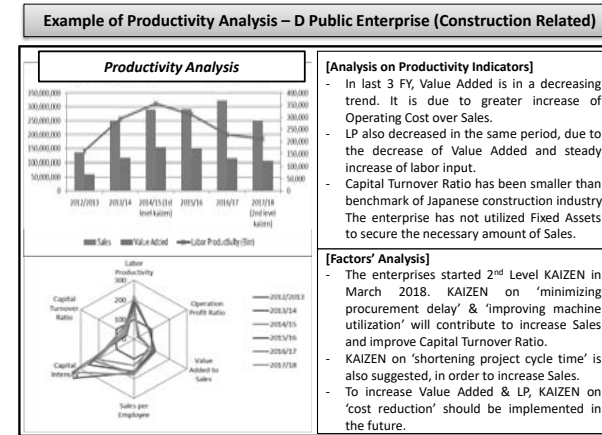
### A few Key findings of the study

- For almost all the companies,
  - Introduction of basic KAIZEN (5S and Problem solving) has contributed to the foundation building of production site.
  - It enabled to keep meeting the increase of production demand.
  - It led to the improvement of Value Added to Sales, as well as Operation Profit Ratio.
- In many companies,
  - The level of inventory was very high.
  - Some of them were wasted, due to the long storage period.
  - The introduction of appropriate inventory management will contribute to the improvement of Value Added to Sales and Operation Profit Ratio.



5/28/2020

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5/28/2020

23

*[Indicator 3-5] EKI KAIZEN magazines are published once a year.* < Output 3 >

Done!

- EKI's PR activities include:
- Annual National and Regional Kaizen seminars in Kaizen Month and bi-annual Kaizen Awards;
  - Annual research workshops (1/year);
  - Proceedings of research and company best practices (1/year);
  - Annual magazines (1/year);
  - Documentaries (2/year); etc.



2019 National Kaizen Awards



Proceedings



Annual magazine

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## Project Purpose and its four indicators

< Project Purpose >

KAIZEN practitioners are trained in **both the private and public sectors** through the KAIZEN dissemination system led by the EKI.

*[Indicator 1] 81 consultants complete intermediate-level KAIZEN training; and 32 consultants are certified and registered as intermediate-level Kaizen consultants.*

*[Indicator 2] The values of KAIZEN indicators of the enterprises that received KAIZEN training or consulting services during the Project period increased by 20% on average compared to before KAIZEN.*

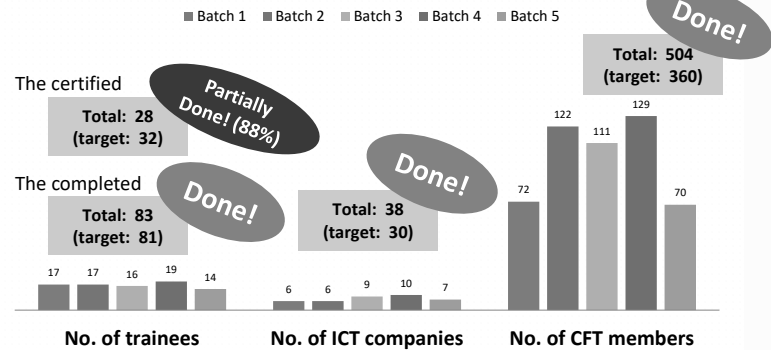
*[Indicator 3] 30 enterprises are involved in intermediate-level KAIZEN activities.*

*[Indicator 4] 360 managers and workers are involved in intermediate-level KAIZEN activities.*

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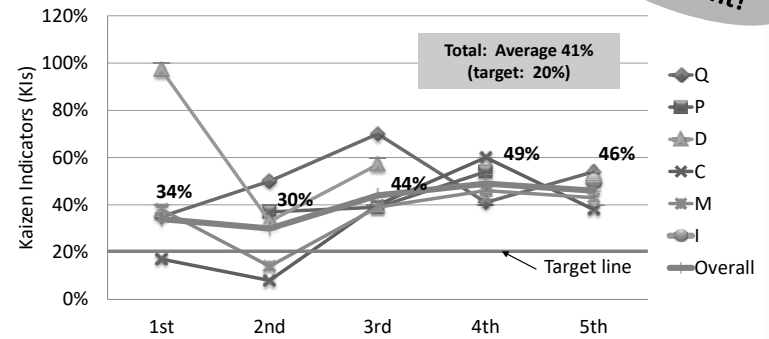
### Project purpose – Indicator 1, 3 and 4

#### Result of Intermediate-level Kaizen training



### Project purpose – Indicator 2

#### Kaizen Indicators by target



### Conclusion

Project purpose can be said **“achieved.”**

“Excellent” / “Done” 3

“Partially done (88%)” 1

Outputs was can be said **“achieved.”**

“Done” 12



“Partially done” but “Excellent” 1

### 3. RESULT OF JOINT REVIEW


## The Five DAC Evaluation Criteria

Criteria	Way of thinking
(1) Relevance	The degree to which the project can be justified in relation to local and national development priorities, i.e. the validity of the <b>Overall Goal</b> and <b>Project Purpose</b> at the evaluation stage.
(2) Effectiveness	The extent to which the <b>Project purpose</b> has been achieved; whether this can be expected to happen on the basis of the <b>Outputs</b> of the project.
(3) Impact	Positive and negative changes produced, directly or indirectly, as a result of the Implementation of the project.
(4) Efficiency	The productivity in project implementation. The degree to which <b>Inputs</b> have been converted into <b>Outputs</b> .
(5) Sustainability	The extent to which the positive effects of the project will continue after external assistance has been concluded.

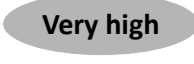
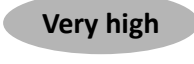
30

Criteria & Result	Reasons
<b>(1) Relevance</b> 	<ul style="list-style-type: none"> <li>• Kaizen defined as a principal tool for the improvement of quality, productivity and competitiveness in GTP2;</li> <li>• The project responded to the government's demand of Kaizen dissemination (public and service sectors);</li> <li>• Revised the CRT of intermediate Kaizen training;</li> <li>• Kaizen Indicators (KIs) of the ICT companies = 40-50%</li> </ul>
<b>(2) Effectiveness</b> 	<ul style="list-style-type: none"> <li>• Project Purpose: all indicators achieved except one (No.1: 32 consultants are certified and registered)</li> <li>• Outputs: all indicators achieved except one (No.3-1: 174 are certified and registered)</li> </ul>

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Criteria & Result	Reasons
<b>(3) Impact</b> 	<p>(a) Prospects to achieve Overall Goal</p> <ul style="list-style-type: none"> <li>• "Kaizen" – common terminology for improvement of quality and productivity in LMEs and SMEs;</li> <li>• 2<sup>nd</sup> level Kaizen in LMEs: 51 companies/56 continues (91%) continues.</li> <li>• Collaboration with MIDI, TIDI, etc. for better quality of consulting services with the inherent technologies;</li> <li>• One textile/garment company awarded African Kaizen Award 2019 expected to lead the sub-sector;</li> <li>• EKI's capacity building for city and region continues;</li> <li>• The new 10-year EKI's strategic plan (2020-2030) developed.</li> </ul> <p>(b) Positive impact</p> <ul style="list-style-type: none"> <li>• Kaizen PhD program: in Mekelle Univ. and in Japan;</li> <li>• Foundation made to be CoE of Kaizen in African region;</li> <li>• Collaboration with the Ethiopian Industrial Engineers' Association (EIEA)</li> </ul>

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Criteria	Reasons
<b>(4) Efficiency</b> 	<ul style="list-style-type: none"> <li>• The activities conducted based on needs of the beneficiaries, practical applicability and HRD;</li> <li>• Kaizen dissemination plan developed at earlier stage (2015) and showed the way forward;</li> <li>• Visits to Japan for Minister/Commissioner (2017, 2019);</li> <li>• Kaizen Lecture by Prof. Hiroshi Osada for the members of Ethiopian Parliament (2019)</li> </ul>
<b>(5) Sustainability</b> 	<p>(a) Organizational sustainability</p> <ul style="list-style-type: none"> <li>• Continuous gov't attention paid to Kaizen;</li> <li>• Kaizen recognized as the philosophy and tool for transforming the country and HRD;</li> <li>• 83 staff trained (75% of EKI) in the Intermediate-level training and the staff retention rate as high as 98%;</li> <li>• The new consultant evaluation system developed.</li> </ul>

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Criteria	Reasons															
Cont. <b>(5) Sustainability</b>  <b>Very high</b>	(b) Financial sustainability															
	<ul style="list-style-type: none"> <li>Budget provided by the gov't (incrsd. by 59% in 5 yrs)</li> </ul>															
	<table border="1"> <thead> <tr> <th>Financial Year</th> <th>2008EC (2015/16)</th> <th>2009EC (2016/17)</th> <th>2010EC (2017/18)</th> <th>2011EC (2018/19)</th> <th>2012EC (2019/20)</th> </tr> </thead> <tbody> <tr> <td>Million Birr</td> <td>25.1</td> <td>33.6</td> <td>36.9</td> <td>39.0</td> <td>39.9</td> </tr> </tbody> </table>	Financial Year	2008EC (2015/16)	2009EC (2016/17)	2010EC (2017/18)	2011EC (2018/19)	2012EC (2019/20)	Million Birr	25.1	33.6	36.9	39.0	39.9			
Financial Year	2008EC (2015/16)	2009EC (2016/17)	2010EC (2017/18)	2011EC (2018/19)	2012EC (2019/20)											
Million Birr	25.1	33.6	36.9	39.0	39.9											
<ul style="list-style-type: none"> <li>The revision of the EKI's Proclamation recommended.</li> </ul>																
(c) Technical sustainability																
<ul style="list-style-type: none"> <li>The standardized training materials of intermediate Kaizen developed;</li> <li>EKI's provision of the consultancy of the same level;</li> <li>Writing "Kaizen Standard Book" started;</li> <li>5 EKI consultants in the Kaizen PhD program;</li> <li>The question Item bank and implementation guideline of CARS developed.</li> </ul>																

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## 4. LESSONS LEARNT AND RECOMMENDATIONS

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### Lessons learnt

Four key factors that the project team has drawn in 5 years:

- (1) How to respond to changes?
- (2) How to institutionalize Kaizen?
- (3) How to enhance the capability of consultants?
- (4) How to co-evolute EKI's future direction and the staff's career plan?

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(1) How to respond to changes in needs of support?

- EKI has been under the umbrella of MoI, MoPSHRD and CSC;
- There are many urgent tasks related to public organization;
- In order to work with such a fast-moving organization as a counterpart, it is necessary to collect information and take actions quickly.

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(1) How to respond to changes in needs of support? (conti.)

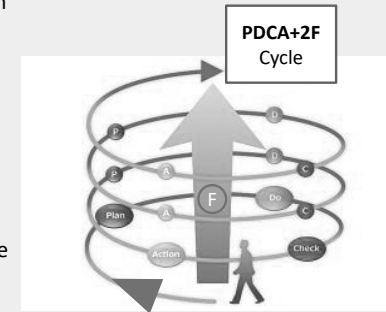
In this regard,

- I. Forecasting future EKI's situation according to pieces of information to eliminate inconsistencies and predict how EKI is going to work;
- II. To identify themes that may be of interest to EKI, and to make a proposal to it;
- III. To raise issues and propose Kaizen measures for cases that the project team consider important, while there are many other agenda that EKI has to take care.

→ Kaizen Indicators, 5S Master/Leader, EKI staff awards, Organizational Kaizen.

(2) How to institutionalize Kaizen?

- Rules, manuals, customs, laws, etc. which are visible, facilitate the functions of the system.
- **Invisible institutionalization** is also important. One is to enhance PDCA activities. Exactly speaking, **PDCA+2F** cycle. "2F" means **feedback and fast**.
- The feedback should be drawn from the entire cycle of PDCA and be utilized in the next cycle to escalate to next level; and making PDCA cycle faster to correspond to changes.



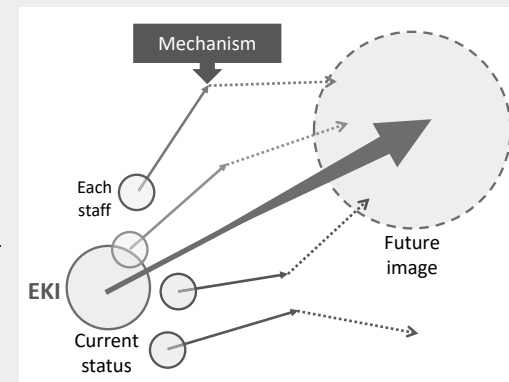
(3) How to enhance the capability of consultants?

- As the level of Kaizen goes from basic to intermediate and above,
  - The needs of **inherent technology** increases.
  - The view of **marketing** is required to increase customers satisfaction.
  - The **management** is crucial to realize the overall optimization.
- Thus, the consultants, who equipped with these three in addition to Kaizen technology, should be fostered in the next phase of the project.



(4) How to co-evolute EKI's future direction and the staff's career plan?

- **Co-evolution** is a term that represents a good relationship in which individuals or organization influence each other to evolve and grow.
- If the future vectors of EKI and the staffs are in **the same direction** as much as possible, it would help to extend the organizational capabilities and for each staffs to fully demonstrate their capabilities.
- To this end, it is important for the staff to have **the same recognition on the EKI's future**. It may be possible to set up a kind of competition on proposing the future image of EKI.







## The Way Forward

May 29, 2020

Keiji Katai  
Director,  
Private Sector Development Group, JICA

1



## Great Achievement by the Project

- **Overall Goal** The quality and productivity in the targeted industries are improved, leading to enhancement of Ethiopia's industrial competitiveness.
- **Project Purpose:** KAIZEN practitioners are developed in both private and public sectors through the KAIZEN dissemination system led by EKI.
- Output 1: EKI's management capacity in KAIZEN dissemination is enhanced
- Output 2: Intermediate-level KAIZEN training and consultancy services is provided
- Output 3: A coordinated system is put in place for ensuring KAIZEN training and consulting services of EKI & other institutions.

2



## Our Goal

### In Ethiopia

- ✓ We would like to enhance competitiveness of Ethiopian companies.

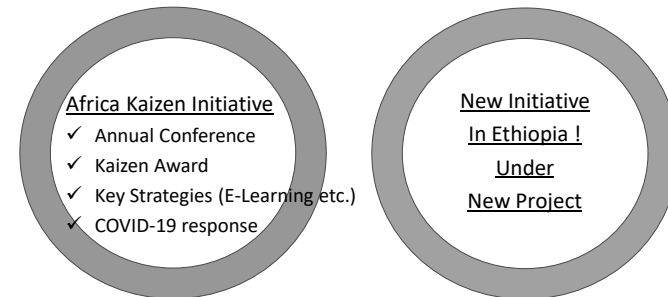
### As Africa Kaizen Initiative in collaboration with AUDA-NEPAD

- ✓ We would like to promote KAIZEN for economic transformation.
- ✓ JICA would like Ethiopia to become a Center of Excellence for neighboring countries and for Africa.

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## How can we achieve our goals based on our achievements?



Project for Establishing Comprehensive Support System for Enhancing Firm Competitiveness 4

## Some Viewpoints



- What are the critical skills for enhancing competitiveness of Ethiopian Companies?

--- How to improve value addition per worker?  
 --- Kaizen and  $\alpha$ : marketing, management, etc.?

5

## Some Viewpoints



- How can we create pool of qualified consultants with necessary skills to meet the demand of Ethiopia?

--- Qualification System: CARS and its future

6

## Some Viewpoints



- How can we create market-led / demand-led service delivery mechanism?

--- Fee structure will be a big challenge  
 --- Partnership with private consultants to meet the big demands  
 --- How should feedback mechanism to the consultants be?  
 --- What are the key role of EKI?  
 --- How about partnership with other organizations?

7

## Some Viewpoints



- What kinds of ICT tools can we use to achieve scale with quality?

8

## Preparation of the New Project



### Timeline

June 2020: Online Interviews and Data Collection

July 2020: Online Discussion with Ethiopian Side

Sep. 2020: Signing of the R/D

### JICA Team for Detailed Design Survey

Team Leader: Mr. Toru Homma

Team Member: Mr. Kenji Ishizuka, Ms. Sachiko Hara

Ms. Saki Ito

Consultants: To be appointed.

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## FYI: Expected achievements by other on-going project



### Project on Business Development Services (BDS) Enhancement for Enterprise Growth

- Project Period: Sep. 2018 – Sep. 2021
- CP: FeSMMIPA, FeUJCFSA, and Addis Ababa City
- Overall Goal: Ethiopian MSMEs receive high quality BDS provided through BDS Providers (BDSPs) network and its' business are enhanced
- Project Purpose: Ethiopian MSMEs receive high quality BDS through BDSPs network in target areas.
- Outputs
  - 1 The capacity of FeSMMIPA and FeUJCFSA to develop strategic plan for MSMEs support is strengthened.
  - 2 Implementation set-up for BDS provision in collaboration with BDSPs is developed and operated
  - 3 The capacity of staff at sub-city and woreda (OSSC) to support MSMEs is strengthened.

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Thank you for your cooperation  
and  
looking forward to working with you  
for the new project



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# Kaizen in the time of COVID 19 (KIT-C19)

— A Business Retaining and Recovery Approach —



29 May 2020  
EKI, Addis Ababa

## Contents

1. Introduction
2. Role of Kaizen in time of COVID-19
3. Initiations
4. Focus areas
5. Expected outcomes
6. Roles of Parties
7. Conclusion

## 1. Introduction

Hoping we will defeat COVID19!

A message of Hope;

“Rather than a flower, You must become the dirt that makes the flower bloom”

Kaizen Institute (2020)



## How to grow hope?

- New thinking and paradigm shift
- Collaboration, collective effort and synergy
- Unreserved effort and increasing flexibility
- Action oriented

*Kaizen is the better way to bring the above attributes!*

## 2. Role of Kaizen in time of COVID-19

### What Kaizen can brings?

- Kaizen is about setting a mindset which is too flexible and responsive to the challenging phenomenon.
- It is not about giving up and stucking somewhere whenever there are hurdles.

Showing our flexibility is needed.

Cont...

- Kaizen thinkers, practitioners and consultants are here to take this leading role.
  - ✓ Create a flexible mind set
  - ✓ Support industries to retain and recover their business in the pandemic
  - ✓ Exploit Kaizen tools and techniques for practical prevention and controlling of the pandemic.

## 3. Initiations

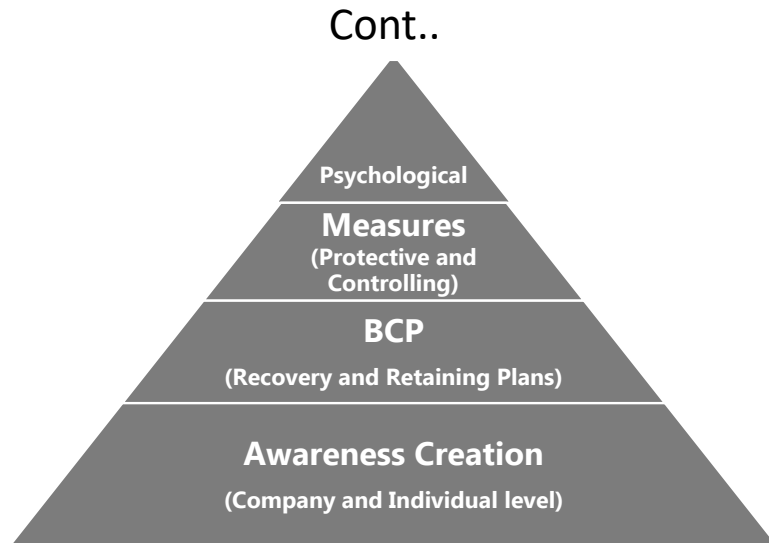
- Preparing a platform to make our services with no human contact by using ICT.
  - ✓ (Online attendance, online meetings, online Corporate Services)
- Virtual training and consultancy
- Conceptualization to address COVID19 through Kaizen tools and techniques
- Come up with new training and consultancy packages (BCP)

## 4. Focus areas of our service

- BCP to resume businesses and retain employee **(Retain) (R)**
- Preventive and protective **measures(M)**
- **Awareness** creation (A)
- **Psychological** readiness (P)

**ARMP**





## 4.1) Awareness creation

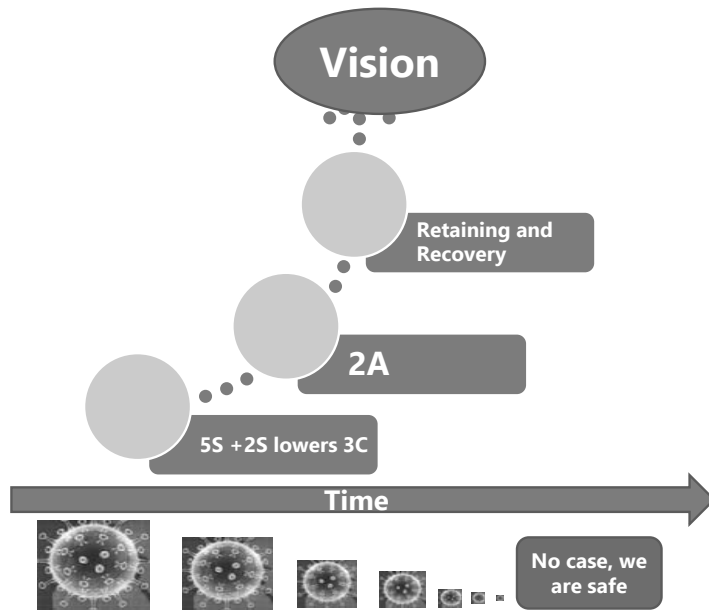
- Importance of having flexible organization and management
- Seeking opportunities from challenges
- Disciplined workforce
- Training

## 4.2) BCP (Business Continuity Plan)

- Risk analysis
- Remote working and virtual teams
- Recovery plans
- Business after COVID-19
- Scenario analysis

## 4.3) Measures (Protective and controlling)

- Application of the old **5S** and **2S** (Sanitation and Sterilization)
  - \* labeling, tagging, coding, standards
  - \* Andon, alarms and visual displays
  - \* Layout improvement
- Avoidance of **3C** (Crowd, Close distance and Closed Room)
- Elimination of **2As** (Anxiety and Adverse News)
- Introducing Virtual QCCs
- Protective technologies like disinfectants



#### 4.4) Psychological Readiness

- Opportunity seekers and optimistic organizations
- Amending strategies and policies
- Creativity
- Social responsibility
- Multi skilled operators and flexible organizations

#### 5. Expected Outcomes

- Safety of workers will be maintained
- Businesses will remain operational
- Employment security will be ensured
- Productivity will be enhanced
- Virtual training and consultancy will be fully functional

#### 6. Roles of Parties

##### 6.1) Roles of Ethiopian Kaizen Institute

- Initiating new Kaizen training and consultancy approaches
- Ensure ICT capability
- Designing strategies to implement to companies
- Work with partners to revert COVID19 to a business growing opportunity.

## 6.2) Roles of Partners

- Technical support on new initiatives and capacitating of consultants
- Financial support to ensure the safety of consultants (PPEs, ICT components)...
- Fully operationalize the online training platform
- Establish Audio Video studio

## 7. Conclusion

1. We are in a position to think and practice **new consultancy services to retain businesses**
2. **Remote working** and **virtual teams** are very timely
3. **Training materials** preparation and validation have to be started
4. **Pilot testing** in some companies
5. **Role of partners** is very significant in this time

**Together we can!!  
But no such crowd**



Q&A

*Eternal  
Disinfecting  
Technology*

