

# Achievements in the Quality and Productivity Improvement (KAIZEN) Project

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Based on the request of Prime Minister Meles, the Japan International Cooperation Agency (JICA) and the Ministry of Industry (MOI) jointly started technical cooperation for development planning, the Study on Quality and Productivity Improvement (KAIZEN), hereinafter referred to as “the KAIZEN Project.” The KAIZEN Project was implemented in close coordination with the industrial policy dialogue. The progress and achievements of the Project regularly were reported in the High Level Forums and dialogues with the Prime Minister and concerned ministers. These interactions contributed to the provision of productive policy advice as explained in chapter 1.

This chapter outlines the KAIZEN Project activities and its achievements. It also explains some recommendations for dissemination of KAIZEN in Ethiopia. Main contents of the chapter were reported directly to the Prime Minister in May 2011 during the final visit to Ethiopia for the policy dialogue. The Prime Minister requested JICA to continuously assist the dissemination of KAIZEN to private enterprises including both large and medium enterprises (LMEs) and micro and small enterprises (MSEs).

## **2-1. Profile of the KAIZEN Project**

### **2-1-1. Objectives of the KAIZEN Project**

The KAIZEN Project was implemented by MOI with the assistance of JICA in accordance with the Scope of Work signed by both parties on June 4, 2009. The Project focused on the KAIZEN practice, which had been proved as an effective

approach to quality and productivity improvement, not only in Japan but also in many other countries. The KAIZEN Project has the following three objectives:

- (i) *Pilot Project Performance*—to formulate a manual to be used for conducting KAIZEN activities in Ethiopia, which is prepared based on the results from verification study through the implementation of pilot activities for selected twenty eight companies;
- (ii) *Human Resources Development*—to transfer relevant skills and techniques to the staff members of KAIZEN Unit (KU) of MOI; and
- (iii) *National Plan Formulation*—to make a plan to disseminate KAIZEN activities for manufacturing companies in Ethiopia.

The KU is an organization established by MOI for the purpose of implementing the KAIZEN Project. It is a temporary unit within MOI. Ten persons were assigned as KU members from the following five organizations of MOI: Metal Industry Development Institute; Textile Industry Development Institute; Leather Industry Development Institute; Agro-processing Department; Chemical Industry Development Directorate; and Privatization & Public Enterprises Supervising Agency. KU members were to acquire KAIZEN-related knowledge and skills through on-the-job training as well as through other training opportunities available in the KAIZEN Project activities. It was also expected that the KU members become the core group in a future permanent institution, Ethiopian KAIZEN Institute (EKI), to lead KAIZEN dissemination in Ethiopia.

## **2-1-2. Implementation and timeframe of the KAIZEN Project**

The experiences show that it is possible to apply KAIZEN in countries with different socio-cultural contexts but that application must be conducted under proper leadership and with adjustments that reflect the uniqueness of the targeted society (GRIPS Development Forum, 2009). Therefore, the KAIZEN Project aimed at evaluating the effectiveness of KAIZEN in Ethiopian enterprises, based on the results of the pilot project. The Project has supported the development and establishment of basic methodology of the KAIZEN activities in Ethiopia, tailored to the local context, as well as its nationwide dissemination. The Project has also

supported the development and creation of the manual, to transfer relevant skills and techniques to the KU members, and the accumulation of findings that will be essential in the formulation of the National Plan.

Table 2-1. Timeframe of the KAIZEN Project

Phase	Project Activities
Phase 1 October 2009 – January 2010	- Situation analyses of the Ethiopian industrial sector - Preparation of the pilot project (selection of the pilot companies, developing methodological framework for the pilot project, etc.)
Phase 2 January 2010 – December 2010	- Planning of the implementation of the pilot project - Implementation and evaluation of the pilot project with the selected pilot companies - Creation and finalization of the manual based on the evaluation of the pilot project
Phase 3 January 2011 – May 2011	- Drafting of the national plan for enhancing the KAIZEN activities in Ethiopia - Seminars for demonstrating the pilot project outputs and methods for a wide dissemination of KAIZEN across the country - Final capacity development activities for KU members to ensure the transfer of skills and techniques that has taken place throughout the KAIZEN Project period.

Source: JICA (2011).

The KAIZEN Project was conducted from October 2009 to May 2011. The Project activities are divided into three phases (Table 2-1).

## 2-2. Achievements of the KAIZEN Project

### 2-2-1. Positive results

The pilot project brought various positive results to pilot companies qualitatively and quantitatively (Table 2-2). Qualitative improvements were widely observed. KAIZEN has two key features: “*incremental and continuous improvement*” and “*involvement of the entire workforce*” in that process (GRIPS Development Forum 2009, p.2). These characteristics reflected well on the positive qualitative results. KAIZEN toolkit such as 5S, Suggestion System and Quality Control Circle (QCC) caused safe and clean environment and facilitated employee participation.

Table 2-2. Positive Results Observed in Some Pilot Companies

Qualitative results
<ul style="list-style-type: none"> <li>(i) Clean working environment created</li> <li>(ii) Teamwork and motivation of workers developed</li> <li>(iii) Health and occupational safety of workers improved</li> <li>(iv) Lower level workers accustomed to suggesting improvement ideas to management decisions – Increased Employee Participation</li> <li>(v) Knowledge obtained on how to meet quick delivery and to reduce costs</li> </ul>
Quantitative results
<p><b>【Monetary impact】</b></p> <ul style="list-style-type: none"> <li>(i) By Reducing costs (a) ETB10,000 per month and (b) ETB78,000 per annum</li> <li>(ii) By generating additional income of ETB1.2 million per year</li> <li>(iii) By just decreasing down time ETB204,000 per day</li> <li>(iv) By rectifying raw materials defect used for manufacturing ETB2.4 million</li> <li>(v) By identifying, repairing and reusing of usable machines &amp; equipment worth of ETB3.25 million</li> </ul> <p><b>【Non-Monetary impact】</b></p> <ul style="list-style-type: none"> <li>(vi) Increasing labor productivity, by reducing time loss for searching tools on average 50%</li> <li>(vii) Reduction of floor space around 50%</li> <li>(viii) Defect ratio improvement in the range of 50 to 70%</li> <li>(ix) Lead time improved in the range of 16 to 90%</li> <li>(x) Labor saved from 15 to 90%</li> </ul>

Source: JICA (2011).

Note: 1ETB (Ethiopian Birr) = USD16.65

Quantitative results are divided into monetary impact and non-monetary impact. The monetary impact is ETB500,000 per company on average, although it ranges from ETB10,000 to ETB3,259,000, depending on the size of company and its sector characteristics. The average of ETB500,000 is a large amount of money for an Ethiopian company, which is typically staffed with 10 to 50 employees.

## 2-2-2. Highlights of the results of the pilot project

The KAIZEN Guidance Company Assessment was conducted to make assessment of the companies' potential future development of their KAIZEN practice, or their potential to eventually become "KAIZEN model companies". Here, "KAIZEN model companies" mean those which continuously practice KAIZEN and as the result, realize achievements that significantly excel other companies in terms of quality / productivity improvement. The grading is given in five levels (Table

2-3).<sup>1</sup>

Table 2-3. Grade Point Distribution

Grade	Possibility to be a KAIZEN model company	Number of the companies
5	High	6
4	Good	4
3	Some	8
2	Low	6
1	No	4
Total		28

Source: JICA (2011).

Six companies are rated grade 5 and four companies are rated grade 4. These ten companies have high or good possibility to become KAIZEN model companies. These ten companies are expected to continue KAIZEN practices and to accumulate tangible improvements in quality and productivity.

The key success factors identified with respect to companies graded at 5 and 4 are: (i) management's positive attitude towards KAIZEN including management's strong commitment; and (ii) good management-employee relationship where trust and empowerment is ingrained in the management practice, including management's willingness to communicate with employees and train them. Another important factor for success is the absence of disruptive management conditions, such as shortage of operating capital or difficulty in procurement of materials, which would cause suspension of ordinary company operation.

By contrast, six companies are rated grade 2 and three companies are rated grade 1. The factors behind them are: (i) lack of management commitment to KAIZEN as revealed by personnel changes that neglect the KAIZEN efforts or by management priority on production volume and inattention to quality; and (ii) management problems that jeopardize the company's operation as a viable going-concern.

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<sup>1</sup> The possibility to be a KAIZEN model company is graded according to various criteria, for example, model workplace activities (5S, standard operation sheets, layout study), human resource activities (employee training of basic KAIZEN knowledge, workload reduction), organization management (QCC activities, wide dissemination of KAIZEN), management's leadership (commitment of top management, management-employee relations) and development of KAIZEN activities.

Many of the companies in this grading group lack the basic management capabilities in the area of business planning, cost accounting and operation data, and trust and empowerment.

### 2-2-3. Assessment of capacity development for KU members

The KAIZEN Project assisted rapid capacity development for KU members. Table 2-4 shows assessment result of capacity development of KU members. It includes five levels of KAIZEN professionals from Level I (Junior KAIZEN Consultant) up to Level V (Lead KAIZEN Consultant). It was a fair observation that the KU members had been at a level below Level I at the very beginning of the pilot project. It is fair to note, by the end of pilot project, that they have reached at least Level II (Assistant KAIZEN Consultant) while a few members have reached Level III (KAIZEN Consultant). After the implementation of the special guidance program done independently by the KU members in March–April 2011, about two-thirds of the KU members were graded at Level III. The Level III KAIZEN Consultant is required to be competent in preparing case materials for training exercises and to have industrial / business management knowledge. The KU members, who are capable of playing significant roles in the KAIZEN guidance sessions, are now solidly on track to develop themselves towards further higher levels of KAIZEN consultants.

Table 2-4. Assessment of Capacity Development of KU Members

Level	Competence	Assignment	Before project	After project
0	No experience of KAIZEN		9	
I	Competent to conduct KAIZEN activities for yourself	Junior KAIZEN Consultant		
II	Competent to guide KAIZEN activities	Assistant KAIZEN Consultant		3
III	Competent to provide consultancy services on KAIZEN	KAIZEN Consultant		6
IV	Competent to provide consultancy services on KAIZEN	Senior KAIZEN Consultant		
V	Competent to provide consultancy services on KAIZEN	Lead KAIZEN Consultant		

Source: JICA (2011).

Four types of capacity development activities were undertaken. They are: in-house training; on-the-job training; self-learning; and training program in Japan. Each activity significantly interacts with one another to achieve capacity development effectively. For example, in-house training and on-the-job training are inseparable. The efficacy of in-house training will be recognized only when the contents of in-house training are relevant to and can be utilized for company diagnosis and guidance (on-the-job training). Thus, in-house training empowers the KU members to prepare for the next training. In other words, in-house training and on-the-job training are intertwined, creating synergistic effects.

## **2-3. Recommendations for dissemination of KAIZEN**

As discussed in this chapter, the KAIZEN Project produced various outputs. The government of Ethiopia plans to establish the EKI which promotes and disseminates KAIZEN all over the country. The EKI will employ new Ethiopian consultants and conduct consultations with both LMEs and MSEs. JICA plans to start a new project to enhance the EKI's capacity for nationwide dissemination of KAIZEN, based on the request by Ethiopian government.

In the final section, some critical issues and recommendations for dissemination of KAIZEN are discussed in line with lessons learnt from the KAIZEN Project.

### **2-3-1. Further capacity development of KU members**

The decisive factor for the success of the KAIZEN Project was the strong leadership provided by the capable KU leader together with the excellent team of the nine KU members. All KU members are now capable of developing themselves further as KAIZEN consultants. The KU members who have acquired knowledge and skills of KAIZEN are expected to be the core members of the EKI and continue their activities in order to become the trainers in the training of KAIZEN teachers. In order to enhance the excellence of the KU members as KAIZEN consultants, they should have continuous exposure to actual workplace experiences. It is critically important that KU secures ways in which the KU members expose themselves to

actual workplace situations as much as possible in order to experience KAIZEN activities in solving actual problems in the workplaces. Therefore, KU (or future EKI) should organize itself to enable the KU members to accumulate workplace experiences, and at the same time should develop new tools and methods that are needed in the workplaces they help.

### **2-3-2. Future expansion of KAIZEN guidance methodology**

The KAIZEN guidance methodology established in the pilot project focuses on “workplace KAIZEN” because it is the basis and the common ground of all KAIZEN activities. The pilot project was able to formulate a standardized, common methodology of KAIZEN guidance by focusing on “workplace KAIZEN.”

In the future KAIZEN dissemination in Ethiopia, the present KAIZEN guidance method should be expanded in two ways. One is expansion in the entry paths to KAIZEN activities for wider scope of industry sectors by way of customization for MSEs and possibly for areas of unique types of production. For example, the KAIZEN manual and the audio-visual materials prepared by the Project should be developed for all Ethiopian industries to introduce KAIZEN.

The other is enhancement in providing support for management capabilities in association with the advancement of KAIZEN activities, which are the fundamental enablers on recurrent KAIZEN agenda: business planning, cost accounting and operation data, and trust and empowerment. Thus, a management framework of KAIZEN guidance should be developed to support companies with their capabilities in the fundamental enablers.

### **2-3-3. Dissemination of KAIZEN activities**

Mind-set is key factors for dissemination of KAIZEN activities. The KAIZEN Project focused on workplace KAIZEN. It is in part an answer to improving employee motivation. However, challenges will lie ahead in more basic parts of mind-set and attitude that are deeply rooted in the societal norms or culture. They may include teamwork spirit that promotes collaboration in creating rules,



respecting and observing the rules and improving the rules. These issues related to mind-set and attitude may be pursued in the context of KAIZEN promotion framework, in collaboration with relevant organizations and KAIZEN national movement.