

KAIZEN in Africa: towards Industrial Development

JICA-ACET Information Seminar

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Japan International Cooperation Agency

Outline

1. KAIZEN and JICA's Cooperation

2. JICA KAIZEN Project in Ethiopia

3. Other examples on KAIZEN in Africa

4. Wrap up

1. KAIZEN and JICA's Cooperation



KAIZEN - spread in the world

Kaizen has spread among Japanese companies in Japan and abroad. JICA has also offered assistance for KAIZEN to many developing countries in Asia, Latin America, Eastern Europe and now in Africa!

"5S" in many languages

French

1. Trien - Débarrasser
2. Etablir - Ordonner
3. Lustrer
4. Standardiser
5. Permettre

Hindi

1. साठन
2. व्यवस्था
3. सफाई
4. स्वच्छता
5. अनुशासन

Spanish

1. Descarte
2. Orden
3. Limpieza
4. Estandarización
5. Disciplina

Indonesian

1. Ketertarikan
2. kerapian
3. kebersihan
4. ketertarikan
5. kedisiplinan

Arabic

1. تصنيف
2. ترتيب
3. نظيف
4. توحيد المعايير
5. الإنضباط

Turkish

1. Sınıflandırma
2. Düzenleme
3. Standartlaştırma
4. Temizlik
5. Disiplin

Amharic

1. ግጥሞች
2. ግለሰቦች
3. ግፅግፍ
4. ግለሰብ
5. ግዛብ

Vietnamese

1. Sàng lọc
2. Sắp xếp
3. Sạch sẽ
4. Chuẩn xác
5. Sẵn sàng

Thai

1. สะสาง
2. สะดวก
3. สะอาด
4. สดวกและ
5. สร้างนิสัย

Croatia Montenegro Serbia Bosnia

1. Definicija
2. Uredenje
3. Čišćenje
4. Standardizacija

Khmer

1. សម្រិតសម្រាប់
2. សណ្តាប់ធ្នាប់
3. ស្អាត
4. ស្តង់ដារ
5. ស្មើគ្នា

Portuguese

1. Senso de utilização
2. Senso de ordenação
3. Senso de limpeza
4. Senso de normalização
5. Senso de autodisciplina

English

1. Sort
2. Set
3. Shine
4. Standardize
5. Sustain

Swahili

1. Susumbua
2. Seti
3. Safisha
4. Sanifisha
5. Shikilia

Source: JICA's World No.28 (2010)



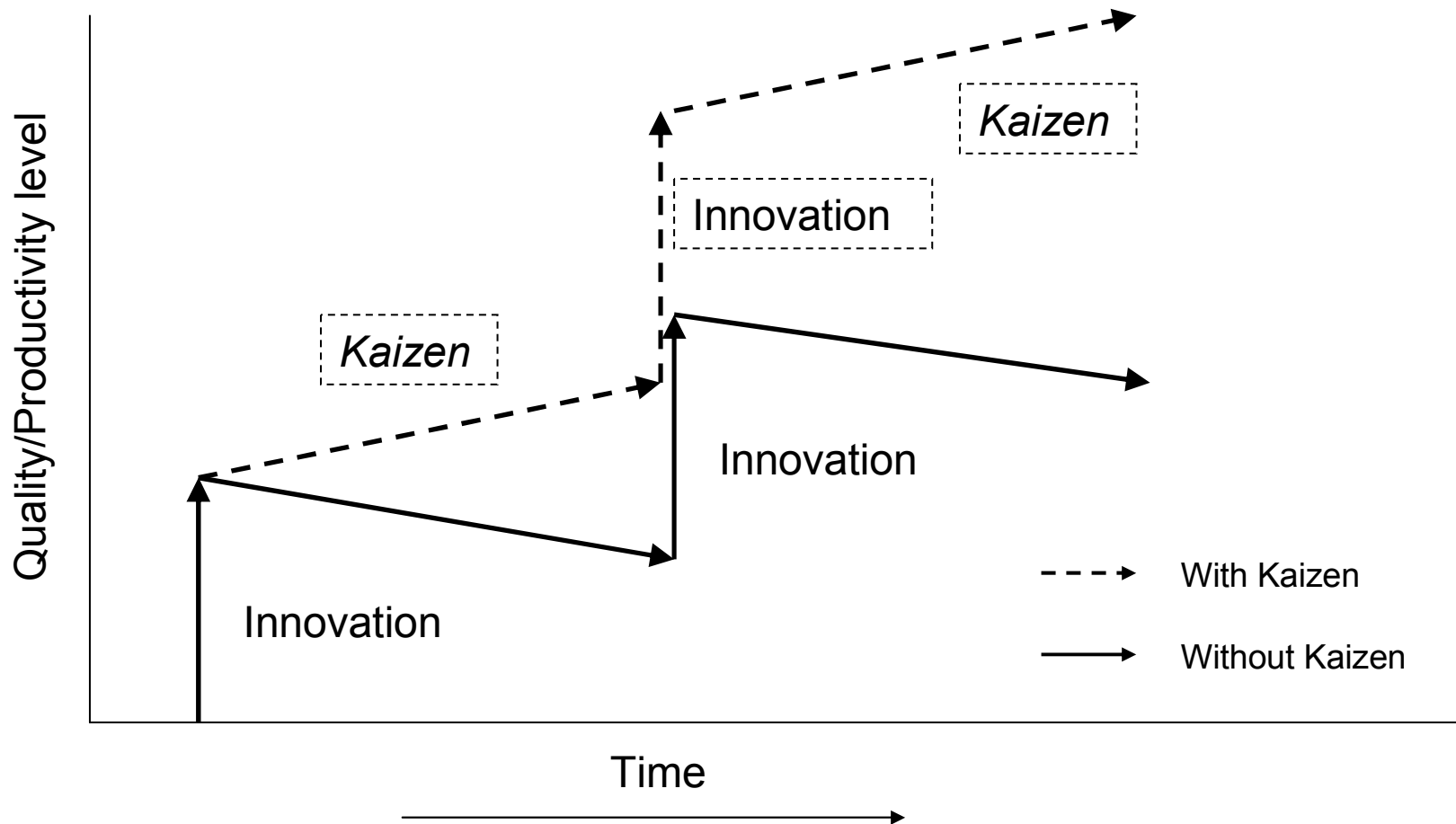
1.Seiri(Sort) 2.Seiton(Set) 3.Seiso(Shine) 4.Seiketsu(Standardize) 5.Shitsuke(Sustain)

What is KAIZEN?

- Simply a word which means “improvement” in Japanese
- Incremental and continuous improvement with the involvement of entire workforce
- Quality and Productivity Improvement
- Without additional cost: “If no money, use your brain.”
- Participatory process and bottom-up from factory floors (*gemba*)
- Emphasis on process as well as results
- Idea of Kaizen is embedded in Japanese work style as well as daily life

Kaizen and Innovation

- Kaizen and innovation complement each other.



Source: Imai (undated), Ueda (2009)

KAIZEN tools

Kaizen Umbrella



KAIZEN tools

5S	<ul style="list-style-type: none"> ○For working environment improvement ○(1) <i>Seiri</i> (sort), (2) <i>Seiton</i> (set), (3) <i>Seiso</i> (shine), (4) <i>Seiketsu</i> (standardise), (5) <i>Shitsuke</i> (sustain) ○Philosophy and checklist for good housekeeping ○A variety of translation in English and other languages
Muda dori	<ul style="list-style-type: none"> ○For problem finding and countermeasures ○Elimination of <i>muda</i> (waste) ○7 types of <i>muda</i>: (1) overproduction, (2) inventory, (3) repair/rejects, (4) motion, (5) processing, (6) waiting and (7) transport

KAIZEN tools

<p>QC 7 Tools</p>	<ul style="list-style-type: none"> ○For problem analysis and countermeasures ○(1) Pareto Chart, (2) Fishbone Chart, (3) Histogram, (4) Graph / Control Chart, (5) Check Sheet, (6) Scatter Diagram, (7) Stratification
<p>QC Circle</p>	<ul style="list-style-type: none"> ○For sustainable improvement and entire involvement ○Small groups who collectively find a problem, discuss alternative remedies, and propose a solution
<p>Suggestion Box</p>	<ul style="list-style-type: none"> ○For sustainable improvement and entire involvement ○Suggestion system for bottom up

KAIZEN tools

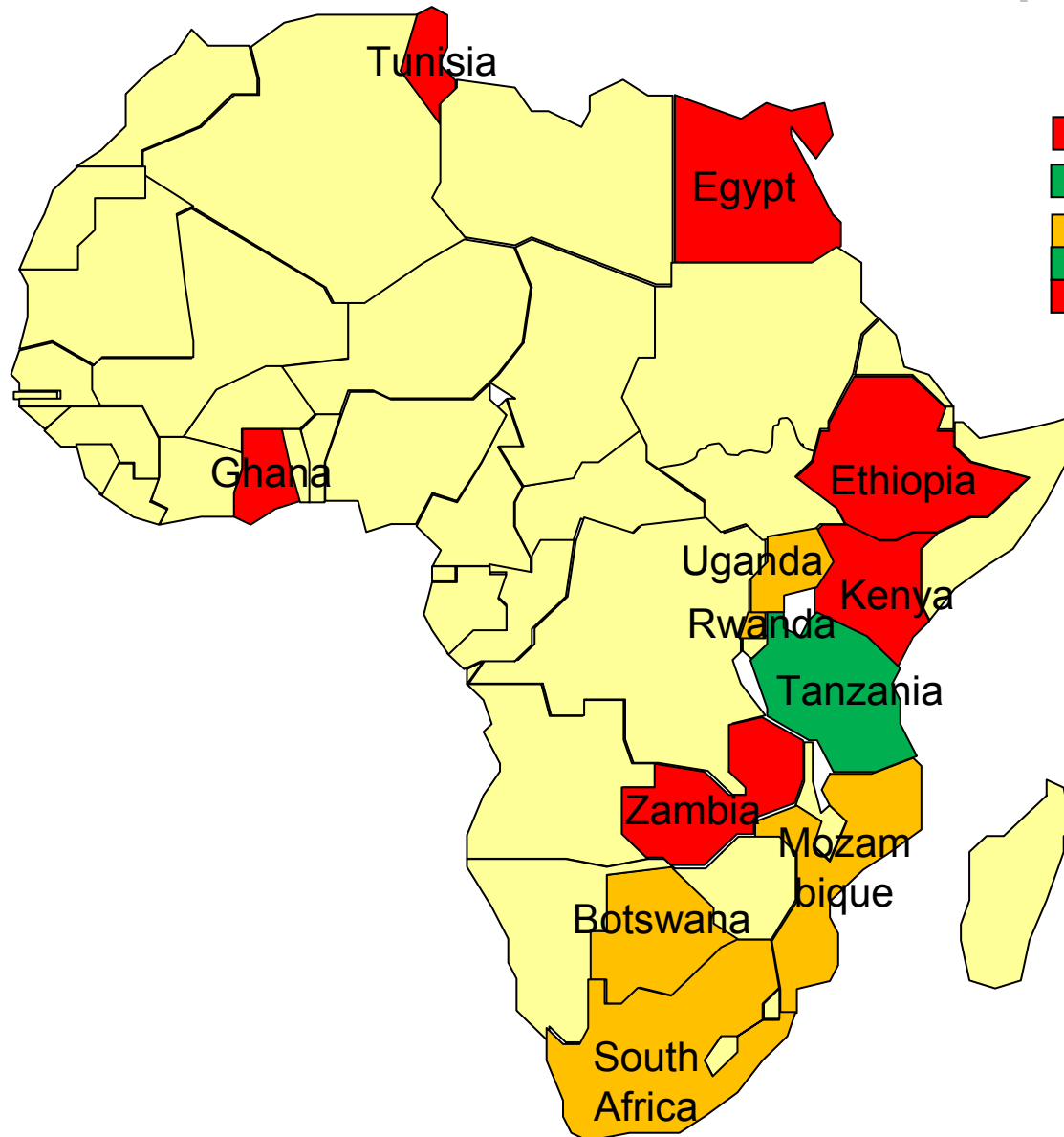
TQM	○Total Quality Management
TPS	○Toyota Production System
JIT	○Just-in-time System (a part of TPS)
Kamban	○Signboard: A system/tool for JIT
SMED	○Single Minutes of Exchange of Die
...and many more	



JICA's assistance in Kaizen

- Beginning with the project for Singapore in 1983
- Spread from Asia to Eastern Europe, Latin America and Africa
- JICA has assisted in capacity development of quality/productivity organisations
 - Singapore, Hungary, Brazil, Egypt, Ethiopia etc.
- Pilot/demonstration + action planning: Tunisia, Ethiopia
- Regional: Central America - Costa Rica
- African Union Commission (requested)
- Others
 - As a component of industrial development project
 - In various sectors: from manufacturing to service such as hospital, electricity and public services
 - Individual experts and senior Volunteers
 - Group training in Japan and third-country training (Malaysia etc.)

JICA KAIZEN assistance spread in Africa



LEGEND

- Project implemented/ing
- Project officially requested
- MPC course participated
- (only for Sub-Saharan)

(In addition to the individual countries, African Union Commission is requesting for JICA assistance on Kaizen)

Various backgrounds/elements for KAIZEN in Africa (1)

i. Policy support and initiative

- National mid-term plan, industrial strategy ...
- Ethiopia: H.E. Prime Minister's strong initiative

ii. Implementing/related ministry/agency

- Ministry of Industry: most often observed
- Ministry of Trade: international competitiveness
- Ministry of Labour: productivity movement
- Ministry of Education: TVET system
- Ministry of Health: hospital
- Agencies/Centres: Productivity Centre, Development Agency (Zambia ZDA), Small enterprise development agency (Ghana NBSSI) ...
- Specially established organisation: Productivity Centre, Kaizen Centre, Kaizen Unit (Ethiopia, Tanzania), Kaizen Institute (Ethiopia, Zambia) ...

Various backgrounds/elements for KAIZEN in Africa (2)

iii. Target sector/size

- Sectors: Manufacturing, others (service, public, hospital ...)
- Sub-sectors: Metal, agro, food, textile, leather ...
- Size: Large, medium, small and micro

iv. Existing mechanism

- BDS provider/facilitator
- Productivity Centre
- Management consultant: public, private
- Private sector organisation

v. Contents of KAIZEN programme

- 5S, Muda elimination, QC Circle ...
- OJT, TOT, pilot project, seminar/workshop ...



2. JICA KAIZEN Project in Ethiopia

KAIZEN in Ethiopia (Phase I & II)

Industrial Policy Support to Ethiopia – Background

TICAD IV
(May 2008)

**G8 Hokkaido
Toyako Summit**
(Jul. 2008)

**“The Initiative for
Policy Dialogue
(IPD)
Taskforce on Africa
Meeting” in Addis
Ababa (Jul. 2008)**

**Symposium
: Economic
Development in Africa
and the Asian Growth
Experience**
(May 2008)

● Debate on how to
make the Asian
Experience relevant with
accelerating economic
growth in Africa

● Debate on a
more active role of
the government in
economic policies
● Introduction of
JICA’s KAIZEN
Project in Tunisia

JICA’s Follow up of
Japan’s Commitment to Africa

JICA's Cooperation Framework for Industrial development of Ethiopia

Request from Prime Minister Meles (July 2008)

Support to formulate industrial development policy for Ethiopia

Intellectual exchange of views on industrial development strategy, and policy recommendations from Japan based on the Asian development experience.

Support to nurture private companies

Technical cooperation of JICA for enhancing competitiveness of the private sector learning from the JICA's experience in Tunisia.

In parallel

“Policy Dialogue on Industrial Development”

(1st Phase: Jun. 09-May 2011)

“The Study Project on Quality and Productivity Improvement (KAIZEN)”

(Pilot Phase: Oct. 09-Jun.11)

Ethiopia KAIZEN Project Phase I (2009-11)

Profile of the project

1. Name: The Project on Quality and Productivity Improvement (Kaizen) in Ethiopia
2. Objective:
 - To formulate a national plan for enhancing activities on quality and productivity improvement for Ethiopian enterprises in industrial sector
 - To formulate a manual for explaining and guiding the quality and productivity improvement activities
 - To transfer relevant skills and techniques to the staff members of the Kaizen Unit, Ministry of Industry
3. Period:
2 years (August 2009~June 2011)
4. Implementing Institutions:
 - Ministry of (Trade and) Industry (MoTI/MOI) of Ethiopia
 - Japan International Cooperation Agency (JICA)



Ethiopia KAIZEN Project Phase I (2009-11)

Major activities

Stage 1	<ul style="list-style-type: none">• Situation analysis on quality/productivity improvement activities / Visit to factories for preliminary diagnosis• Preparation for the pilot project (Kaizen methodology selection, selection of 30 pilot companies with criteria)
Stage 2	<ul style="list-style-type: none">○ Implementation of the pilot project<ul style="list-style-type: none">a. to visit the pilot companies to diagnose the situation, and to give guidance on the quality and productivity improvement activity (KAIZEN) with the staff members of the Kaizen Unit, MoTIb. to repeat factory visit periodically and give KAIZEN advice and to monitor the KAIZEN processc. to evaluate the pilot project and compile recommendations to the factories
Stage 3	<ul style="list-style-type: none">• Formulation of a National Plan including an Action Plan of KAIZEN• Formulation of a Manual

Ethiopia KAIZEN Project Phase I

some of the achievements obtained in the 30 pilot companies

Fig.1 Sort, Set-in-order & Shine (3S) are implemented to standardize the inventory stock

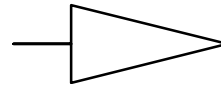
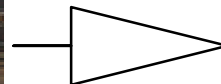


Fig. 2 In-process stock is repositioned to avoid **Muda of transportation**



Before Kaizen

After Kaizen

Ethiopia KAIZEN Project Phase I

Sample Improvement Results at 30 Pilot Companies

Qualitative Results:

- Clean working environment created,
- Team work and motivation of workers developed,
- Health and occupational safety of workers improved,
- Lower level workers accustomed to suggesting improvement ideas to management decisions – Increased Employee Participation,
- Knowledge obtained on how to meet quick delivery and to reduce costs.

Ethiopia KAIZEN Project Phase I

Sample Improvement Results at 30 Pilot Companies

Quantitative Results

✓ Monetary impact from the improvements reported is USD 30,000/company. The reporting ranges from USD 600 to USD 190,000. Example includes:

- By **Reducing costs** (a) USD 600/month and (b) USD 4,600/year;
- By **generating additional income** of USD 70,000/year;
- By **just decreasing down time** USD 12,000,
- By **rectifying raw materials defect** used for manufacturing USD 140,000;
- By **identifying, repairing and reusing** of usable **machines & equipment** worth of USD190,000.

✓ Non-Monetary Measures of Improvement include:

- Increasing labor productivity, by **reducing time loss for searching** tools on average 50%;
- Reduction of floor space around 50%;
- **Defect ratio improvement** in the range of 50-70%;
- **Lead time improved** in the range of 16 to 90%;
- **Labor saved** from 15 to 90%.

Note: originally calculated in Ethiopian currency Birr (ETB) and converted into USD at the rate: USD1 = approx. ETB 17

Ethiopia KAIZEN Project Phase I

Sample Improvement Results (3)

Quantitative Results (examples)

➤ Company A (Metal)

Recovered additional revenue with an amount of 118,995 birr

➤ Company B (Metal)

Lead time reduced from 2weeks to 1week

➤ Company C (Textile)

Reduced wastage of time by 624 min/month

➤ Company D (Chemical)

Reduced wasters of over production by 50%

Motion and movement by 100%

➤ Company E (Agro)

Decreased flour wastage by 190 qtl of wheat flour

➤ Company F (Agro)

Produced additional 12,000 lit/day

By eliminating 6hours dawn time/day

➤ Company G (Agro)

By decreasing milk wastage recovered 846 birr/day



Ethiopia KAIZEN Project Phase I

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		

Ethiopia KAIZEN Project Phase II

Project on Capacity Building for Dissemination of Quality and Productivity Improvement (KAIZEN)

1. Project Purpose:

- The system is established to disseminate quality and productivity improvement (KAIZEN) to private enterprises in a sustainable manner.

2. Period:

3 years (November 2011 - November 2014)

3. Implementing institutions:

- Ethiopian KAIZEN Institute (EKI: gazetted and established in October 2011, based on the Phase I Project), Ministry of Industry
- Japan International Cooperation Agency (JICA)

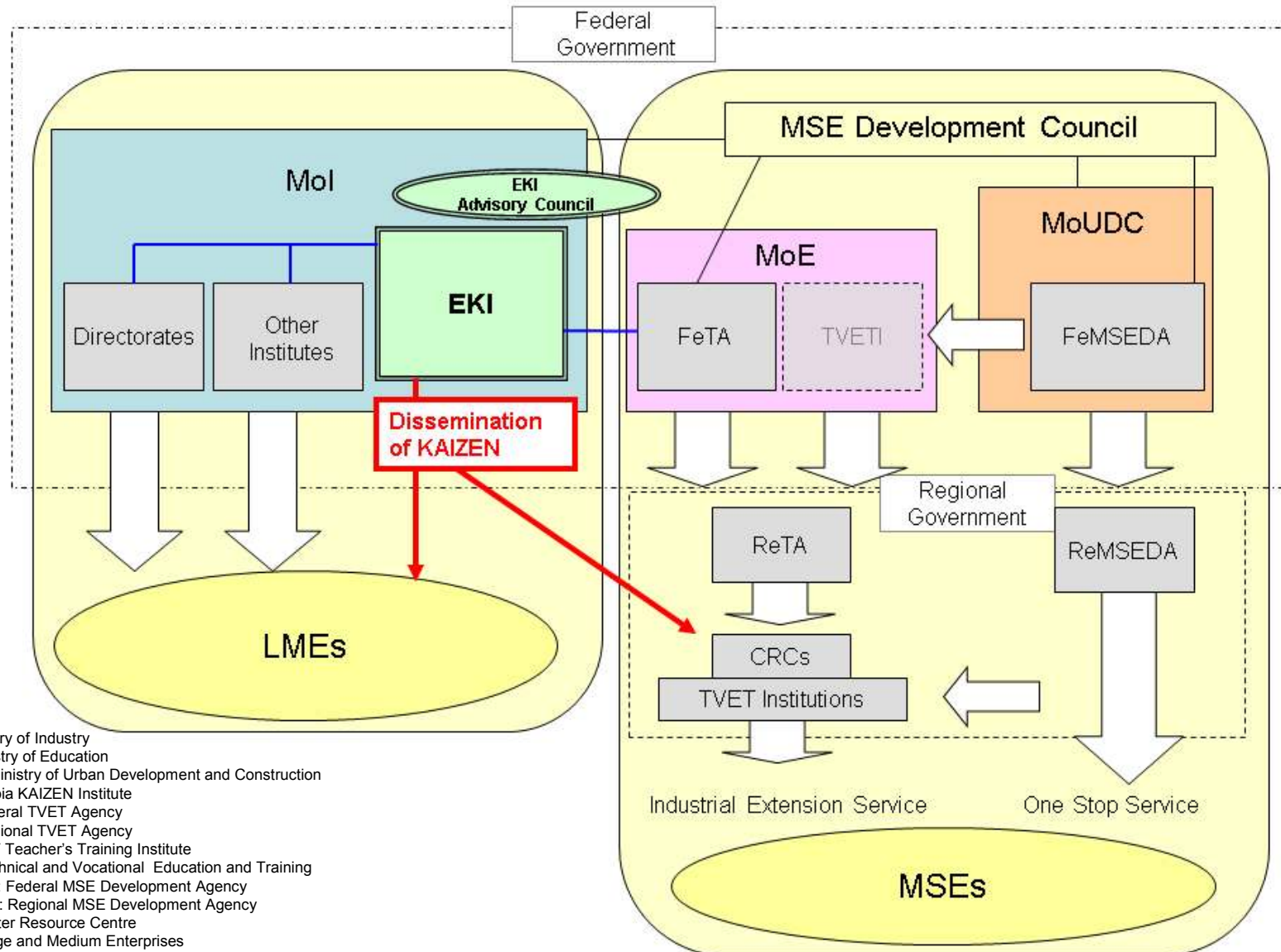
Ethiopia KAIZEN Project Phase II

Comparison between Phase I and Phase II

	Phase I	Phase II
Stage	Planning with pilot project	Dissemination
Implemented by	Kaizen Unit (KU)	Ethiopian Kaizen Institute (EKI)
Target	Large and Medium Enterprises (LMEs)	LMEs + Micro & Small Enterprises (MSEs)
Area	Addis Ababa and surroundings	All Ethiopia
Period	2009-11 (2yrs)	2011-14 (3yrs)
Scheme	Technical Cooperation for Development Planning	Technical Cooperation Project

Ethiopia KAIZEN Project Phase II

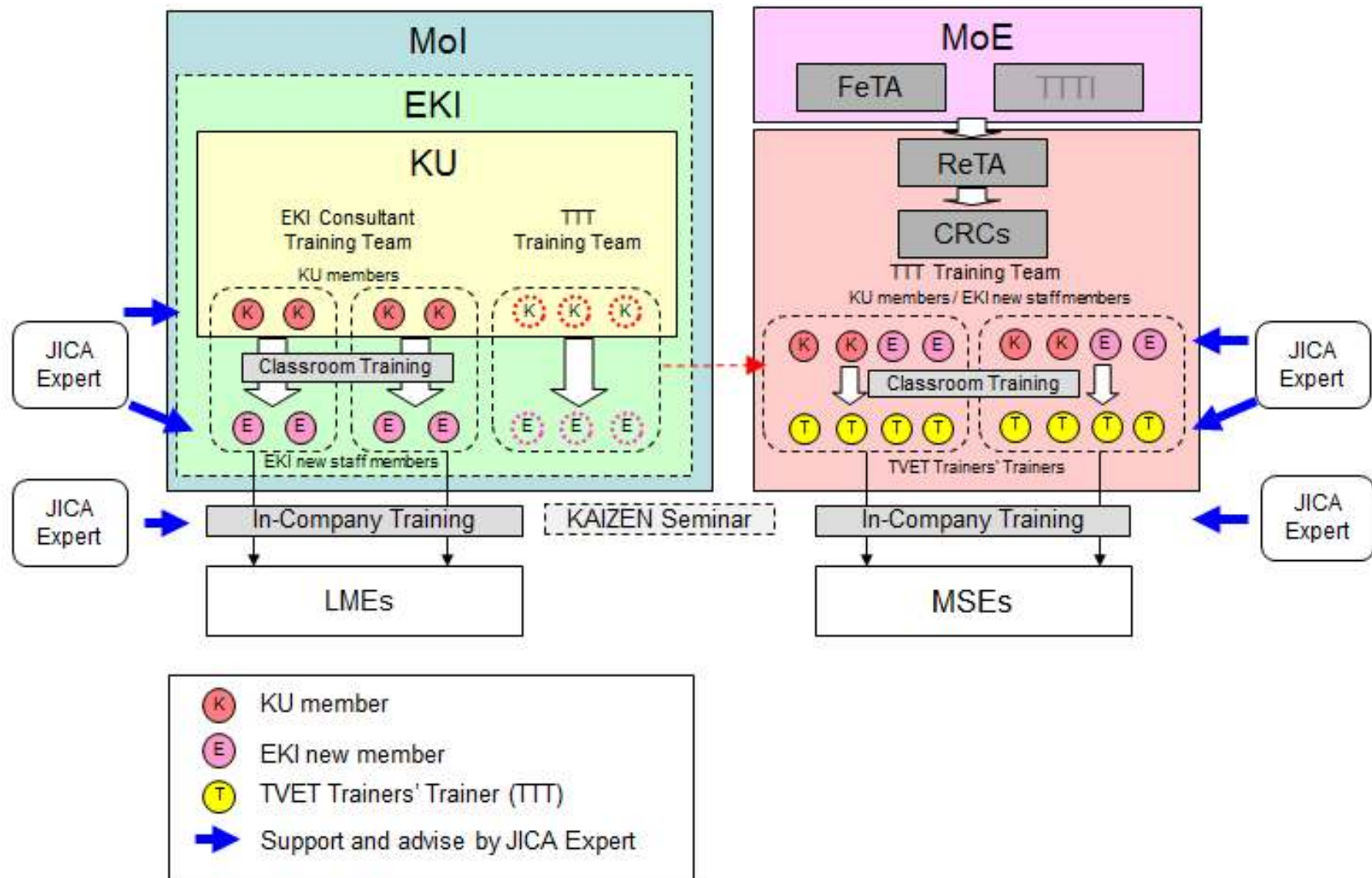
Enterprise supporting system for LMEs and MSEs



MoI: Ministry of Industry
 MoE: Ministry of Education
 MoUDC: Ministry of Urban Development and Construction
 EKI: Ethiopia KAIZEN Institute
 FeTA: Federal TVET Agency
 ReTA: Regional TVET Agency
 TTTI: TVET Teacher's Training Institute
 TVET: Technical and Vocational Education and Training
 FeMSEDA: Federal MSE Development Agency
 ReMSEDA: Regional MSE Development Agency
 CRC: Cluster Resource Centre
 LMEs: Large and Medium Enterprises
 MSEs: Micro and Small Enterprises
 TTT: TVET Trainers' Trainer

Ethiopia KAIZEN Project Phase II

Planned KAIZEN dissemination structure



3. Other examples on KAIZEN in Africa



Ghana – KAIZEN as a part of a project for MSE development

Project for Formulating a Strategic Model for Quality / Productivity Improvement through Strengthening BDS for MSEs

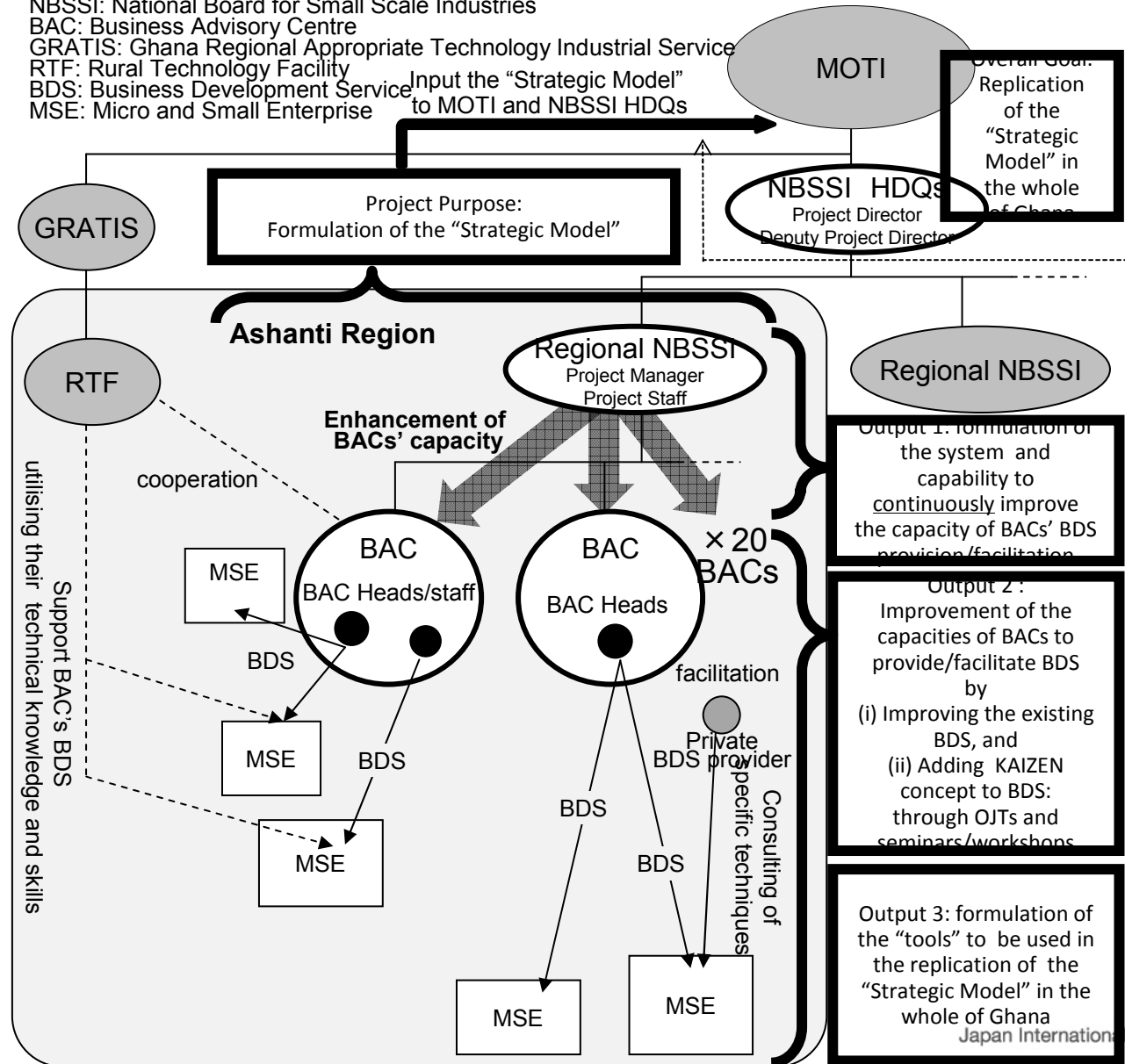
- Project period: April 2012 – April 2015 (3 years)
- Implementing agency: National Board for Small Scale Industries (NBSSI), Ministry of Industry and Trade
- Utilising and Capacity building of Business Advisory Centres (BACs) and its network
- Target area: Ashanti Region
- Overall Goal: Replication of the “Strategic Model” in the whole of Ghana
- Project purpose: formulation of the “Strategic Model”
- Function of BDS provision/facilitation
- Some Kaizen experiences in Ashanti in the past
- Kaizen as an additional tool of BDS / as a way of thinking



Implementation image of Ghana Project



MOTI: Ministry of Trade and Industry
 NBSSI: National Board for Small Scale Industries
 BAC: Business Advisory Centre
 GRATIS: Ghana Regional Appropriate Technology Industrial Service
 RTF: Rural Technology Facility
 BDS: Business Development Service
 MSE: Micro and Small Enterprise





Kaizen in Zambia

- Started in 2009 with the QC Circle based approach, wider and growing participation of companies / organisations: manufacturing, non-manufacturing and public institutes
- **1st Zambia National KAIZEN Conference** (12-13 Feb 2010)
 - 9 teams from 6 organisations participated
 - 18 QCCs in 4 public, 5 QCCs in 4 non-manufacturing and 20 QCCs in 5 manufacturing in operation in 2010
- **2nd Zambia National KAIZEN Conference** (18-19 Feb 2011)
 - 20 teams from 9 organisations participated
 - 44 QCCs in 12 public (ministries, local councils, colleges), 23 QCCs in 5 non-manufacturing (finance, school, water supplier) and 19 QCCs in 8 manufacturing (various) in operation in 2011
- Participated in **36th International Convention on Quality Control Circle (ICQCC)** on 11-14 Sep 2011 in Japan (possibly first presentation from Africa)

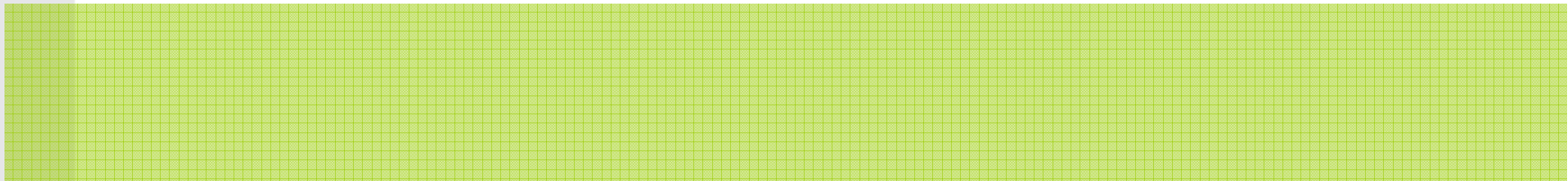
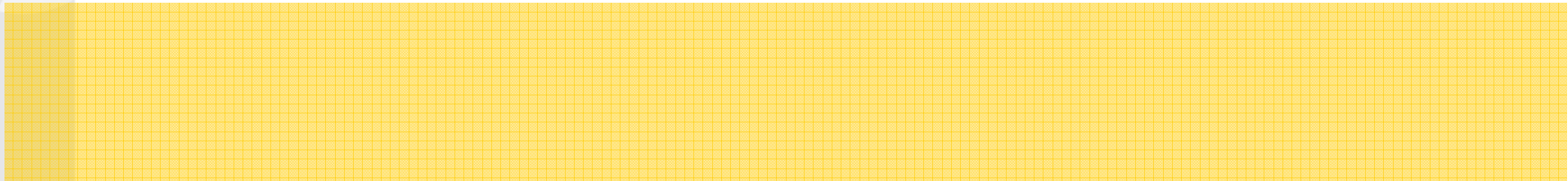
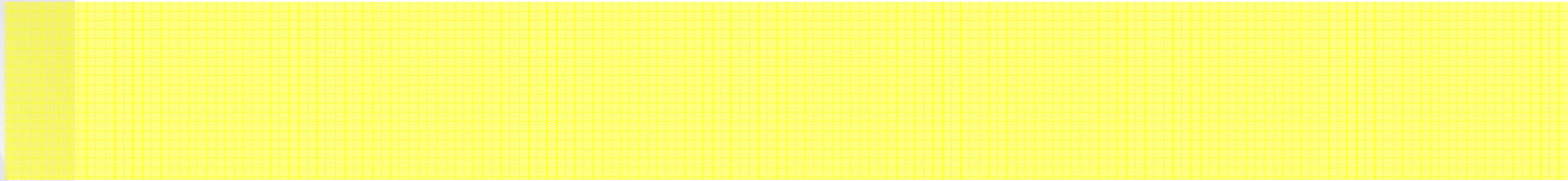


Kaizen in Zambia

- 3rd Zambia National KAIZEN Conference (16-18 Feb 2012)
 - 30 teams from 19 organisations participated
 - 30 QCCs in public, 17 QCCs in education, 16 QCCs in general services and 18 QCCs in manufacturing



- Currently under the framework of “Zambia Investment Promotion Project - Triangle of Hope”
- Zambian Government sets up “Kaizen Institute of Zambia (KIZ)”
- A JICA technical cooperation project to support KIZ and disseminate Kaizen is under formulation in response to the official request by Zambian Government.



4. Wrap up

Wrap up - Implication

- How Kaizen spread in the world and Africa: various practices/lessons available in the world
- Kaizen is: mindset, philosophy, way of thinking
↔ tool, technique, methodology
- Involvement of top management (country, company)
- Process-oriented, practical, field-oriented, implementation
- Sustainability – Self-sustainable
- Learning process and customisation
- Complementarity with policy dialogue

Thank you



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