

Working Group 1&3

Summary of the Activities of the first half of the year 2022 for AKAC 2022

4th October 2022

Chair of WG 1&3
Mr. Hosni Belhadj, CETIME, Tunisia

Design for Pilot Program for WG 1

Activities	<ul style="list-style-type: none">• The survey team is visiting the selected country to assist them set up the certification system.
Duration	<ul style="list-style-type: none">• About 3 weeks x 3 times visit by JICA survey team until October 2023
Evaluation	<ul style="list-style-type: none">• The findings will be reflected to the contents of the “guidelines”
Input	<ul style="list-style-type: none">• Dispatching JICA survey team• Technical assistance to set up the certification system in the selected country• Various cooperation from the selected country to set up the certification system• Commitments to set up the fee-based Kaizen training/consultancy
Outputs	<ul style="list-style-type: none">• Draft of the “guidelines”• Standardized exam collection based on the standardized curriculum as the output of WG2

Kaizen Handbook



“After a series of training was completed, recognition should be made to confirm that a person is qualified as a Kaizen Trainer having experience and skills required to provide Kaizen guidance for companies. “

Source: JICA Kaizen Handbook (p. 3-21)

Table 3.7-2 Recognition Requirements for Basic Trainers and Advanced Trainers

CRT	Attendance ratio : 90% or more; Written examination : 65 marks or more
ICT	Number of pilot enterprises to give <i>Kaizen</i> guidance : 5 enterprises or more for both Basic Trainers and Advanced Trainers Number of visit to pilot enterprises: (1) Visits together with an expert: 80% or more; (2) Visits by Basic Trainers or Advanced Trainers alone: more than once /month for each enterprise Number of <i>Kaizen</i> guidance cases: Two or more per enterprise Report submission for each visit : 100% Case sheet submission: one or more case sheets /each enterprise
Skill Level	Evaluation by skill map :3.5 points or more on average; 2.0 point or more for all skills in selected skills
Training Period	Training Period : (1) Basic Trainers : 6 months (2) Advanced Trainers : 1 year (after certified as <i>Kaizen</i> Trainers) Attendance for regular meetings with an expert: 70% or more

Source: JICA Study Team

Table 3.7-3 *Kaizen* consultants Titles and qualification requirements

Title	Requirements
Principal <i>Kaizen</i> Consultant	<ul style="list-style-type: none"> To complete Basic and Advanced <i>Kaizen</i> courses and have <i>Kaizen</i> consulting experience of over 5,000 hours. To pass the written and oral examinations.
Senior <i>Kaizen</i> Consultant	<ul style="list-style-type: none"> To complete Basic and Advanced <i>Kaizen</i> courses and have <i>Kaizen</i> consulting experience of over 3,000 hours. To pass the written and oral examinations.
<i>Kaizen</i> Consultant	<ul style="list-style-type: none"> To complete Basic and Advanced <i>Kaizen</i> courses and have <i>Kaizen</i> consulting experience of over 1,000 hours. To pass the written and oral examinations.

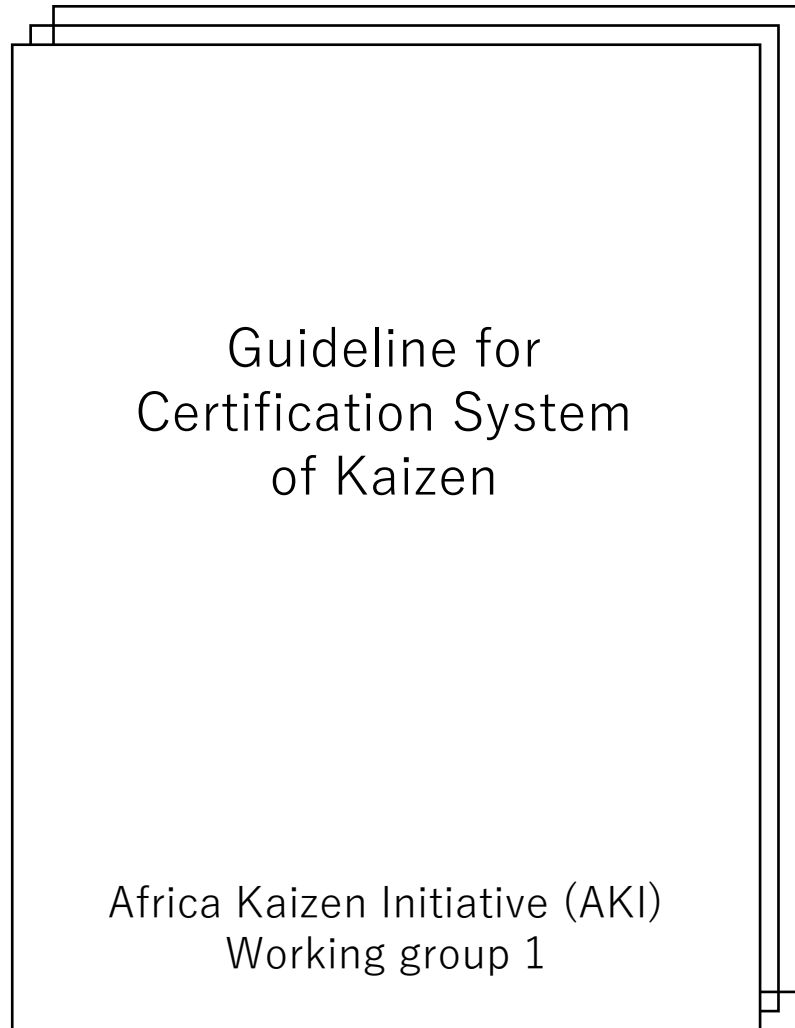
Source: JICA Study Team

Challenges

“This is a proposal as of preparation of this handbook and an actual certification system to be developed may be different: For example, **a uniform certification system in Africa might be developed in the future.**”

Source: JICA Kaizen Handbook (p. 3-21)

Expected output of WG1



Objective

Developing a certification guideline that can be referenced by African countries which implement Kaizen and newly introduce a certification system for Kaizen trainers/consultants.

Structure (Tentative)

1.	Introduction
2.	Case study (member countries' case)
3.	Suggestion for developing certification system => Extracting key elements from the case study (<u>Not for unifying or standardizing the certification system</u>)
4.	Summary

Design for Pilot Program for WG 3

Activities	<ul style="list-style-type: none">• The survey team is visiting the recommended companies in the selected countries to check the KPI sheet will be properly used and check the accuracy of the sheet.
Duration	<ul style="list-style-type: none">• 3 weeks x 3 times by JICA survey team until October 2023
Evaluation	<ul style="list-style-type: none">• The survey team will check the availability & accuracy of the current “semi-finalized” KPI sheet and finalize it based on the pilot activities
Input	<ul style="list-style-type: none">• Dispatching JICA survey team• Recommendation of the companies to be visited from the selected countries• The selected pilot countries are kindly required to make the trial of the KPI sheet before the survey team visits.
Output	<ul style="list-style-type: none">• Finalized version of KPI format• Finalized version will be converted into the could data base style for the easy usage if the survey budget allows.• Summarized data will be used for Africa Kaizen White Paper

Theme (WG) 3: Common KPIs

-How to express the Kaizen effect by financial figure-

1st approach to see the Kaizen effect for the profit.
- If we can know the Gross Profit, we can calculate the profit improvement -

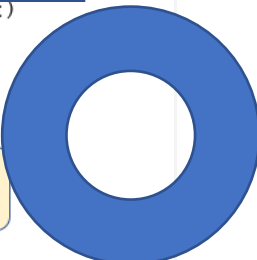
Approach 1

Productivity Improved ratio
x Cover Ratio x GP

(Total impact to entire company) X (Total GP) = (Total Improved Profit)

Point 3

Can we get Gross Profit of the company?
Pouvons-nous obtenir le bénéfice brut de l'entreprise?



2nd approach to see the Kaizen effect for the profit.
- If we can know the Wage Rate, we can simply calculate the profit improvement! -


Approach 2

WAGE Rate

Point 4

It's difficult to get Wage Rate. (Usually, small company does not have...)
Il est difficile d'obtenir le taux de salaire. (Habituellement, une petite entreprise n'a pas...)

Wage Rate: Added value amount that direct workers should create per...
Wage Rate = (Yearly Marginal Profit) / (Yearly total direct worker's M...)
(Marginal Profit : Net sales - variable cost)



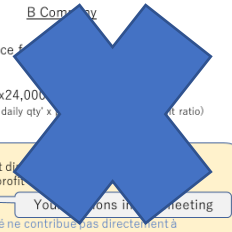
Approach 3

Productivity Improved ratio x
Unit Price

Point 5

1. Actually, there is a limit to demand, so productivity improvement does not directly contribute to sales improvement, it is far from the increase in profit.
2. Even if it contributes to sales improvement, it is far from the increase in profit.
3. Knowing the unit price is difficult.

1. En fait, il y a une limite à la demande, donc l'amélioration de la productivité ne contribue pas directement à l'augmentation des ventes.
2. Même si cela contribue à l'amélioration des ventes, c'est loin de l'augmentation du profit.
3. Connaître le prix unitaire est difficile.




Approach 4

GP/M-H

Point 6

There are factors other than Kaizen effect



It's difficult to obtain required unit price

There are factors other than Kaizen effect

Format to calculate automatically into the Kaizen effect by financial figure

Company Information						
	Name	CODE				
Country	Republic of Tunisia	33				
Company	AAA company	33-00001				
Sector code	Manufacturing	1				
Manufacturing Subsector Code	Electronics	16				
Service Subsector Code	Service Subsector Code	Code				
	Item	Defintion				
Basic Condition	Minumum Wage/Hour	legal minimum wage	100	TND		
			3,934.00	JPY		
	Pilot Line coverage ratio	Gross profit base or Sales base	30%			
	Yearly Gross Profit	last year actual	1,000,000	TND		
Field	Item	Defintion	Condition Before Kaizen	Condition After Kaizen	Improvement ratio	Output/Input Units
Key Indicators of Pilot Line	Output	Qty',Number of Customer,CS,Sales etc.	800	1,200		Daily
	Input (M-H)	Man-Hour(M-H)	200	180		Daily
	Productivity(Output/M-H)		4.000	6.667	66.7%	
	Defect(%)	(Number of defect product/ Products Quantity)	5.50%	1.40%	-74.55%	
Sub indicaor of Pilot Line	Used Space	M ²	300	250	-50	
	Space-Productivity		2.67	4.00	133.3%	
						Time unit
	Lead Time(Factory-in to Factory-out)	Second,Minute,Hour,Day	7.200	2.880	60%	PLS INPUT
	Lead Time(Line-in to Line-out)	Second,Minute,Hour,Day	80	35	56%	PLS INPUT
	WIP(Qty')	The average number in the line	100	50	50%	
	7200	OEE	AvilabilityxPerformance xQuality	68.00%	83.00%	22.06%
Company -wise Sub indicators	Inventory (from B/S)	Inventory Amount in B/S	500,000	230,000		
	Yearly Net Sales	Net sales	2,000,000	2,000,000		
	Inventory Turnover(D/S)		91.3	42.0	54.0%	
	Return ratio(%)	The number of return product/shipped Qty'	8.50%	2.30%	72.94%	
	ES score(point)		45	65	44.4%	
	Yearly Incident	The number of insident in work site	10	2	80%	

GEMBA KPI

Pilot implementation undergoing for more improvements

KPI & Sub Indicator list				
	name	Code	Sector Code	Subsector Code
Country	Republic of Tunisia		33	
Company	AAA company	33-00001		1 16
Category	Item	Figure		
KPI A-1	Financial Improvement by Kaizen	472,080	JPY	
KPI A-2	Financial Improvement by Kaizen	7,868,000	JPY	
			Improvement ratio	
Key Indicator of Pilot Line	Productivity Improvemen(per M-H)	66.7%		
	Defect ratio improvement	74.5%		
Sub indicaor of Pilot Line	Productivity improvement(per Sapce)	60.0%		
	Lead time Reduction-1(F-in to F-out)	56.3%		
	Lead time Reduction-2(L-in to L-out)	50.0%		
	WIP Reduction			
	OEE improvement	22.1%		
Company -wise Sub indicators	Inventry Reduction	54.0%		
	Return Ratio	72.9%		
	Employee Satisfaction	44.4%		
	Incident(safety)	80.0%		

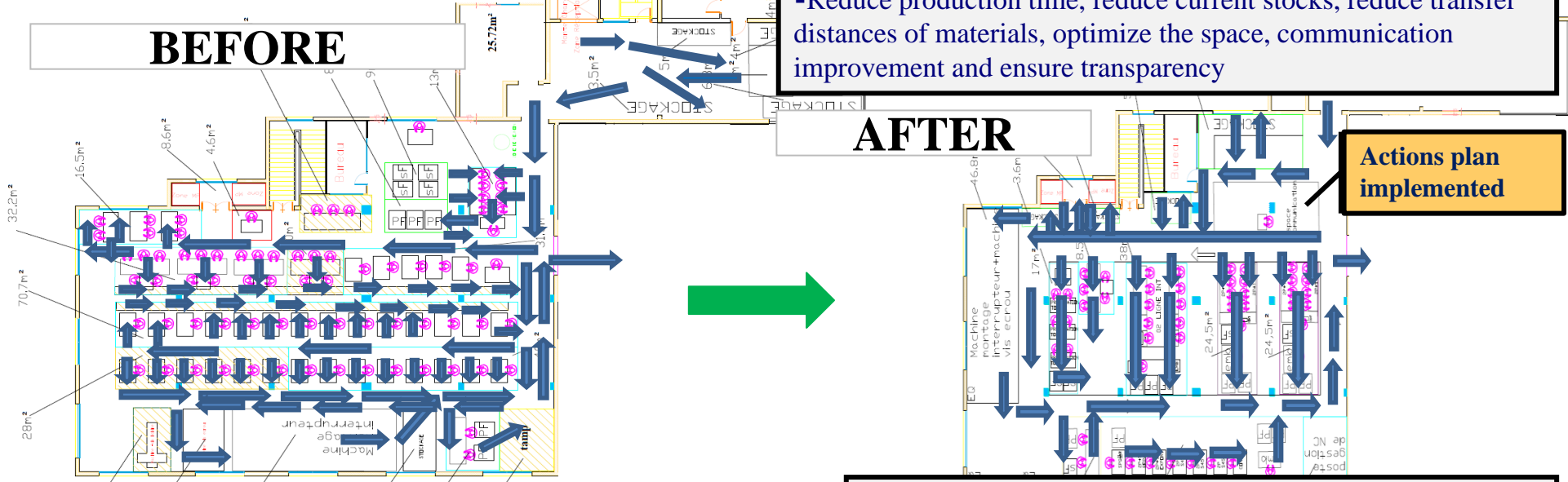
Financial effect of Kaizen

3. PRODUCTS / RESULTS OF THE KAIZEN ACTIVITIES : PRODUCTIVITY IMPROVEMENT

Project Title No. 01: Layout Improvement . **YEAR:** 2018
AREA: Electrical materials assembly workshop

THEME:

- Project in line with our strategic objectives
- Reduce production time, reduce current stocks, reduce transfer distances of materials, optimize the space, communication improvement and ensure transparency



Main problems & Mudras of the Initial situation :

- Low flexibility ;
- WIP is high;
- Space is not optimized ;
- Material flow is not clear ;

Actions plan defined and implemented :

- Re-design of production lines;
- Design of a new lay-out: inventory reconciliation materials to production lines.
- Conveyors elimination.

COUNTERMEASURES

INDICATORS	BEFORE	AFTER	% IMPROVEMENT
PRODUCTIVITY P / P / DAYS	950.17	975.72	+ 2.69%
OCCUPIED AREA (m2)	401,80	276.80	-31.11%
MOVING DISTANCE (m)	36.50	15	-58.90%
PRODUCTIVITY P / P / DAYS / M2	2.36	3.52	+ 49.06%
Work In Progress (PCS)	350.00	150.00	-57.14%
SUPPLY DISTANCE in m	79,00	21.50	-72.78%

Kaizen Monetary Effect report		Evaluation Id	E51-9
COMPANY	SOMEF-3	Country	Tunisia
	Country CODE:	51	
1-productivity-A			
When you don't have any financial figure, we will try to calculate monetary effect of M-H saving by following logic			
IN/OUT Data: OK	Wage Rate Data: OK		
1. Calculate the figure of saved M-H by each activity with the number of reduced M-H and improved output quantity $\{(inputted\ M-H/output\ Qty)_{before\ Kaizen} - (inputted\ M-H/output\ Qty)_A\} = (A)_n$			
2. Calculate accumulated saved M-H $A_1 + A_2 + A_3 + \dots + A_n = SUM(A)_n$			
	14.17	M-H	
3. Calculate total effective money from saved M-H a SUM(A)_n x Minimum Wage of each country = Effective profit by productivity improve			
	US\$16.00	Daily	

1-productivity-B	
If you have data of Gross Profit from financial data, you can estimate GP improvement from productivity improvement ratio.	
GP Data: No Data	
1. Cumulative productivity improve ratio with each weight	
	0.00 %
2. Calculate impact to improve gross profit = Effective profit by productivity improve	
	US\$0.00 Yearly
If you have data both A and B, depend on the utilization of the additional man-hour, you can choose A or B as monetary effect of the productivity improvement	

2-Inventory reduction	
If we have data about gross profit and inventory amount, we can calculate the monetary effect of inventory reduction by following Logic	
Sales Data: OK	Inventory Data: No Data
GP Data: No Data	
1. Reduced turnover (D/S: Daily Supply) $(Inventory\ Amount/Net\ sales)_{previous\ year\ end} - (Inventory\ amount)/ = (A)$	
	0.00 D/S
2. Calculate the profit that minimal amount of the currency of inventory earns in Gross Profit / Inventory amount/365	
	0.0000 TND
3. Calculate the effective profit which was made by inventory reduction activities (A) X (B) X Inventory Amount = Effective profit by inventory reduction	
	No Impact

3-Space Saving	
If we have data about gross profit and floor space (square meter), we can calculate monetary effect of space saving by following logic	
Floor Spac Data: OK	GP Data: No Data
Space Saving Data: OK	
1. Calculate the saved space by each activity	
	=(A) _n
2. Calculate accumulated saved space $A_1 + A_2 + A_3 + \dots + A_n = SUM(A)_n$	
	170.2 m ²
3. Calculate the profit earned per square meter in last year (Gross Profit) / Floor square meter	
	=(S) 0.00 TND
3. Calculate profit of using the saved space for other valuable job SUM(A)_n X (B) = Effective profit by space saving activities	
	US\$0.00 Yearly

4-Material Cost reduction	
If we have data of material cost reduction amount per unit, we can calculate monetary effect of material cost down by following logic	
Material Cost Data: OK	
1. Calculate reduced amount of material cost by multiplying each cost down a (cost down amount per unit) X (putup unit after Kaizen)	
	=(A) _n
2. pick up the output quantity after kaizen $A_1 + A_2 + A_3 + \dots + A_n = SUM(A)_n$	
	0 TND
3. Calculate total material cost reduction amount SUM(A)_n = Total material cost reduction amount	
	No Impact Monthly

KAIZEN Performance Report			
Company Name:	SOMEF-3		
Country:	Tunisia	Code:	51
Editor:	Manufacturing	Editor:	Kakiuchi
Sub Sector:	Electrical Product/Equipment	Create date:	2022/7/8

Total Company Kaizen Result				
	Before Kaizen	After Kaizen	Improvement ratio	Dif.
Gross Profit (each county's currency)				
Inventory Turnover(D/S)				
Return Ratio (%)				
Incident(Number of Case)				
Employee Satisfaction (ES Survey Score etc.)				

Pilot Line/Model Kaizen Result											
Pilot Produt/Line	Kaizen Item	Before Kaizen	Afetr Kaizen	Kaizen Ratio	Output Qty' after kaizen	Sub Total M-H saving	Sub Total Space Saving	Sub Total Mat. Cost Reduction	Productivity improvement Impact	Scope Ratio (Productivity)	Perid (Productivity)
No.1	Productivity	95.02 %	97.57 %	2.69 %	976	0.27			0		Daily
No.1	Space Saving	401.80	276.80	▲ 31.11 %	976		125.00		0		
No.1	WIP Reduction	350.00	150.00	▲ 57.14 %					0		
No.2	Productivity	0.80 %	0.88 %	9.93 %	123	13.90			0		Daily
No.2	Space Saving	70.70	49.00	▲ 30.69 %	123		21.70		0		
No.2	WIP Reduction	200.00	90.00	▲ 55.00 %					0		
no.3	Productivity	1.31 %	1.31 %	0.00 %	144	0.00			0		Daily
no.3	Space Saving	70.00	46.50	▲ 33.57 %	144		23.50		0		
no.3	WIP Reduction	150.00	60.00	▲ 60.00 %					0		

Total M-H Saving	14.17	M-H	Daily
Total Space Saving	170	m ²	
Total Mat.Cost Saving	0	TND	
Total Productivity improvement Impact	0	%	

Thank you so much for your attention !!