Organizing the factory

Factory systems

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Factory Improvement Toolset

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT has been developed to be a sustainable, time- and cost-efficient option for supporting factories to enhance productivity through improved business practices and working conditions. FIT focuses on areas of production improvement and actions to be taken specific to each participating factory. It can be utilized as stand-alone learning tools or to complement other training programmes.

With each module lasting no more than 2.5 hours, FIT enables factories to train personnel, whilst minimizing interference with production realities. The easy-to-use methodology makes it possible to rapidly scale the implementation to reach a large cohort of trainees across multiple production facilities.

Working in small groups, participants review real-life situations and engage in discussions to determine improvements to be made in factory without an external trainer or specialist. This self-facilitated, activity-based and highly participatory learning approach positions participants as both student and teacher and makes the toolset self-tailored to the needs and interests of each group.

About this module

The FIT module on Organizing the factory is a training for garment manufacturers to improve systems that support factory operations. Participants will work on improving their factory layout and general organization to improve productivity. This module takes about 2.5 hours to complete.

Upon completion of the training, participants should have:

- Understood the importance of organizing the factory for efficiency and safety.
- Learnt good practices in terms of layout and tidiness to improve factory organization.
- Discussed how to train staff in following and maintaining organization practices.

Guidelines for successfully using the training tool

Read out-loud

The FIT tool is designed for participants to take turns reading the instructions in the modules out loud to the group. At least one member of the group should be selected in the beginning of the session to take this responsibility.

Work as a group

Always work in groups of 5-7 during a FIT session. The programme will not be successful if participants work independently or do not collaborate with each other.

Be active

Encourage everyone in the group to actively contribute to the discussion. Ensure that no group member dominates the discussion or does not participate at all.

Monitor the time

Select one member of the group to monitor the time for each activity and remind the group when it is time to move to the next exercise.

Complete the action plan

Complete the action plan at the end of the session. This will help ensure that FIT results in improvements in the factory. Review the plan a while after the session to make sure that actions in the plan has been completed accordingly.

Icons

A set of icons is used throughout the modules to provide easy to recognize reference points for different tasks within each session and activity.

Read out loud
One member of the group should read out loud to the rest of group.

Knowledge link
Knowledge and skills are linked to other FIT learning resources and support.

Time allotted
Indicates how much time each sessions and activity should take.

Supplies needed
Indicates that supplies may be necessary to complete the session.

Begin step-by-step instructions
Indicates that the step-by-step instructions for an activity are beginning.

Think about it
Indicates additional information for the participants to think about.

Measuring your performance

Measuring operational efficiency is a key aspect of running a productive factory. The box(es) below guides you in understanding which measurement indicator(s) can be used to measure and evaluate the performance of your factory in relation to the topic of this FIT module.

Indicator 1	Order cycle time / lead time (Days)
Definition	The average amount of time in days that it takes you to process an order, from receiving the confirmed order to shipping the order.
Purpose	To understand how efficiently your factory operates, set a target for improvement, and begin to identify ways to process orders faster in the factory.
Calculation	Record the order cycle time (or lead time) for each order, then calculate the average. Note: You can also calculate your production cycle time to understand how long it takes to produce an order. Record the production cycle time for each order (from start of cutting to order shipping), then calculate the average.
Frequency	Calculate for each order, then calculate the average at the end of each year.
Responsible	Merchandiser / Production planning

Indicator 2	Turnover rate (%)
Definition	The amount of employees who leave the factory over a period of time and must be replaced, as a percentage of the total amount of employees.
Purpose	To understand how high your turnover rate is, set a turnover reduction target, and identify solutions to reduce turnover in your factory.
Calculation	(# of employees who left and must be replaced / average # of employees) x 100% Note: Average # of employees = (# of employees at the start of the time period + # of employees at the end of the time period) / 2
Frequency	Calculate monthly.
Responsible	HR manager

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Session 1

Business case study

Goals

Preparing you for the type of discussions you will have with other group members throughout the learning module and understanding the benefits of being exposed to different perspectives.

Understanding better why good organization in the factory is important.

Session 1
Overview

One member should read the full session out loud to the rest of group

15 minutes

Learning manual, pens, markers and poster paper

A business case study presents a real-life situation for learners to reflect on and discuss with other group members. By discussing the case, students learn from others' ideas and perspectives, and develop an understanding of the topic at hand within the workplace.

One group member reads the case study out loud

The whole group discusses the case study

Everyone develops a deeper understanding of the topic

Activities

Case study

The case study below presents a situation that could happen in real life.

Instructions:

1) As a group, listen to one member read the case study below while following along in your learning module.

Anil is a new factory manager at the HS garment factory. The factory is disorganized and untidy. The stores and the cutting room are at opposite ends of the factory. Workers have to carry fabric rolls through the sewing lines, which takes a lot of time. There is no storage system for tools, materials and products. As a result, tools get lost, and it takes a long time to find trims, bundles or garments to be issued. Items pile up under tables. Rooms and directions are not clearly indicated, and paths are often blocked by boxes and trolleys. This creates accidents as workers trip over objects and fall. Materials get damaged or dirty.

To solve these problems, Anil consults managers and workers. Together, they agree on several changes. First, they modify the layout of the factory so that the cutting room is now in between the stores and the sewing lines. They mark the path that workers should take to walk from one area to the other in yellow, and instruct everyone to always keep it clear. Rooms in the factory, as well as storage areas, toilets and others are clearly identified with boards. Every tool and material has its own place in each room, and workers are trained to understand and follow the new system.

Thanks to these changes, the factory is better organized and much tidier. This saves a lot of time in finding and transporting tools and materials. Accidents happen less often. Damage to material is also avoided. Workers find it easier to do their work and this results in better output, and quality has improved.

2) Together, discuss Anil's situation by answering the three questions in table 1 on the next page.

Table 1. Questions about Anil's situation
1. What problems has Anil identified? What impact do these problems have on the factory and its workers?
2. What do Anil and other managers do or change in order to solve these problems?
3. What are the results of their solutions for the factory and its workers?

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Session 2

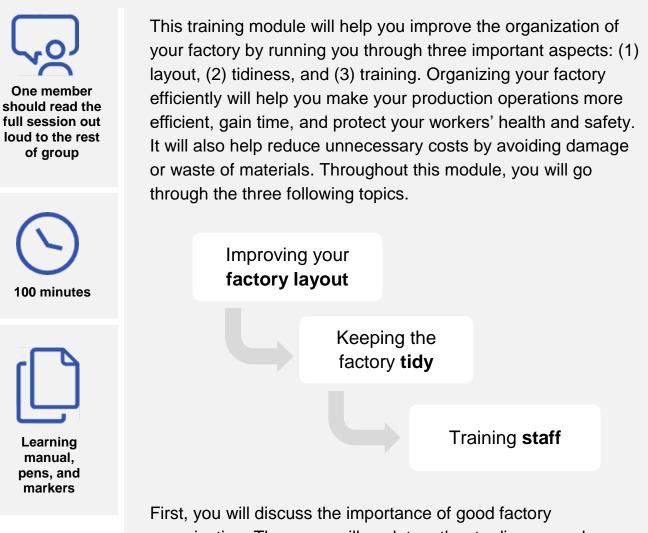# Learning about the topic

Goals

Discussing the importance of keeping the factory organized and tidy for the factory and its workers.

Understanding what a good layout is, and identifying ways to improve your factory layout.

Identifying concrete actions to keep the factory tidy and organized on a daily basis.

Discussing how and when to train staff in order to keep the factory organized at all times.

Overview

One member should read the full session out loud to the rest of group

100 minutes

Learning manual, pens, and markers

This training module will help you improve the organization of your factory by running you through three important aspects: (1) layout, (2) tidiness, and (3) training. Organizing your factory efficiently will help you make your production operations more efficient, gain time, and protect your workers' health and safety. It will also help reduce unnecessary costs by avoiding damage or waste of materials. Throughout this module, you will go through the three following topics.

Improving your **factory layout**

Keeping the factory **tidy**

Training **staff**

First, you will discuss the importance of good factory organization. Then, you will work together to discuss and improve your factory layout and learn about good practices to keep the factory tidy. Finally, you will discuss how to ensure that your staff follows and maintains factory organization.

What you will learn today is part of the **5S** model, a globally-recognized method to improve house-keeping leading to improved productivity in factories. The 5S are:

- **Sort**: Reduce waste, dispose of unnecessary items
- **Straighten**: Organise your locations, keep tools and facilities in order
- **Shine**: Clean and improve the look of the factory
- **Standardize**: Document and record work processes
- **Sustain**: Train workers to follow good 5S practices

Factory Improvement Toolset

Activities

Factory organization

Keeping the factory **organized** helps you save time and improve quality, safety and productivity. In this activity, you will discuss what a well-organized factory is and why it is important.

Instructions:

1) Have a participant read aloud the text box below. Then, discuss: Do you think your factory is well-organized? Why, or why not?

2) Together, discuss the three questions in table 2.

In a **well-organized** factory:
- The factory (rooms) layout follows the production process.
- Unnecessary items (old / outdated / non-useable) are sorted and discarded.
- Everything has its own place and is kept orderly and tidy.
- Staff keep each room tidy and orderly.

Table 2. Why is it important?
1. Why should the factory layout follow the production process?
2. Why is it important to keep everything orderly and tidy?
3. Why should staff be invovled in keeping everything orderly and tidy?

Good factory layouts

A factory layout is the way rooms in the factory are located, as on a map. A good **factory layout** will make your production process more efficient, safer, faster and will help you gain time. In this activity, you will practice improving the layout of a factory.

✎. Instructions:

1) Have a participant read aloud the seven tips for good factory layouts in table 3, and discuss why each tip is important. Then, look at the text box below table 3.

2) Together, look at the two factory layouts in table 4. The production flow is indicated with arrows to guide you. For each layout, discuss:

- Is this a good factory layout? Why or why not?
- If not, what could be improved?

Table 3. Good factory layouts
1. All rooms follow one single <u>continuous</u> direction, from entrance to exit.
2. This direction follows the production <u>flow</u> (the production process from start to end).
3. This direction is well <u>indicated</u>, using colour markings, arrows, signs and others.
4. The layout is <u>easy</u> for staff to understand and navigate.
5. The layout is <u>safe</u> for staff (machines, trucks, noise, dust, trolleys, etc.).
6. The layout minimizes material transportation <u>time</u> and walking time.
7. <u>Space</u> is used as efficiently as possible – make the most of what you have.

💡 There is no ideal layout! The best layout is the one that best suits your production needs and your available space.

Table 4. Good or bad layout?

Layout 1:

Factory A

Gate — Loading & unloading area — Stores — Cutting room — Sample room — Sewing lines — HR, Finance — Merchandising — Recreational area — Shipping warehouse — Finishing & packing — Sick room — Parking

Layout 2:

Factory B

Stores — Recreational area — Cutting room — Parking — Sick room — Finishing & packing — Sewing lines — Merchandising — Sample room — HR, Finance — Shipping warehouse — Loading & unloading area — Gate

In your factory, each room should also be organized to these seven tips. To learn more, ask for the "Organizing the sample room, storerooms, cutting room, sewing room" modules.

Improving your layout

A logical, simple, safe, well-indicated **factory layout** helps reduce material transportation time and walking time. This helps avoid both damage and accidents. In this activity, you will discuss your own layout and identify ways to improve it.

Instructions:

1) Together, draw the layout of your factory in table 5 and use arrows to indicate the production flow.

2) Together, discuss and answer the seven questions in table 6 to assess your own layout.

3) Together, discuss: Based on your self-assessment, what could you do to improve your factory layout? List your ideas in table 7.

Table 5. Your factory layout

Draw the layout of your factory below. Use arrows to indicate the production flow.

Table 6. Self-assessment	
In our factory…	**Yes / No?**
1. Do all rooms follow one single continuous direction?	
2. Does this direction follow the production flow?	
3. Is the layout easy for staff to understand and navigate?	
4. Is the layout safe for staff?	
5. Does the layout minimizes material transportation and walking time?	
6. Is space used as efficiently as possible?	
7. Is the layout well-indicated, using markings, signs or others?	

Table 7. Improving your layout
Use the space below to list changes that you could make to improve your layout.

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Keeping the factory tidy 1

Keeping the factory **tidy and orderly** is important to avoid damage to or waste of materials or garments, and to protect your workers' health and safety. In this activity, you will discuss how to keep the factory tidy.

Instructions:

1) Together, discuss: Would you say your factory is tidy and orderly? Why or why not?

2) Together, read through table 8 listing actions to keep the factory tidy and orderly, and put a ✓ in the column on the right if you do these things in your factory.

3) Together, look at the four pictures in table 9, then discuss for each: What could be improved to make the room more tidy?
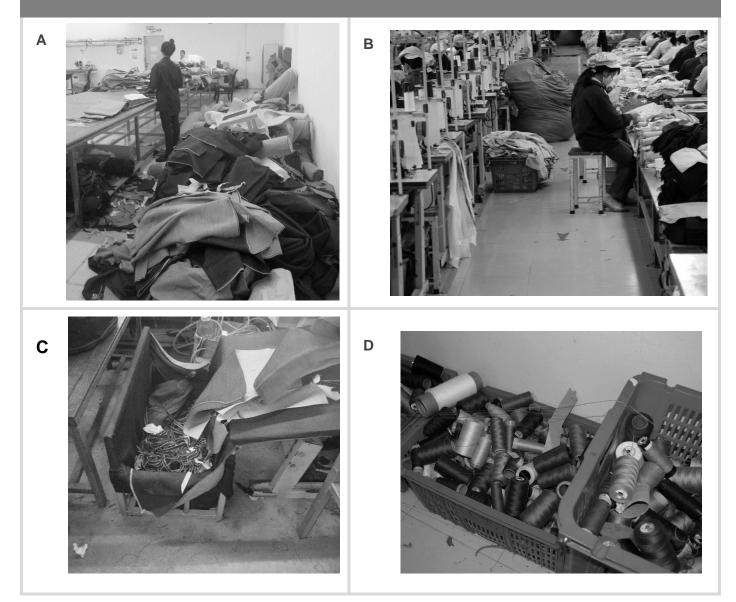
Table 8. Keeping the factory tidy	
Actions	✓
1. Do not allow staff to store personal belongings or bring food and drinks into work areas. Allocate areas with lockers for this purpose.	
2. Ensure that nothing is stored outside or in between production rooms in the factory. Spaces should be kept clear for transportation and circulation.	
3. Clearly indicate each room or area in the factory (e.g. sample room, storerooms, toilets, canteen etc.) using large signs.	
4. Keep the factory well-lit and ventilated. Check regularly for pests, insects, and mould. Ensure no water (e.g. from the roof or after rains) is leaking inside.	
5. Keep the factory clean, including floors, tables, equipment, shelves and tools. Repair and re-paint whenever necessary.	
6. Have specific storage areas in each room for items that need storing (e.g. samples, defective items, waste, work-in-progress), all properly labelled.	
7. Keep stored items on rails, shelves, pallets or in bins – never place anything on the floor.	
8. Draw paths on the floor and train workers in using them to go from one area to the other. Always keep these paths clear to avoid blockages and accidents.	

9. Keep paper documents on shelves or in filing cabinets, in separate rooms or cubicles within each production room, to avoid damage. Use a system for documents (e.g. by buyer, order, etc.).

10. Carry out inspections regularly to ensure that every part of the factory is kept tidy and organized, and to show that it is important.

11. Place waste bins in each room, by each desk, or at the end of each table and by each machine in which workers can push and collect waste.

12. Do not keep unnecessary or unused items in the production rooms. Excess material and waste should be returned to the stores or discarded.

Table 9. Picture practice

Keeping the factory tidy 2

Floor colour markings are a simple and inexpensive way to keep the factory orderly and safe for workers while helping them do their job faster and more easily. In this activity, you will learn more about colour markings.
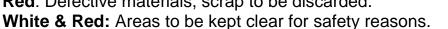
✎ Instructions:

1) Together, look at the explanations on using floor markings in table 10. Then, discuss the two questions in the table.

Table 10. Colour markings

Below are a few commonly used colour markings and their meaning:

Yellow / White: Paths and emplacements for machines, tools and equipment.
Blue: Work in progress
Green: Finished goods
Black: Raw materials
Orange: Materials or products awaiting inspection or re-work.
Red: Defective materials, scrap to be discarded.
White & Red: Areas to be kept clear for safety reasons.

1. Do you use colour markings in your factory?

   If so, which? Are they consistent across the factory?

   If not, could you do it in your factory?

2. What other ways are you using or could you use to keep the factory orderly and indicate the layout (for instance, signs, arrows, etc.) ?

💡 Here are a few tips for using **colour markings**:
- Use as few colours as possible so it is easier to remember
- Train all workers on the meaning of colours markings
- Use the same colour codes in all factory departments

Training staff

To make sure that the factory remains organized, it is important to involve your staff in the process, and **train staff** in understanding <u>and</u> maintaining the organization system. In this activity, you will discuss how to train staff in this.

✎ Instructions:

1) Together, discuss the four questions in table 11 to think about how staff should be trained in organization practices.

2) Together, read through table 12 listing things you can do to train and involve staff more efficiently, and put a ✓ in the column on the right if you think it is applicable in your factory.

Table 11. Training staff	
What?	What should staff be trained in (think about activities 2a~2c)?
Who?	Who should be trained? Everyone? Only some staff?
When?	When should training take place? When starting the job? Continuously? Periodically?
How?	Which training method do you usually use? Are there other suitable methods?

🔗 All new staff should **always** be trained in organization practices! To learn more about how to organize trainings for workers, ask for the "Training workers" module.

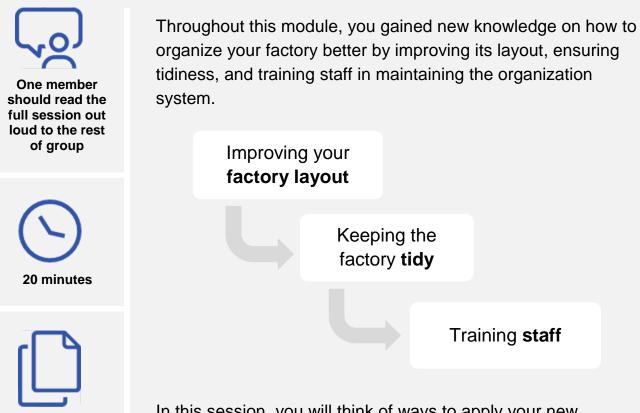| Table 12. Training and involving staff	
Actions	✓
1. Train staff to understand the factory layout, use the drawn paths and respect colour markings when they start the job.	
2. Train staff in understanding organization practices and keeping the factory clean and tidy when they start the job.	
3. Re-train staff whenever something changes, or improvements are made.	
4. Keep simple instruction boards on the wall to remind staff about important information such as the meaning of colours, with simple pictures and little text.	
5. Encourage staff to tell their manager whenever they see something that is not consistent with the organization system, or is untidy.	
6. Train staff to always put back tools, machines, trolleys and others where they belong so as to maintain the organization system.	
7. Encourage more experienced staff to train newer staff and make sure they respect the organization system.	
8. Make sure all staff are trained and involved in maintaining the system, even if they only work in one specific area of the factory.	
9. Give supervisors and managers the responsibility to ensure that the room or zone under their responsibility is kept organized and tidy.	

Session 3

Action items

Goals

Summarizing and revising the new knowledge gained.

Identifying concrete applications of the new knowledge that benefit your factory.

Session 3
Overview

One member should read the full session out loud to the rest of group

20 minutes

Learning manual, pens, and markers

Throughout this module, you gained new knowledge on how to organize your factory better by improving its layout, ensuring tidiness, and training staff in maintaining the organization system.

Improving your **factory layout**

Keeping the factory **tidy**

Training **staff**

In this session, you will think of ways to apply your new knowledge to improve organization in your factory by reviewing best practices and drafting your own action plan.

Activities

Best practices checklist

In this activity, you will review best factory organization practices as a next step for evaluating your own and implementing improvements.

✎ Instructions:

1) Together, look at the list of best practices in table 13, and put a ✓ in the column on the right if you use these practices in your factory.

Table 13. Organizing the factory	
Best practices	**✓**
1. The factory layout is unidirectional, safe and easy for staff to navigate, and follows the production process from start to end.	
2. Everything in the factory (materials, tools, offices, etc.) has its own place and is kept so.	
3. The factory is kept tidy and orderly at all times. Inspections are carried out regularly to ensure that the system is maintained.	
4. Coloured markings are used to delineate specific factory areas, work cells and pathways, and to keep workers safe by indicating dangers.	
5. Staff are trained to understand and maintain the organization of the factory.	

Activity

3b

🕐

15 minutes

Your action plan

In this activity, you will think of ways to apply your new knowledge to improve organization in your factory by drafting your own action plan.

✎. Instructions:

1) Together, fill in the action plan (table 14) on the next page. Identify a key problem that you want to solve and write down the solutions you identified while working on this module.

Table 14. Organizing the factory – Action Plan				
Problem identified				
Solutions identified	**Action(s) to be taken**	**Person responsible**	**By when?**	**How will improvements be measured?**

Organizing the factory

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT is being piloted in Asia under the regional Decent Work in the Garment Sector Supply Chains in Asia project funded by the Government of Sweden.