



सत्यमेव जयते  
Ministry of Housing and Urban Affairs  
Government of India



**Training of Trainers Module on**

# Occupational Health and Safety of Ground Functionaries

*Sustainable Cities Integrated Approach Pilot in India*







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# About the Project

"Sustainable Cities Integrated Approach Pilot in India" is one of the projects under the Global Environment Facility's Sustainable Cities Programme. The project is led by the United Nations Industrial Development Organization (UNIDO). The aim of the project is to integrate sustainability strategies into urban planning and management in order to create a favourable environment for investment in infrastructure and service delivery, thus building the resilience of cities. The project has three main components—Sustainable urban planning and management; Investment projects and technology demonstration; and Partnerships and knowledge management. The National Institute of Urban Affairs (NIUA) has been engaged to undertake the implementation of tasks outlined under the third component, i.e. Partnerships and knowledge management.

NIUA will help build a multi-sectoral partnership platform to ensure the implementation of sustainable city strategies based on an understanding of the various technical, financial, political, social and business issues and challenges of different stakeholders/partners. The project aims to enhance capacity for urban governance in general, and in particular, sustainable energy and environmental management, investment and finance, ICT integration for efficient service delivery, and transformative urban planning approaches. It focuses on the three sectors of solid waste management, used water management and water management. As a first step, NIUA conducted a Training and Assistance Need Analysis (TANA) to understand the requirements of various stakeholders in the five pilot cities (Bhopal, Guntur, Jaipur, Mysuru, and Vijayawada). This analysis provided the necessary information for developing an on-the-job training program. Based on the findings of the TANA, NIUA prepared the training modules and curriculum for various stakeholders in the cities mentioned above. The training modules will be used to deliver training in the cities and then scaling up the capacity building activities of the project.



# About the Module

A set of Training of Trainers (TOT) Modules and Handbook are developed based on the findings of TANA that was conducted for the front line workers & ground functionaries. It comprises the following:

1. ToT Module on Social Social Security Provisions and Schemes for Ground Functionaries.
2. ToT Module on Enhancing Leadership Skills in Ground Functionaries and Creating an Inclusive Work-place
3. ToT Module on Occupational Health and Safety of Ground Functionaries
4. Handbook on Social Security Provisions and Schemes for Ground Functionaries

This module covers the occupational health and safety of frontline workers in detail. The purpose of the training is that the workers know various work-related injuries and infections, they are aware of the ways they can safeguard themselves by using Personal Protective Equipment (PPE). They are informed about the various kinds of PPE available in the market. This module can be used for training of frontline workers like desludging operators, dry waste collectors and operators, sanitation workers, door to door waste collection workers, waste pickers, street sweepers, cleaners of public toilets and other ground functionaries. The Master trainer of this module should be well versed with the occupational safety norms and various protective gear available for the workers in solid and liquid waste management.



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# Getting Started



## *Objective of the training*

The participants learn about the foundational aspects of making the work of waste management safe for the workers, that includes understanding of the different PPE needed and used in the domain of waste management. They are able to make connections between the various occupation related illnesses and lack of usage of PPE.



## *Outcome of the training*

By the end of the training session, participants should have exposure on different PPEs used in the work of waste management. They have a positive view on their usage and have promised to use PPE and reinforce usage of PPE through peer pressure and awareness.



## *How was the module developed*

The module was developed after a thorough review of the Occupational Safety, Health and Working Conditions Code 2020 and existing literature on PPE for both solid and liquid waste management. In addition to the secondary literature, the authors relied on their past experience of working with the waste-pickers for developing the module.



### *Audience*

The module is intended for the trainers engaged in training frontline workers and ground functionaries, which include sanitation workers, workers engaged in door-to-door collection of segregated solid waste, waste-pickers who are involved by the municipal authorities for the collection and management of dry waste (including recyclables), workers engaged in organic waste management and workers engaged in desludging operations or liquid waste management. In addition, this module will be useful for the municipal corporations and state urban departments and civil society organizations for planning training sessions for the workers as a part of Swachh Bharat Mission (SBM).



### *Note for the trainers*

- The trainer needs to be well-versed with the occupational safety norms in India. Knowledge of other updated Labour Codes will be an advantage.
- Before organizing the training, the trainer should note down the terms used in common parlance for protective equipment or translate them in local language and use the same in the training while referring to the PPE.
- Using personal anecdotes of the experience of accessing the schemes or requesting participating workers to share their experience in usage of these schemes will make the workshop more engaging.
- In case, the trainer is not well versed with the language spoken by the workers, it is important that a translator is involved.



### *Time required*

The training would require approximately 03 hours (180 minutes). In case, the trainer involves a translator, it will increase the length of the workshop to 03 hours and 45 minutes.

## Material required

- Samples of Personal Protective Equipment: Reusable masks, different samples of gloves (rubber and cloth material), goggles, gum boots, regular sturdy shoes, aprons, fluorescent jackets, water bottles and sanitizers. In case any of the gears are not available, use their pictures.
- Projector and powerpoint presentation prepared as a part of the module.



## Initial steps for training

1. The trainer and small group facilitators should reach the training venue at least an hour before the timing of the training and check whether all the required materials and translation support are in place.
2. Set up the Personal Protective Equipment on the table for workers to touch and feel.
3. In case some equipment is not available, ensure that its pictures are placed along the available equipment, for the participants to see.
4. In case, participating workers reach before time, having an informal chat about their well-being and interest in the given theme will help the trainer and small group facilitator to break the ice with them, before starting the workshop.
5. The trainers and organizers should ensure appropriate arrangement for ventilation, illumination and physical distancing in the training session. Similarly, it is important to make an arrangement for soaps in the toilets, drinking water for the participants and sanitizer at the entry point of the workshop.
6. Before starting the workshop, the trainer and small group facilitators should introduce themselves to the participants. The module outlines the process of introduction of participants and the same can be used.





# Abbreviations

PPE Personal Protective Equipment

UNIDO United Nations Industrial Development Organization



Session

**1**

# Familiarising with Personal Protective Equipment (PPE)



Time required: 30 minutes



## Objective

To familiarise the participants with PPE by letting them touch and feel the PPE, and allowing them to try it on.

---



## Outcome

The participants are aware of the various forms of equipment required and used for the protection of workers in the waste management sector.

---



## Facilitation

The Master trainer welcomes the participants and encourages them to touch, feel and try the PPE. The exercise will be used as an ice-breaker and set the expectations for the following sessions.

---



## Material Required

- Samples of Personal Protective Equipment - Reusable masks, different samples of gloves, rubber gloves used for wet and liquid waste and cloth material gloves used for sorting, gumboots for organic waste and liquid waste management, regular feet friendly shoes for workers engaged in street sweeping, apron, fluorescent jacket, transparent eye-glasses to deal with dust and particulate matter in the air, and gas released by liquid waste, ear-plugs, and different uniforms. In case, some PPE are not available, place clear pictures of the unavailable PPE.
- Water bottles to keep them hydrated, pocket sanitisers.

# Procedure

Before the beginning of the workshop, place the sample PPE along with the pictures of those which are not available, on the table. When the workers (participants in the workshop) enter the venue, guide them to the table where PPEs are kept. Encourage them to wear them, feel the material. All this needs to be done before the workshop begins.







Session

2

# Introduction and Group Building



Time required: 30 minutes



## Objective

To facilitate the interaction between participants by promoting introduction and connection with the fellow participants

---



## Outcome

By the end of the session, the participants know the fellow participants and are divided in the groups for the day's work.

---



## Facilitation

The participants are divided into 5 groups, with 8 participants in each of the groups and the participants get to know each other. One Master Trainer and five small group facilitators are required for the session.

---



## Material Required

Pictures of 5 different fruits: mangoes, jackfruit, bananas, apples, pears, with each of the pictures having eight copies, kept in two bowls.

# Procedure

## 1 >> Step

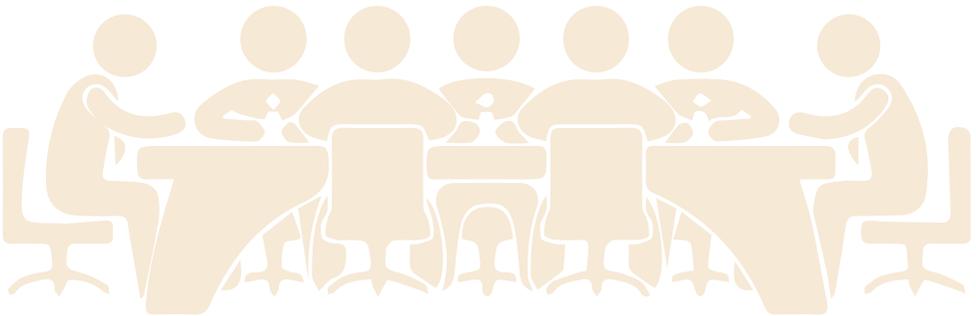
The master trainer announces that the participants need to pick a picture of fruit from the given bowls.

## 2 >> Step

Those who have the same fruit picture get together in one group. For illustration, those who have pictures of mango are in one group, those who have pictures of jackfruit are in another group.

## 3 >> Step

Once the groups are set up, the small group facilitators initiate the introduction i.e. participants are asked to share their name, occupation, and with that, the participants familiarize themselves with the other participants in the workshop.







Session

3

# Understanding Why Workers Do Not Like to use PPE



Time required: 60 minutes



## Objective

To understand the issues and challenges participants face in usage of PPE by sharing their preconceived notions about PPE and those notions are put to question.

---



## Outcome

The participants are able to connect between PPE, promoting safe working conditions and sound health of workers.

---



## Facilitation

This session requires one master trainer and five small group facilitators. The session will use the Socratic mode of learning, where past experiences, notions are put to question. Through questioning and self-reflection that the participants appreciate the usage of PPE. Both Master trainer and small group facilitators need to be empathetic to the workers and give patient hearing to their point of view.

**Note for small group facilitators:** Changing the age-old practice of work style or habit to become more compliant with standards of work that will support and protect occupational health hazards is a paradigm shift for frontline workers. Using PPEs changes the way workers work to an ergonomically correct (occupational safety and health standard) way. It is a behaviour change. The facilitator will face huge resistance for change in work methodology, but awareness of health risks, connecting it to the risks faced by their family at large will eventually bring change. Covid-19 pandemic has made everyone realise the importance of using masks and we need to leverage that knowledge to have better practices of using PPEs in place

---



## Material Required

Reading material available at

<https://washmatters.wateraid.org/blog/boots-gloves-masks-is-providing-ppe-enough-to-protect-sanitation-workers>

# Procedure

## 1 Step

The small group facilitators show them various kinds of PPE again and ask them what they are and why they are used. For example, gumboots are used to protect the feet against the bacteria which is present in wet waste or liquid waste. Gumboots and regular shoes also safeguard feet against any sharp material found in the waste. Gloves are used to protect against various infections which one may encounter while sorting the material or transferring the material. Rubber gloves are preferred for organic waste so that there is no contact between the waste material and the worker. Similarly, cloth and synthetic gloves are used for sorting waste, as it gives a good grip of the material. Masks are worn to ensure safety from pathogens in air such as viruses, dust and particulate matter in the air. Fluorescent jackets or aprons are used as an indication for others to know that workers are working in the given space and they should drive slowly. Earplugs cut the noise at work and uniform identifies them as essential workers. There can be other answers, which the facilitator must note down.

## 2 Step

The small group facilitators ask the workers why they do not like to use the PPE. In a group, they can give at a minimum of three reasons for not using the PPEs. The facilitator takes note of reasons. The workers may give responses like, for years they have been doing this work without PPE nothing has happened to them; it feels very hot when they wear gloves, they sweat inside the gumboots and gloves, shoes and mask; it takes more time to complete the task; they cannot breathe properly in the mask; it gets dirty and they do not have a place to clean and store them. They may also suggest that they do not have money to buy the PPE once the set provided by the contractor or corporation has worn off.

It is at this point, the small group facilitators in a very calm tone asks the worker to reflect on the following questions:

- What about your health?
- Is working faster more important than your health?
- Imagine if you get infected, what happens to your family?
- Can we manage minor discomfort for better health in the long term?

After asking these questions, pause for three to five minutes for them to absorb the questions and seriousness of the issues. Do not expect answers and leave it there quietly and start the next round of discussion

The small group facilitators ask the participants about the health issues they face. Answers can range from frequent headaches because of noise, cuts and bruises on hands and feet, insect or snake bites, a bacterial infection in eyes or on the skin, dehydration.



## 3 Step



## 4 Step



Session

4

# Informing Workers About the Usage of PPE



Time required: 45 minutes



## Objective

To familiarize the participants about the purpose and benefits of using PPE. The link between the illnesses and its preventions with the use of PPE will be elaborated. In addition, training them to understand which PPE is suitable and beneficial for their work needs.

---



## Outcome

The participants are aware of the different PPE required for the work in solid and liquid waste management.

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## Facilitation

It is a large group session. One Master trainer would use the PowerPoint presentation prepared for the session. It is provided as an annexure.

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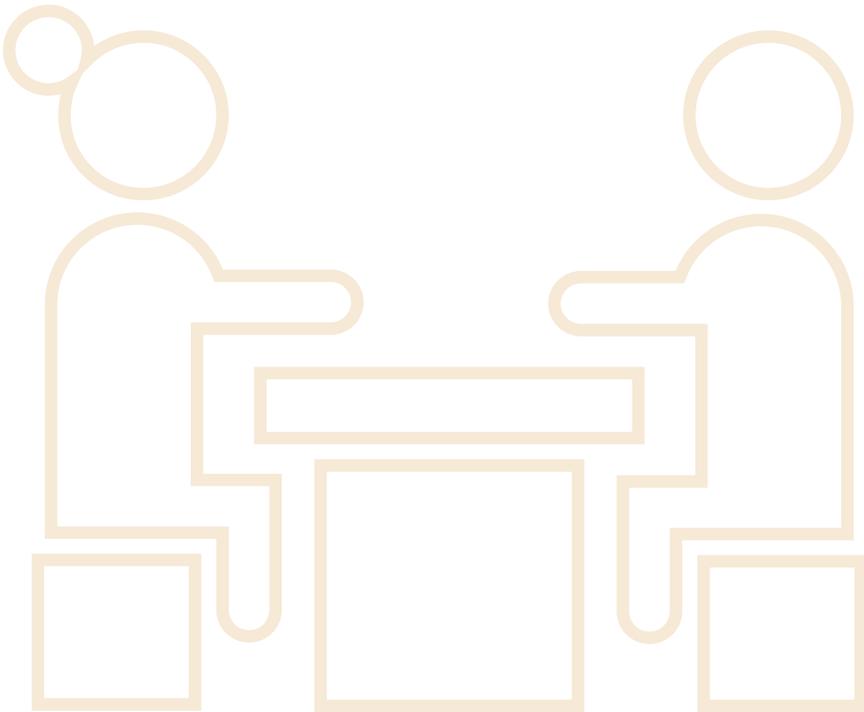


## Material Required

One Computer connected with the projector to display the powerpoint presentation for the workers.

## Procedure

This session will be done in a lecture mode, where the Master Trainer uses the powerpoint presentation to show the harm done by the non-usage of PPEs and the protection provided by the PPE.







Session

5

# Retrospection and Winding Up



Time required: 15 minutes



### **Objective**

To consolidate the lessons learned through the workshop on PPE.

---



### **Outcome**

Ensure that the participants will actively use PPE and ask for it, in case they are not provided.

---



### **Facilitation**

This is a small groups session, where participants sit in the same groups set up earlier and the help of small group facilitators is taken for facilitating the discussion.

---



### **Material Required**

There are no materials required for this session.

# Procedure

## 1 >> Step

The small group facilitators ask the participants to share what they feel about the session and things they have learned. The answers can be: it was a good session; we liked the discussion; we got to know that without PPEs, not just us, even our families are unsafe; there are more comfortable PPEs out there; we need to keep an open mind towards PPEs; we should demand new PPEs whenever the old ones wore out

## 2 >> Step

The small group facilitators ask them to make a promise to each other that they will use the PPEs and persuade their colleagues to use them. In case the PPEs are not given, they will demand it as it is their right as frontline workers



## Annexure - I

# Common health issues faced by frontline workers

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# Commonly reported health problems

- Fatigue
- Chest pain
- Headaches and nausea
- Skin infections
- Diarrheal diseases
- Menstrual disorders
- Vector Borne diseases
- Dengue, Malaria
- Constant Cough
- Back and joint injuries
- Respiratory illness
- Infections
- Puncture wounds
- Constipation
- Loose stools



# Occupational hazards : Exposure to waste



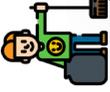
- Toxic, allergenic and infectious substances
- Gases, dusts, leachates, sharp objects

## Raw Waste



- Toxic, allergenic or infectious health response

## Decomposing Waste



- Working in traffic, shoveling, lifting, equipment vibrations, accidents, injuries, animals bites

## Waste Handling



- Odour, noise, vibration, accidents, air and water emissions, residuals, explosions, fires

## Waste Processing

Source - Adapted from the BBMP Manual for Master Trainers



# Occupational hazards : Bites

- Bites by snakes, rodent or dogs is common occurrence when clearing black spots, bagging mature compost and sorting dry waste
- Using good sized gloves can prevent effects of bite.
- Immediate action: Wash the wound immediately (as early as possible) under running tap water for at least 10 minutes. Use soap or detergent to wash the wound (if soap is not available then use water alone to wash the wound).
- Immediately go to the near by government hospital where Anti Rabies Injection is administered
- Keep number of the nearby hospital handy and the location of the hospital, it will help you and your colleagues around.



# Occupational hazards : Bites



- Snake bites are difficult to figure out whether they are poisonous or not
- Immediately go to the near by government hospital where Anti Venom is administered
- Keep number of the nearby hospital handy and the location of the hospital, it will help you and your colleagues around.



# Occupation hazard : Cuts

- Investigate wound to determine exact location and size of embedded object.
- Do not remove embedded object
- Use pads, dressings and bandages to apply and maintain pressure around object
- Rush to the nearest PHC or ESI clinic



Source - Adopted from the BBMP Manual for Master Trainers



# Occupation hazards : Scratches and bruises



- Bleeding
  - Break, cut or opening in the skin
  - Bleeding –may be minor, moderate or severe
  - Bruising and pain
- First Aid
  - If bleeding, apply direct pressure with a clean cloth or absorbent pad
  - Wash area with antibacterial soap and clean until there appears to be no foreign matter in the wound
  - Cover area with an adhesive bandage or gauze wrap
  - Consult a doctor to explore if you need to take a tetanus injection



# Prevention of occupation related health issues



Source - Adopted from the BBMP Manual for Master Trainers



## PPE for frontline workers

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# Lung protection

Masks to protect lungs from SARS COV-2 Virus (COVID 19), pollution, dust and particulate matter



*Speaker's Note:*  
Buy masks which are washable and reusable.

# Protecting hands

Protect the hands from cuts, touching bacteria and viruses rich raw waste. Different gloves for different work. It should fit well and comfortable.



**Speaker's Note:**

Rubber gloves are used for managing organic waste and liquid waste, whereas a mix of cotton and synthetic materials are used for street sweeping and sorting, as they allow greater grip of the material.

# Ear protection

Has to be reusable and washable. It can be used carefully when there is a lot of noise, like shredding of leaves, bailing, shredding of plastic.



# Eye protection

Should be used in work environment where there is a lot of dust or particulate matter, gas and useful in sweeping soon after the road is constructed, or shredding of leaves



# Head Protection

To be used when working at height or near open chambers



# Feet protection

Appropriate foot wear for the work. Having steel toe for shoes protects from physical hazard



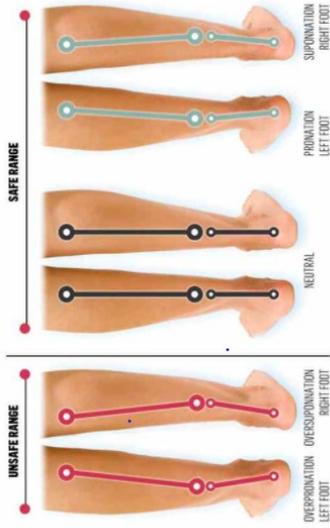
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**Speaker's Note:**

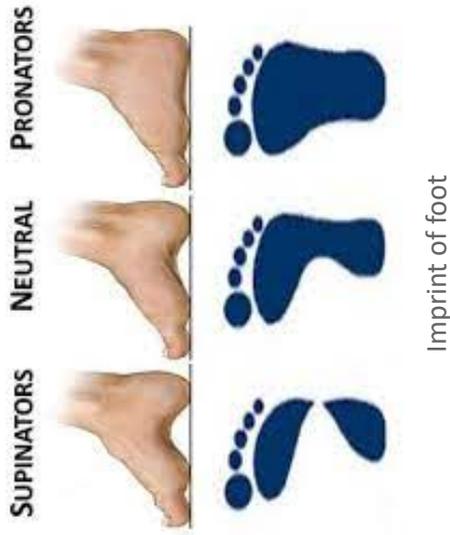
Gum boots are preferred for working in organic and liquid waste management and regular sturdy shoes are useful for street sweeping, door to door collection and others. Crocs if the workers do not like closed shoes, not preferable for organic and liquid waste management.

# Occasional hazard: Leg pain over pronation or supination

- Selecting appropriate footwear is the key to having low discomfort
- Understand kind of legs you have: over pronation, pronation or supination foot
- Your local cobbler can help with correction of your existing foot wear



# Exercise to understand the type of feet



Imprint of foot

**Speaker's Note:**

Take a step in water and then place your foot on floor to notice the type of your feet.

# Handwash for hygiene and COVID-19 protection



**Speaker's Note:**  
The video will be provided to the trainers along with the training material.











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