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# TRAINING REPORT

## 4 DAY LOCAL LEVEL TRAINING

OF STAFF/OFFICIALS OF MUNICIPAL COMMITTEES ON  
OPERATION AND MAINTENANCE OF MUNICIPAL SERVICES  
IN JACOBABAD, JOHI, MEHAR, KHAIRPUR NATHAN SHAH,  
KAMBAR AND SHAHDADKOT

UNDER  
LOCAL GOVERNMENT STRENGTHENING ACTIVITY (LGSA)  
MUNICIPAL SERVICES DELIVERY PROGRAM (MSDP)

Date: August 4 – 7, 2020

Location: Municipal Committee Office, Johi



**Prepared by: Management & Development Center (MDC)**  
**Supported by: Municipal Services Delivery Program (MSDP), P&DD, GOS**  
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5<sup>th</sup> July, 2021

To,

**The Program Director**

Program Management Unit (PMU) – Sindh MSDP  
Planning & Development Department  
Government of Sindh, Karachi  
D-18 Block 2, Kehkashan, Clifton, Karachi

**SUBJECT: SUBMISSION OF LGSA-4 DAY LOCAL LEVEL TRAINING REPORT FOR MUNICIPAL COMMITTEE JOHI FOR OFFICIALS OF MUNICIPAL COMMITTEES ON OPERATION & MANAGEMENT OF MUNICIPAL SERVICES.**

Dear Sir,

We are thankful for your approval of Training Reports for LGSA-4 Day Local Level Training Report for Municipal Committee Johi for Officials of Municipal Committees on Operation & Management of Municipal Services during the Quality Assurance Committee (QAC) meeting held on June 25, 2021.

We are pleased to submit final version of this Reports for your record

We will be glad to provide any additional information if required.

Looking forward to cooperating with you.

With Best Regards



**Avais Ahmed Memon**

Chief Operating Officer  
Management & Development Center (MDC)  
Focal Person (LGSA), MSDP

**Cc to:**

- Director General (Works), PMU-Sindh MSDP, Karachi.
- Director (Reforms), PMU-Sindh MSDP, Karachi.
- Deputy Director (Reforms), PSU- Sindh MSDP, Jacobabad
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- Office Record.

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## 1 INTRODUCTION

Under the component of Trainings, a 4-Day Local Level training had been conducted at Municipal Committee office at Johi, District Dadu. The training was conducted from August 4 to 7, 2020. Total thirty participants from different branches and hierarchical levels of MC of Johi attended the training. This task of training had been carried out under LGSA project by MSDP.

The main purpose of the training was to enhance overall capacity of the targeted Municipalities for carrying out their roles effectively for the achievement of Sustainable Development Goal 6: Clean Water and Sanitation. The main thrust of the training was clean drinking water supply, waste water management and solid waste management.

### 1.1 The Training Objectives

- The participants will be able to understand the concept of the best practices related to municipal essential services so that the targeted municipal committees' personnel will be aspired to achieve the level of performance excellence against some criteria.
- The training will empower the participants to operate and maintain the water treatment plants according to Standard Operating Procedures effectively.
- The participants will have an understanding of integrated solid waste management framework and acquire the skills of operating SWM equipment, vehicles and machines.
- The trainees will be able to understand basic component of water supply system with a focus on pump station operation and maintenance.
- The training participants will be equipped with sewage collection technical skills.
- The participants will have an understanding of the concept of ecosystem management with a focus on environmental health and safety.
- The training will enable the participants to assume reasonable responsibility for health and safety of themselves and others.

### 1.2 Training Principles

The training was conducted keeping in view of the following learning principles:

- Adult learning principles
- Participatory through interactive lectures
- Fostering critical thinking through exercises
- Inclusive by catering the diverse needs of the participants
- Providing opportunity for sharing of knowledge through group activities/ presentations
- Energizers and take away activities, food for thought

### **1.3 Training Participants**

In all 30 staff members/ officials including Chairman Municipal Committee, Johi attended the training. The representation remained from all the grades and branches of MC Johi. The participants were nominated by the Chairman and CMO Johi. The attendance sheet of the participants is presented as Annexure - III.

All the SOPs of training were followed including the COVID-19 set by the Government of Sindh considering the venue of the training.

## 2 Proceedings of Day One

### 2.1 Registration of the Participants

The first day of the training started with the registration of the participants. Mr. Mohammad Ali, Team Leader, LGSA distributed training manuals, name tags & the trainer/ facilitator shared the training agenda. The training facilitator, LGSA team and all the participants gave their introduction. Voluntarily, one of the participants was requested to recite some of the holy verses from Quran.

### 2.2 Inaugural Address by Chief Guest

Mr. Nisar Rahpoto, Chief Municipal Officer, Municipal Committee Johi as a chief guest graced the opening ceremony of the four days' local level training. He appreciated the training organized for the staff of MC Johi and encouraged trainee participants to take active part in the activities and learn from very experienced and senior trainers. He highlighted the importance of training to them and indicated the challenges and issues faced by MC Johi.

### 2.3 Introduction of LGSA and Local Level Training

After that a brief introduction of the Local Government Strengthening Activity (LGSA) project supported by MSDP and funded by USAID was given by the Team Leader of LGSA Project prior to formally conduct sessions. The participants were shared the rationale and objectives of local level training.

### 2.4 Pre -Test Evaluation

A brief pre-test was conducted by the facilitator aimed at analyzing the trainees' prior knowledge of the training contents that how much knowledge they already have on the topics which were to be presented in the training program. During the test administration it was realized that most of the participants, especially sanitary workers were unable to attempt written tests so their prior knowledge was assessed verbally.

### 2.5 Group Formation

All the participants in the training hall were divided into two homogeneous groups. Participants were requested to select name for their group. Then with their mutual understanding Group A & Group B were made by calling names.

Rules and responsibilities or code of conduct were set before initiation of training. The training continued in a friendly environment where all the participants were encouraged to share their experiences. They were encouraged to participate in group work and asking questions where they feel any problem.

## 2.6 Commencement of Training

The training started as per agenda, with the recitation of Holy Quran. The team leader introduced the training facilitators/ faculty. Then the participants were requested to introduce themselves and asked to express their expectation from this training initiative.

Mr. Zulfiqar Dhakan, the training facilitator conducted first academic session on the “Significance and Meaning of the Best Practices of Municipal Services System” with the help of some video clips.

The participants actively involved and participated in the discussion and raised many questions during the video concerning to the topic. During this session Ms. Tanveer call out the attention of participants to the struggle of men, women and children themselves to fight with the challenge of 2010 flood successfully as one of the best practices by municipality of Johi. The discussion inspired the motivation and enthusiasm among the participants and they got so involved in the training.

The session was focused around the following topics:

- Significance of best practices in municipalities
- Definition of best practices
- Elements of best practice
- International best practices in water supply, wastewater management and solid waste management

During lunch break, the participants had informal discussion with the training facilitators regarding MC’s issues and challenges.

Mr. Abdul Haque Banglani, conducted the second session on “International Best Practices of Municipal Services System and the Best Practices of Local Municipality of Sindh” through video clips and pictorials. Mr. Banglani showed the pictures of Sakrand as a neat and clean model city. The city is practicing the proper solid waste management systems which reflects that every city by appropriate SWM system practices can set an example of neat and clean city. The facilitator also showed the videos of international best



**Mr. Zulfiqar Ali Dhakan, Resource Person, MDC**



**Mr. Abdul Haque Banglani, Resource Person, MDC**

practices in which the participants were educated so that they can transform their solid waste into a valuable commodity.

Some of the participants shared views about practices of Municipal Committee Johi and identified hurdles during the services provision. They mentioned about the shortage of material resources and funds.

Then the day I was concluded by having the views of trainers and the participants. The suggestions for improving the training for rest of the three days were well received and incorporated by the organizers and facilitators.

The detailed power point presentations of day 1 are presented as Annexure – II.



### 3 Proceedings of Day Two

The second day of training started with the recitation of some holy verses from Quran and the participants' review of previous day. Then the training formally started with the first session conducted by Mr. Zulfiqar Dhakan on "Operation and Maintenance of Water and Wastewater Treatment Plants". The facilitator discussed in detail the processes of the water treatment plant including its operation and maintenance. Then the participants were educated about the process of waste water treatment. The trainer being a former delegate of PCSIR shared his valuable experiences with the participants.



**Mr. Zulfiqar Ali Dhakan, Resource Person, MDC**

The following topics were discussed during this session:

- Operation and Management of Water Treatment Plant
- Water Contamination
- Water Treatment Methods
- Drinking Water Supply Treatment System
- Types of Water Treatment System
- Water Treatment Plant

The lecture of the trainer evoked curiosity among the participants. The session was followed by interactive discussion. The team leader highlighted the holistic efforts extended by MSDP for the improvement of water supply, wastewater management and solid waste management. He explained about the initiatives of local government relating to both infrastructural development and human capacity development for the achievement of Sustainable Development Goal 6: "clean water and sanitation". This discussion led to the contentment among the training participants.

The second session was conducted by Mr. Abdul Haque Banglani on "Supervision of Water & Wastewater Treatment Plants". The session was primarily meant for the inspectors and supervisors, nevertheless the lecture was well received by all the training participants.

The trainer discussed the following topics during his presentation:

- Management Role in the Water Treatment Function
- Water Quality Management
- Cost Management



**Mr. Abdul Haque Banglani, Resource Person, MDC**

- Budgets and Budgetary Control
- Management of Plant Integrity

In the end of the session, the participants were divided into groups and assigned group work for sharing their aspirations regarding the development of their MC after five years. The participants were motivated to dream/aspire for the betterment of their MC and express their aspirations through words or images.

At the end of the last session, training day II evaluation by the training participants was obtained verbally. The participants were found to be very enthusiastic about this training event. They had rarely attending any trainings in their MC.



**Training Participant During Presentation**

The detailed power point presentations of day 2 are presented as Annexure – II.

## 4 Proceedings of Day Three

The reflection of pervious day was presented by the participants after some verses of Holy Quran. Then the first session on “Solid Waste Management” was conducted by Mr. Abdul Haque Banglani. The facilitator himself was already engaged carrying out Solid Waste Management assignments in different municipalities of the province of Sindh. This valuable background of the trainer in SWM practices multiplied the effectiveness of this session on SWM.



**Mr. Abdul Haque Banglani, Resource Person, MDC**

The following topics were discussed during the session:

- Solid Waste Management
- Categories of Solid Waste Management
- Framework of Solid Waste Management
- Functional Elements of Waste Management System
- Reduce, Reuse & Recycle
- Municipal Solid Waste Management
- Operating SWM Equipment, Machines and vehicles

The second session on “Water Supply System and Distribution at Pump Station” was conducted by Mr. Zulfiqar Dhakan. During the session importance of water for human and ecosystem was highlighted.

The presentation was focused on the following topics:

- Water Supply System
- Water Supply Mechanism
- Water Distribution
- Type of Water Supply
- Basics on Water Pumping
- Types of Pumps
- Pipeline Distribution Networks

After lunch break, the participants presented their group work that was assigned on previous day. The participants discussed about how to develop the municipality of Johi and assumed their roles towards a prosperity of the municipality.

The last session was on “Sewage Collection Management” conducted by Mr. Abdul Haque Banglani. Sewage collection is one of the important topics for the MC staff especially sanitary

workers working the secondary/small cities of the province of Sindh. The participants shared their experiences regarding sewage collection management in their MC.

The following topics were discussed during the session:

- Concept of Sewage Collection Management
- Inspection Techniques
- Sewer Cleaning Methods

In the end the participants shared their views and aspirations regarding the future of MC Johi. The participants came up with the suggestions to develop and improve systems within their MC. They also identified and reflected upon their own roles in the improvement of their MC. The session was concluded by the facilitator by having the participants' views about the effectiveness of training sessions of day III.

The detailed power point presentations of day 3 are presented as Annexure – II.

## 5 Proceedings of Day Four

On the last day of training, the recap of the previous day was presented by the participants after recitation of some holy verses from Quran. On the last day, the participants were seemed to have enhanced self-esteem despite of the harsh weather conditions. Both the trainers and training participants appeared to be in high morale. The first session on “Environmental Health and Safety Management System” was conducted by Mr. Zulfiqar Dhakan.



**Mr. Zulfiqar Ali Dhakan, Resource Person, MDC**

The trainer started the session showing the heart touching video of Bhopal gas tragedy incidence back in 1984. This emotional video was translated in Urdu/Hindi, evoked so much emotional impact on the participants. Through this video the trainer covered all the topics of Environmental Safety and Health very effectively.

The following topics were covered during the session:

- Environmental Health and Safety
- Environmental Health and Safety Regulations
- Environmental Health and Safety Management System

The second session on “Occupational Health and Safety” was conducted by Mr. Abdul Haque Banglani. Mr. Banglani having an authority in the field of SWM conducted this session very effectively. The trainer had brought with him, the personal protective equipment and safety jacket showed to the participants and especially the sanitary workers were demonstrated the use of the safety equipment during the session. The workers and staff were made to realize their roles in ensuring the safety of themselves and others.



**Mr. Abdul Haque Banglani, Resource Person, MDC**

The following topics were discussed in this session:

- Occupational Health and Safety
- Organizational Policy
- Rights and Responsibilities
- Personal Safety Equipment

The detailed power point presentations of day 4 are presented as Annexure – II.

## 6 Training Evaluation and Feedback

The training evaluation and feedback on 4-Day Local Level Training had been taken from the top management of municipal committee Johi, the training participants, the trainers and social media posts.

The top management of MC Johi, CMO and Chairman, appreciated this training event and awarding appreciation letter. The CMO graced the opening ceremony and the Chairman honored the closing ceremony and awarded the certificates to the participants. The vice chairman of municipal committee Johi also attended the training himself for four days.

The participants provided feedback on the training evaluation questionnaire as well as verbally. The majority of the participants rated training as an excellent opportunity of learning. They gave positive feedback on the training content, training facilitators' instructional techniques and training relevance to their job responsibilities. The participants suggested that the trainings should be organized from time to time.

The majority of the participants showed satisfaction on the contents of training and understood the concept of the best practices related to municipal essential services, operation and maintenance of the water treatment plants, sewage collection technical skills, ecosystem management with a focus on environmental health and safety.

Media representative also visited the training venue and appreciated it. He gave media coverage to training and published a brief news report in daily newspaper.

## 7 Concluding of Training Program

In the end of the last session, the training effectiveness evaluation was made by the participants and then the post-test was administered. The trainers reiterated the importance of organizing training and expressed a hope that the trainees will apply the learnt concepts in their daily assigned tasks and improve the performance of MC Johi.

### 7.1 Award Ceremony

Mr. Abdul Majeed Jamali, Chairman Municipal Committee Johi graced the training as a Chief Guest on the closing ceremony of four days' local level training. He encouraged the participants for attending the training and expected best performance from the trainees. He appreciated the efforts of MSDP, USAID and MDC for organizing such a wonderful training in their MC.

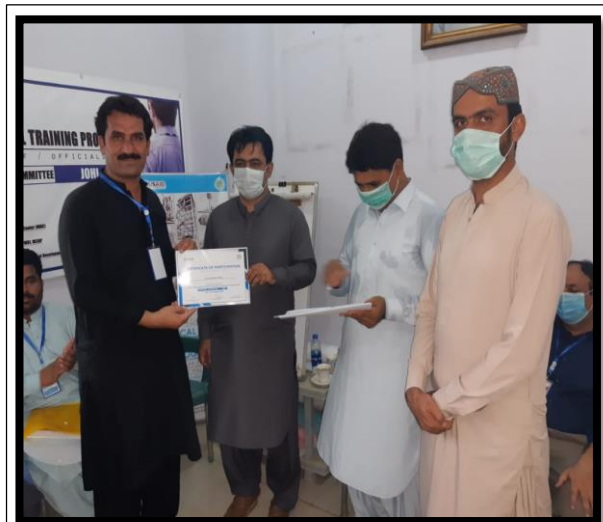
The participants submitted their recommendations for the improvement of their municipal committee on the occasion. The participants appreciated this training and stressed the need for frequently conducting these types of trainings in future.

Certificates on successful completion of the training were awarded to the training participants by the Mr. Abdul Majeed Jamali, Chairman MC Johi and training facilitators.

The vote of thanks and concluding remarks were given by Mr. Muhammad Ali Mahesar, Team Leader, LGSA. On the occasion he appreciated the cooperation of MSDP, USAID and the CMO and Chairman Municipal Committee Johi. The participants were also appreciated for their active participation during the training sessions and positive response.



**Mr. Abdul Majeed Jamali, CMO Johi  
During Concluding Ceremony**



**Training Participants Receiving Training  
Completion Certificates**

## Annexure – I: Training Agenda

### Day 1, Break up

| Time                | Topic/Activity   | Learning Objectives  | Methodology  | Learning Outcomes  |
|---------------------|--|--|--|--|
| 9:00 am - 9:30 am   | Reception/Registration of the course participants  |  |  |  |
| 9:30 am - 9:35 am   | Recitation of Holy Quran   |  |  |  |
| 9:35 am - 9:45 am   | Inaugural Address by Chief Guest   | Ceremonial Opening of The Training Event   | Speech   |  |
| 9:45 am - 10:00 am  | Introduction of LGSA and Local Level Training By   | Sharing the rationale and objectives of local level training   | Presentation   |  |
| 10:00 am - 10:20 am | Introduction of Resource Persons and Training Participants   | Ice breaking and creating friendly and conducive learning environment  | Interactive Session  | The Participants will have to developed familiarity with faculty and with each other   |
| 10:20 am - 10:30 am | Pre-test   | Assessment of current level of knowledge of the participants related to the topics of this training  | Short quiz   | Learning of the participants after attending this training   |
| 10:30 am - 11:00 am | Tea Break  |  |  |  |
| 11:00 am - 1:00 pm  | Significance and meaning of Best Practices of Municipal Services System. By Mr. Zulifqar Dhakan        | To present the concept and importance of best practices of Municipal Services system.  | Presentation and discussion  | The participants will develop an appreciation and understanding of the best practices  |
| 1:00 pm - 2:00 pm   | Lunch Break  |  |  |  |
| 2:00 pm - 3:00 pm   | International best practices of Municipal Services System (Videos showing) by Mr. Abdul Haque Banglani | The participants will get awareness into international best practices of water supply, Wastewater management, solid waste management environmental management systems. | Sharing Videos & discussion on international best practices  | The participants will have a point of comparison and criteria to understand their MC performance   |
| 3:00 pm - 3:15 pm   | Tea Break  |  |  |  |
| 3:15 pm - 4:45 pm   | Group work I (Group work I & II are interlinked)   | The participants will work in groups to discuss about “what are the best practices in their respective municipality?” and identification of areas for improvement.     | The participants will be divided into small homogeneous groups and assigned different municipal services area for working and sharing. | The participants will be cognizant about strong and weak areas/points of their MCs and be motivated to play their roles toward the improvement of municipal services |
| 4:45 pm - 5:00 pm   | Evaluation of Day 1  |  | Filling Out of Evaluation Form   |  |



## Day 2, Break up

| Time               | Topic/Activity  | Learning Objectives  | Methodology                                   | Learning Outcomes   |
|--------------------|---|--|---|---|
| 9:00 am - 9:15 am  | Recap of the day 1  |  | Interactive discussion                        |   |
| 9:15 am - 11:00 am | Operation and Maintenance of Water and Wastewater Treatment Plants by Mr. Zulifqar Dhakan                           | The participants will acquire technical/procedural skills of<br>a. Adding chemicals, such as ammonia, chlorine, or lime, to disinfect and deodorize water and other liquids for water treatment.<br>b. Collect and test water and sewage samples<br>c. Operate and adjust controls on equipment to purify and clarify water, process or dispose of sewage, and generate power. | Demonstration and practical exercises         | The participants will be skilled at:<br>a. Controlling Machines and Processes as per standards (SOPs)<br>b. Analyzing information and evaluating results to choose the best solution and solve problems (water quality).  |
| 11:00 am - 11:30am | Tea Break   |  |   |   |
| 11:30 am- 1:00pm   | Discussion and sharing of participants' experiences related to Water and Wastewater Treatment in their municipality | The participants will learn with each other's experiences and knowledge  | Interactive discussion                        | Enhanced understanding of their municipality in terms of water and wastewater treatment systems   |
| 1:00 pm - 2:00 pm  | Lunch Break   |  |   |   |
| 2:00 pm- 3:00 pm   | Supervision of Water & Wastewater Treatment Plants. By Mr. Abdul Haque Banglani                                     | The participants will learn about:<br>a. how to record operational data i.e. meter and gauge readings on specified forms and personnel attendance.<br>b. Inspect equipment or monitor operating conditions, meters, and gauges to determine load requirements and detect malfunctions.   | Training by simulation, exercise and practice | The participants will be skilled at<br>a. evaluating Information to determine Compliance with Standards by using relevant information and judgment to determine whether events or processes comply with laws, regulations, or standards<br>b. monitoring the Processes and materials<br>c. information processing like compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data |
| 3:00 pm - 3:15 pm  | Tea Break   |  |   |   |
| 3:15 pm- 4:45 pm   | The above session continued   |  |   |   |
| 4:45 pm - 5:00 pm  | Evaluation of Day 2   |  | Filling Out of Evaluation Form                |   |

### Day 3, Break up

| Time                | Topic/Activity   | Learning Objectives  | Methodology   | Learning Outcomes   |
|---------------------|--|--|---|---|
| 09:00 am - 9:15 am  | Recap of Day 2   |  | Interactive Discussion  |   |
| 9:15 am- 11:00 am   | Solid Waste Management<br>By Mr. Abdul Haque Banglani                        | The participants will acquire technical/mechanical skills of:<br>a. Operating automated or semi-automated hoisting devices i.e. how to raise refuse bins and dump contents into openings in truck bodies.<br>b. Inspection of trucks prior to beginning routes to ensure safe operating condition.<br>c. driving street cleaning trucks, through residential streets and business areas.<br>d. dumping refuse or recyclable materials at disposal sites. | Demonstration through mock-ups, computer simulation and practice  | The participants will be competent:<br>a. to inspect equipment, structures and material to ensure the efficiency and problem shooting.<br>b. to operate/drive cleaning vehicles and mechanized devices.<br>c. to control machines, equipment and processes. |
| 11:00 am - 11:15 am | Tea Break  |  |   |   |
| 11:15 am - 1:00 pm  | Water Supply System and Distribution Pump Stations<br>by Mr. Zulifqar Dhakan | The participants will acquire technical/electrical skills related to<br>a. pump applications including mechanical and electrical devices/processes<br>b. operation of pumps, their drives and accessories to sustain a desired level of performance and reliability<br>c. remote control of electric motors<br>d. scheduling of pump operations to minimize electrical consumption   | Virtual reality/computer simulation, vestibule training and practice  | The participants will be<br>a. maintaining and operating water supply/distribution pump stations effectively and efficiently<br>b. on the job troubleshooting at the pump stations  |
| 1:00 pm - 2:00 pm   | Lunch Break  |  |   |   |
| 2:00 pm – 3:30 pm   | Sewage Collection Management<br>By Mr. Abdul Haque Banglani                  | The participants will acquire the skills of<br>a. cleaning of manholes and sewer lines<br>b. prevention of clogging and detection of hazards<br>c. line lamping and visual inspection  | Training by simulation and demonstrations   | The participants will be competent<br>a. to use mechanical and hydraulic methods of cleaning sewer and manholes<br>b. safe management and collection of sewage  |
| 3:45 pm- 4:00 pm    | Tea Break  |  |   |   |
| 4:00 pm- 4:15 pm    | Activity/visit (as per availability/ convenience)                            | The participants will get familiarized with the equipment; machines & vehicles available within the MC   | The participants will visit/inspect and try to operate the equipment under the supervision of the trainers. | The participants will be able to operate the equipment more effectively   |
| 4:15 pm - 4:00 pm   | Evaluation of Day 3  |  | Filling Out of Evaluation Form  |   |

### Day 4, Break up

| Time                | Topic/Activity  | Learning Objectives   | Methodology  | Learning Outcomes   |
|---------------------|---|---|--|---|
| 09:00 am - 9:15 am  | Recap of Day 3  |   | Interactive Discussion   |   |
| 9:15 am - 11:00 am  | Environmental Health and Safety Management System<br>By Mr. Zulifqar Dhakan | The participants will learn skills to<br>a. prepare strategy for reducing environmental impacts as per regulatory requirements<br>b. to conserve natural resources and to ensure economic benefits<br>c. to limit health and safety risks for people.   | Presentation and discussion  | The participants will be skilled at<br>a. Complying with all applicable federal, state, and local laws and regulations<br>b. conserving natural resources and prevent pollution   |
| 11:00 am - 11:15 am | Tea Break   |   |  |   |
| 11:15 am - 1:00 pm  | Occupational Health and Safety by Mr. Abdul Haque Banglani                  | The participants will acquire the skills of<br>a. operating equipment and machines safely and conduct themselves in a safe manner.<br>b. reporting of absence/defect in any equipment & protective devices to the supervisor<br>c. practicing overall standard operating procedures for machines, equipment and processes.<br>d. complying with all Municipal health and safety policies and procedures<br>e. proper usage of personal protective and/or safety equipment | Computer simulation, demonstration and practice  | The participants will be skilled at<br>a. operating machines and equipment safely by following the SOPs and complying with the health and safety policies<br>b. notifying any hazards at the workplace and defects/malfunction of mechanical/electrical devices, machines and systems |
| 1:00 pm - 2:00 pm   | Lunch Break   |   |  |   |
| 2:00 pm - 3:30 pm   | Group work II (Connected to group work I)                                   | The participants will come up with the suggestions (related to the challenges identified during group work I) and acquire clarity of their roles for bringing about positive change in their municipality.  | The participants will be divided into heterogeneous groups Each group will prepare a presentation on the “handling of MC challenges that would have been identified during group work I. | The participants would have developed their capacity to handle the challenges proactively in their MCs  |
| 3:30 pm - 3:45 pm   | Evaluation of Training  |   | Filling Out of Evaluation Form   |   |

| <b>Time</b>          | <b>Topic/Activity</b>   | <b>Learning Objectives</b> | <b>Methodology</b>                                      | <b>Learning Outcomes</b> |
|----------------------|---|----------------------------|---|--------------------------|
| 3:45 pm -<br>4:15 pm | Post-training test &<br>Feedback of<br>Training<br>Participants |                            | Quiz and<br>Interactive<br>Discussion                   |                          |
| 4:15 pm -<br>4:45 pm | Certificate<br>Distribution<br>Ceremony                         |                            | Awarding<br>Certificates to<br>Training<br>Participants |                          |
| 4:45 pm –<br>5:00 pm | Concluding<br>Remarks and Vote<br>of Thanks<br>By Muhammad Ali  |                            | Speech  |                          |
| 5:00 pm              | Refreshment   |                            |   |                          |

Operation and Maintenance  
of  
Municipal Services  
by  
Engr. Zulfiqar A. Dhakan, P.E.  
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Quality, Environment, Food Safety, Health & Safety  
Global G.A.P, HACCP and GMP Professional Trainer

**Session Objectives**

**To present the concept and importance of best practices of Municipal Services system.**

**Definition of Best Practices**

***Best practice can be defined as the optimal method of solving a given problem or accomplishing a certain goal that can be shared and used by others.***

***Using the experience of other municipalities is not about searching for the 'golden rule' but for good, proven practices!***

***Using "best practices" means creatively applying the experience of others to the development of one's own community.***

## Best Practices in Municipalities

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**The** achievement of high standards in municipal service delivery is result of three interacting factors.

- role of local government,
- decentralization,
- appropriate leadership and willingness to improve service delivery through best practices.

## Best Practices in Municipalities

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**Best** Practice enables municipalities to demonstrate their efficiency and effectiveness and proves they are competent organizations.

**By** demonstrating what they can do at their best, best practice offers to municipalities the means to respond to the Government and certifies their readiness for greater responsibilities.

## Best Practices in Municipalities

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**Every** country has its own good practice, which is home-grown, springs from the quality of municipal leadership, management and front-line staff, and from people that pride themselves in giving their best to achieve high quality.

**Best** Practice is about identifying this good practice, celebrating it and transforming it into a training vehicle from which every other municipality can learn.

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**Municipalities** differ from each other for historical or cultural reasons; because some of them are responsible for villages and other for cities; because they have a lot or a few of specialist staff; or finally because they have a lot of investment to manage or none.

**It** goes without saying, that they will handle everyday challenges in different ways.

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**For** example, some municipalities who tend to avoid change will follow the same procedures for years, repeatedly achieving good effects or making the same mistakes afraid that a new approach might give rise to new problems or create risks.

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**By** contrast, others will constantly look for improvements and incentives with the belief that things could always improve.

**Hence**, they constantly look for better solutions and are ready to manage the risk.

Operation & Maintenance  
of  
Water & Wastewater Treatment Plants  
by  
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## Learning objectives

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**The participants will acquire technical/procedural skills of**

- a. Adding chemicals, such as ammonia, chlorine, or lime, to disinfect and deodorize water and other liquids for water treatment.
- b. Collect and test water and sewage samples
- c. Operate and adjust controls on equipment to purify and clarify water, process or dispose of sewage, and generate power.

## Learning outcomes

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**The participants will be skilled at:**

- a. Controlling Machines and Processes as per standards operating procedures (SOPs)
- b. Analyzing information and evaluating results to choose the best solution and solve problems (water quality).



## Operation and Management of Water Treatment Plant

- The principal objective therefore of water treatment is to produce water that is fit for domestic use reliably and consistently from a raw water source at a cost that is reasonable to the consumers.
- A water treatment plant employs many individual treatment processes (sometimes called unit processes and unit operations) that are linked in a process train to produce water of the desired quality.

continued

- There is an increasing demand for services and rising service expectations of customers and increasingly stringent regulatory requirements calls for a need to manage safe drinking water supply effectively and efficiently Proper process and plant design and proper operation and control of water treatment processes and plant are both essential for efficient and cost-effective production of water of the desired quality.

continued

- Process and plant design are fixed once the plant has been constructed, after which it is the ongoing responsibility of the plant manager and process controllers to cost-effectively produce water of the required quality.
- Water treatment plant operations and maintenance are the decisions and actions regarding the control and upkeep of property and equipment.

continued

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- Operations are the activities to make sure the plant produces the desired quality and quantity of treated water and meets the current legislation.
- While maintenance are the activities to make sure the plant equipment continues to work efficiently to achieve the operational objectives

continued

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- It is evident that over the lifespan of a treatment plant proper operation and control has the most significant influence on treated water quality.
- It is therefore essential that effective control measures should be in place to prevent problems from developing or to detect potential problems as early as possible in order to take corrective action.

continued

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- The plant control philosophy should be based on the design philosophy, nature and quality of the raw water, plant conditions, available staff, economics and the community it serves.
- The control philosophy and control measures must be uncompromising as far as treated water quality and protection of the health of the community is concerned.

## Water Contamination

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- Safe drinking water is a critical component of human life, but pollution threatens many of our water supplies. Numerous types of contaminants can threaten drinking water.
- They include chemicals, pesticides, animal waste, overflowing sewers, agriculture and industrial waste injected into the ground. Naturally occurring substances, such as arsenic, radon and fluoride, can also contaminate groundwater.

### Continued

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- Contaminated water can cause considerable health problems, ranging from gastrointestinal illnesses to neurological problems to cancer.
- In the case of pathogens that cause waterborne disease, the effects are usually noticed rapidly.

### Continued

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- A person who drinks water containing bacteria or a virus will often develop diarrhea, nausea, vomiting and other acute gastrointestinal symptoms. In severe cases, these symptoms can lead to dehydration and death.
- Likewise, ingesting large amounts of copper-contaminated water may cause nausea, vomiting and diarrhea. Extremely high amounts can cause liver and kidney damage and even death.

## Supervision of Waste Water Treatment plant



## Technical Staff Deputed On Combined Effluent Treatment Plant

| S.No | Names             | Designation               |
|------|-------------------|---------------------------|
| 01   | Syed Faisal Ikram | Plant Manager             |
| 02   | Kashif Arain      | Lab-Technician/Supervisor |
| 03   | Bashir Ahmed      | Electrician               |
| 04   | Mohsin Shoro      | Plant Operator            |
| 05   | Aftab Hussain     | Plant Operator            |
| 06   | Mehboob Shoro     | Plant Operator            |
| 07   | Shakeel Shah      | PLC Technician            |
| 08   | Baber Ali         | Plant Operator            |
| 09   | Muhammad Taymoor  | Lab-Assistant             |
| 10   | Rashid Ali        |                           |

| S.No. | Name Of Tank  | Capacity        |
|-------|---|-----------------|
| 01    | Inlet Pipe Dia 3 feet from Industrial Area Kotri    |                 |
| 02    | Screen ChaneI                                       |                 |
| 03    | Equalization Tank                                   | 1000000 Gallons |
| 04    | Oil And Sand Separation                             | 10000 Gallons   |
|       | Chemical Dosing Building with Tanks 8x1500 Gallons  | 12000 Gallons   |
| 05    | Coagulation tanks 4 Nos 4x5000 Gallons              | 20000 Gallons   |
| 06    | Flocculation Tanks 2 Nos 2X10000 Gallons            | 20000 Gallons   |
| 07    | Chemical Distribution chamber D-1                   | 3000 Gallons    |
| 08    | Chemical Sedimentation Tanks 2 Nos 2x500000 Gallons | 1000000 Gallons |
| 09    | Chemical Scum Chamber                               | 1000 Gallons    |
| 10    | Chemical Sludge Chamber D-2                         | 3000 Gallons    |
| 11    | Distribution Chamber D-3                            | 3000 Gallons    |
| 12    | Neutralization Chambers 2 Nos 2x10000 Gallons       | 20000 Gallons   |
| 13    | Aeration Tanks 02 Nos 2x1250000 Gallons             | 2500000 Gallons |
| 14    | Biological Distribution Chamber D-4                 | 3000 Gallons    |
| 15    | Biological Sedimentation Tanks 2 Nos 2x500000       | 1000000 Gallons |
| 16    | Biological Sludge Chamber                           | 3000 Gallons    |
| 17    | Belt Press building, panel Room, Air Blower Room    | In 1 Building   |
| 18    | Chlorination Tank                                   | 20000 Gallons   |
| 19    | Soft Water Tank                                     | 3000 Gallons    |

## Equalization Tank



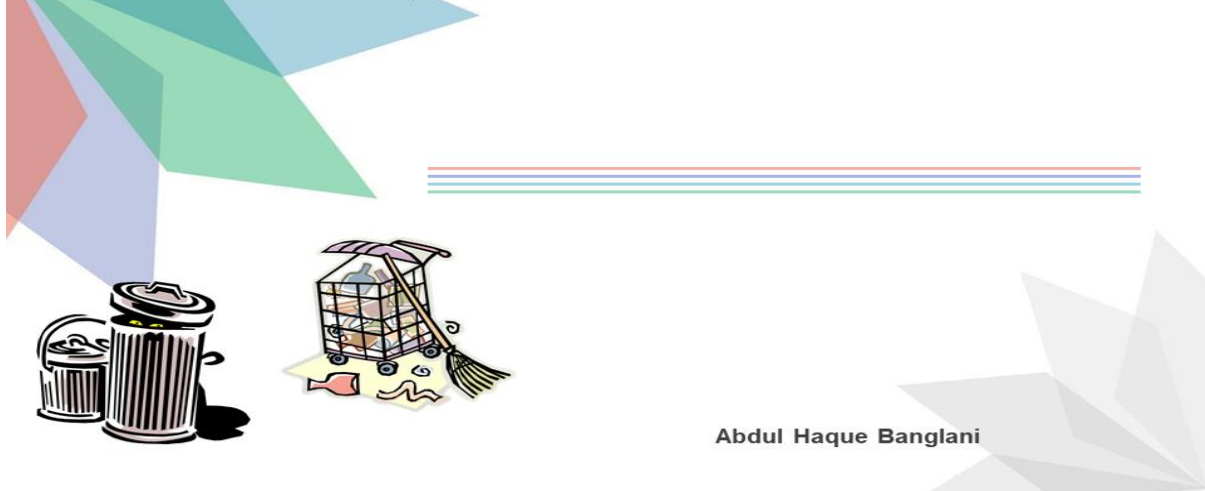
## Oil And Sand Separation



## Chemical Dosing Building with Tanks 8x1500 Gallons



## Introduction to Municipal Solid Waste and its Generation



Abdul Haque Banglani

## Waste

- Waste is a left over, a redundant product or material of no or marginal value for the owner and which the owner wants to discard
- It is how the owner values an item
- Becoming a waste , may depend on many factors:

Time: during war time or embargo – owner will use and repair items – hard to find them

Location: farming community use food waste for animals feeding

State: whether repairable or not (price, age, type of damage)

Income level: higher income more food wastage or more items discarded, change of FASHION, up to date

Personal Preferences: some people like and keep old things and others throw

## Solid Waste

- **Solid waste comprises of all wastes arising from human and animal activities that are normally solid but may also include semisolid**
- **Waste is a consequence of life**
- **The city of Mohenjo-Daro & Harappa, people had rubbish collection systems**



## Solid Waste In Pakistan

**-In Pakistan about 65,000 tones is generated daily (35,000 tones from urban areas)**

- Punjab generates 35,000 tones
- Lahore 6,000 tones
- Karachi 10,000 tones
- Peshawar 650 tones
- Islamabad 500 tones,
- Rawalpindi 800 tones
- On the average generation rate ranges 0.2-0.5 kg/person/day

### Timeline

Municipal Solid Waste Generation, Storage & Handling Techniques At Source



## Municipal Solid Waste

Municipal solid waste (also called trash or garbage) is defined as wastes consisting of everyday items that are discarded by the public or produced as a result of construction and demolition activities and cleaning of streets/drains.



Product Packaging



Plastic Plates/Cups



Grass Clippings/  
Yard Waste



Clothing & Broken  
Furniture



Construction &  
Demolition Waste



Bottles And Cans



Food Scraps



Papers



Appliances/Electronics



Tires



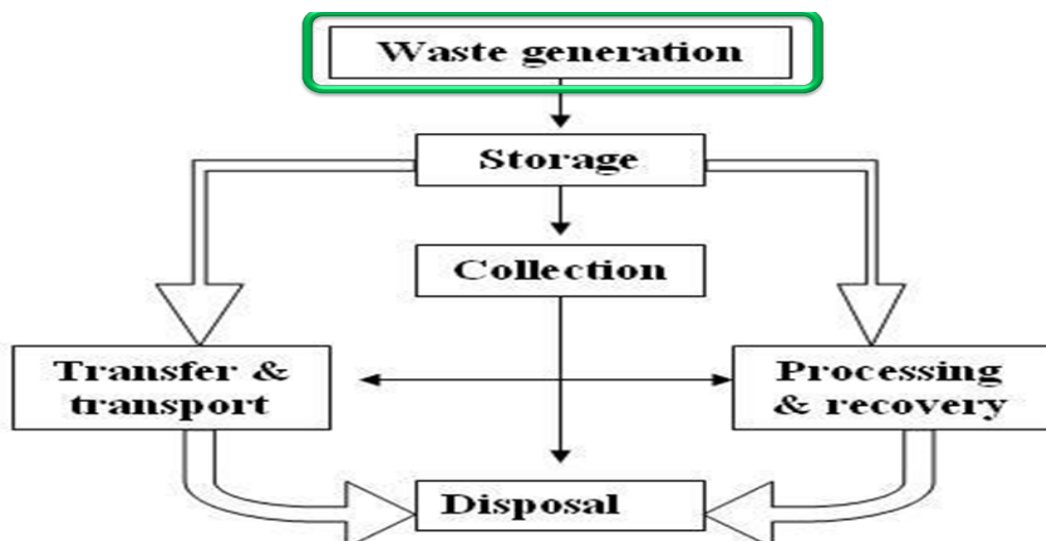
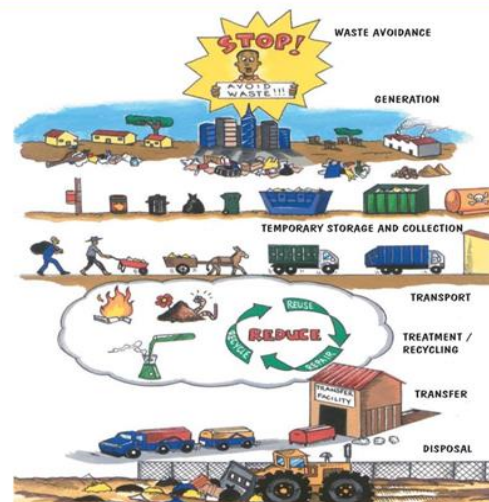
Dead Animals



Streets Cleaning Waste

## Municipal Solid Waste Management (MSWM)

Municipal solid waste management is associated with the control of **generation, storage, collection, transfer and transport, processing, and disposal** of municipal solid waste in a manner that is in accordance with the best principles of public health, economics, engineering, conservations, aesthetics and other environmental considerations and that is also responsive to public attitudes.





# Water Supply System & Distribution Pump Stations

by  
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## Water Supply System

- Water Supply is now previewed as community-based demand driven system, under which it is essential to enhance capacity of local community residing in villages and small towns to develop and manage their own water supply systems.
- Role of community groups is to ensure effective and participatory implementation of water supply system in their village/town, water quality control, financial management and effective operation and maintenance of water supply system established



Continue

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- Hence, it is evitable that such community groups are aware about the basics of water supply system, operation and maintenance of water assets and water supply system as well as basics of sanitation and waste management.
- Typical Village/town water supply system constitutes of a gravity/pumping based transmission and distribution system from local/distant water source with needed water treatment system.

## Water Supply Mechanism

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- **Pump House and Pumping Machinery**
  - Pump is used to fetch water from source like bore well, open well, sump or ground water storage and supply it to pipelines or elevated storage.
  - There are three main components: a) pump, b) electrical or oil engine, c) panel board.
  - Pump house is constructed for security and safety of machineries.
- **Rising Main**

The delivery line carrying water from pump to storage tank (elevated or ground) is called rising main.

Continue

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- **Storage Facilities**

*There are different types of storage facilities as follows:*

  - **Elevated Surface Reservoir (ESR)** or elevated storage tank: ESR is constructed, where water is to be supplied at elevated height (less than the level of ESR) or where the distance is large, and topography is undulating.
  - **Ground Service Reservoir (GSR):** GSR is ground level or plinth level storage tank. The plinth level is generally not more than 3 m.  
Storage capacity of the service reservoirs is estimated based on pumping hours, demand and hours of supply; electricity available for pumping.
  - **Sump:** Sump is used as additional storage at village / town level or cluster level. It is not used for direct distribution of water. Rather, it is used as intermediate or contingency storage, to store water before it is pumped to ESR/GSR. The underground storage tank in circular shape with dome line covering is called sump.

## Water Distribution

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For efficient distribution, it is required that water should reach to the end user with required flow rate and pressure in the piping system. There are three main types of distribution system that can be adopted in villages/towns:

**Gravity Fed Distribution:** When the ground level of water source/storage is sufficiently raised than the core town area, such system can be utilized for distribution. The water in the distribution pipeline flow due to gravity and no pumping is required. Such system is highly reliable and economical.

Continue

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**Pumping System:** In such system, water is supplied by continuous pumping. Treated water is directly pumped into the distribution main with constant pressure without intermediate storing. Such system works only in condition where there is continuous power supply, reliable water source and where intermediate storage system cannot be installed.

**Dual/ Combination:** In such system, both gravities as well pumping systems are used. Such systems are used where there are variations in topography in town.

## Type of Water Supply

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▪ **Continuous**

- In this system, there is continuous water supply (for 24 hours).
- This is possible where adequate quantity of water is available.
- The major advantage of such system is that due to continuous water supply, water remains fresh and rusting of pipes will be low.
- However, losses of water will be more in case of any leakage.

# Sewage Collection Management

Dr. Waqar Ahmed

## Session Plan

- Learning objectives
  - The participants will acquire the skills of
    - a. cleaning of manholes and sewer lines
    - b. prevention of clogging and detection of hazards
    - c. line lamping and visual inspection

## Concept of Sewage Collection Management

- The terms "sewage" and "sewerage" mean the same thing. However, sewerage refers to the infrastructure that conveys sewage (sewerage system in British English sewage system in American English). The term sewage is nowadays regarded as an older term and is being more and more replaced by "wastewater".

## Inspection Techniques

- Usually the sewer systems are inspected visually by mobile closed-circuit television (CCTV) systems or human inspectors. Most sewer lines are inspected using one or more of the following techniques:
- Closed-circuit television (CCTV).
- Cameras.
- Visual inspection.
- Lamping inspection.

## Sewer Cleaning Methods

- The municipalities worldwide are taking proactive measures to improve performance levels of their sewer systems. Cleaning and inspecting sewer lines and manholes are essential to maintaining a properly functioning system.

| Type of Technology | Uses and applications   |
|--------------------|---|
| <b>Mechanical</b>  | <p><b>Rodding:</b></p> <ul style="list-style-type: none"> <li>• Uses an engine and a drive unit with continuous rods or sectional rods.</li> <li>• As blades rotate, they break up grease deposits, cut roots, and loosen debris.</li> <li>• Rodders also help thread the cables used for TV inspections and <b>bucket machines</b>.</li> <li>• Most effective in lines up to 300 mm (12 inches) in diameter.</li> </ul> <p><b>Bucket Machine</b></p> <ul style="list-style-type: none"> <li>• Cylindrical device, closed on one end with 2 opposing hinged jaws at the other.</li> <li>• Jaws open and scrape off the material and deposit it in the bucket.</li> <li>• Partially removes large deposits of silt, sand, gravel, and some types of solid waste</li> </ul> |

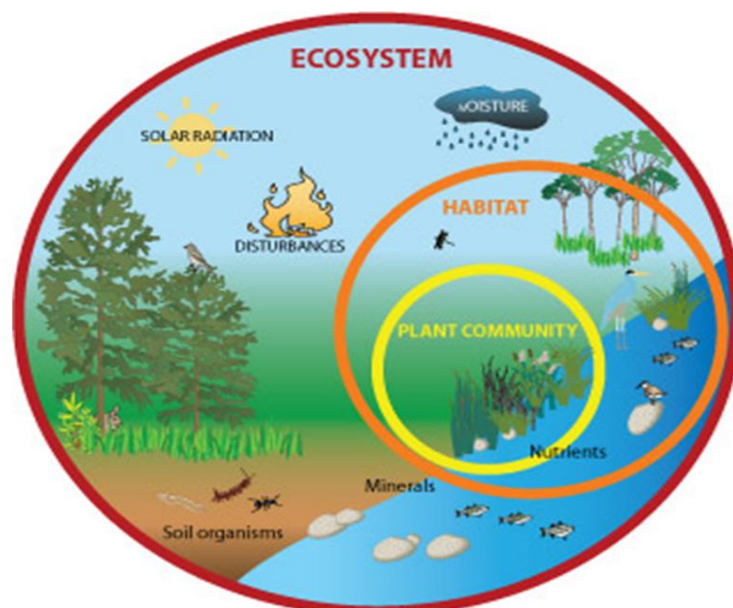
# Environmental Health and Safety Management System

Tanveer Ishrat & Zulfiqar Dhakan

## EHS

*Environmental protection and safety at work*

Organizations and businesses are required to ensure the health and safety of all the stakeholders under an **ecosystem management** approach.

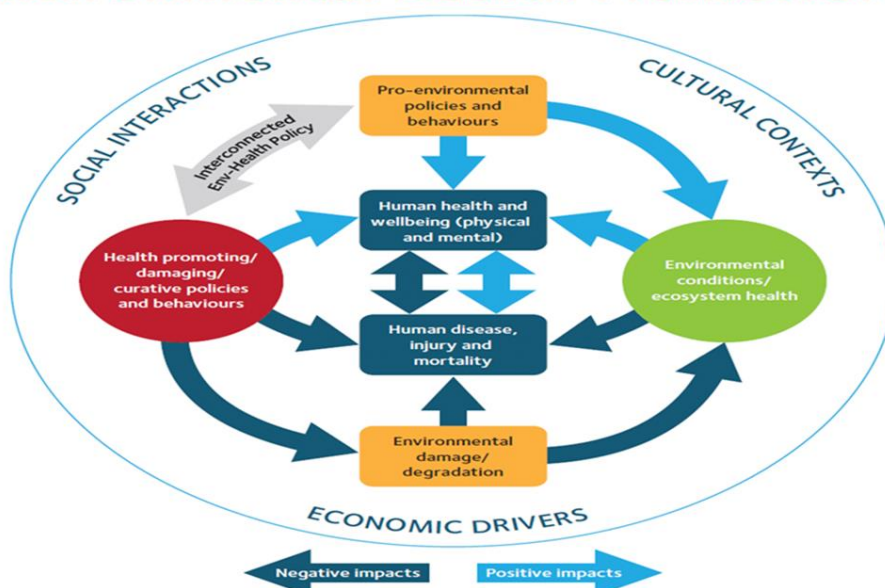


## Ecosystem Management Framework



**“Environmental health includes both the direct pathological effects of chemicals, radiation and some biological agents, and the effects (often indirect) on health and well-being of the broad physical, psychological, social and cultural environment, which includes housing, urban development, land use and transport”.**  
WHO (1999)

## Environmental Health Framework



**Environmental health and safety is about creating a systemic approach to complying with environmental regulations at national and local levels.**

**Pakistan Environmental Protection Agency (Ministry of Climate Change) is responsible to implement the Pakistan Environmental Protection Act, 1997 in the country for the protection, conservation, rehabilitation and improvement of environment, for the prevention and control of pollution, and promotion of sustainable development.**





## Environmental Health and Safety Regulations

*complying with environmental regulations at national and local levels*

- The project proponents are required to conduct Initial Environment Examination (IEE) or Environment Impact Assessment (EIA) as per SEPA requirements and guidelines in the province of Sindh.
- The municipal services projects related to urban development, water supply & treatment and waste disposal are included in the list of projects requiring an IEE and EIA.

Environment, health and safety management model



## SUSTAINABLE DEVELOPMENT GOALS



### Annexure – III: Attendance Sheet

**ATTENDANCE SHEET**

USAID

Attendance Sheet  
 4-Day Local Level Training, MC Johi, Dadu District  
 August 4-7, 2020.

| S. No | Name of Participant     | Designation              | Day 1 | Day 2 | Day 3 | Day 4 | Signature   |
|-------|-------------------------|--------------------------|-------|-------|-------|-------|-------------|
| 1     | Ghulam Hussain Thaheem  | Vice Chairman            | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 2     | Ghulam Nabi Jiskani     | Asst. Tax Superintendent | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 3     | Shamsuddin Panhwar      | License inspector        | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 4     | Nisar Ahmed Jessar      | Head Clerk               | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 5     | Muhammad Usman Babar    | Sr. A/C Clerk            | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 6     | Khamiso Khan Jamali     | Encroachment Inspector   | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 7     | Ghulam Yaseen Panhwar   | Computer Operator        | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 8     | Rashid Hussain Jamali   | Junior Clerk             | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 9     | Ghulam Farooque Laghari | Junior Clerk             | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 10    | Sijad Hussain Laghari   | Junior Clerk             | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 11    | Allah Dino Jamali       | Tracer                   | ✓     | ✓     | ✓     | ✓     | [Signature] |
| 12    | Nazir Ahmed Jamali      | Junior Clerk             | ✓     | ✓     | ✓     | ✓     | [Signature] |

|     |                           |                     |   |   |   |   |             |
|-----|---------------------------|---------------------|---|---|---|---|-------------|
| 13. | Ayaz Ali Babar            | Sanitary Supervisor | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 14. | Ali Asghar Panhwar        | Sr. Clerk           | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 15. | Barkat Ali Rind           | Octroi Inspector    | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 16. | Ubedullah Khan            | Junior              | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 17. | Sajjad Ali Jamali         | Work Mistri         | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 18. | Aijaz Ahmed Jamali        | Work Mistri         | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 19. | Asif Ali Jamali           | Draftsman           | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 20. | Zahid Hussain Lashari     | Councilor           | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 21. | Azeem Bahoto              | Dispatch Rider      | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 22. | Ali Akbar Mastoi          | Naib Qasid          | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 23. | Mohammad Alam Bahoto      | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 24. | Waseem Memon              | Naib Qasid          | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 25. | Mujeeb Ahmed Thaheem      | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 26. | Abid Hussain Thaheem      | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 27. | Muzfar Ali Rind           | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 28. | Mohammad Siddique Alkhani | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 29. | Karim Bux Jamali          | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |
| 30. | Zahid Hussain Siyal       | Sanitary Worker     | ✓ | ✓ | ✓ | ✓ | [Signature] |

**Annexure – IV: Photo Gallery**

