

Lesson Plan 5: Importance and Safe Use of Latrine**90 minute****Lesson description**

In this lesson plan participant will identify the medium of communicable disease transmission, identify different types of latrine and its necessity for safe disposal of feces.

Learning outcomes

1. Explain Route of Transmission (RoT) of communicable diseases.
2. Discuss the importance of latrine.
3. Identify types of latrine focusing on locally appropriate technologies for safe disposal of feces.

Materials

- Brown sheet paper
- Marker
- Masking Tape
- 5F-Diagram cards
- 5F-diagram flex
- Picture of different types of latrine

Preparation

- ◆ Write learning outcomes on flip chart paper
- ◆ Prepare 5 stations with one set of 5F diagram (GoN) cards in each station
- ◆ Prepare route of transmission flex of CAWST for summary (5F diagram flex)
 - *Each set contains one specific transmission route. For example, flies; fingers; fluids; fields; and fowls (animals like dogs, chickens etc.)*
- ◆ Collect the poster of F-Diagram and pictures of different types of latrine.

Introduction**10 minutes**

1. Inform participants that they will be provided pictures and they have to touch, feel and smell the picture with their eyes closed.
2. Ask participants to close their eyes and provide the pictures of feces to the participants and ask them to touch, feel and smell without looking at the picture.
3. Once all have completed the actions ask participants to open their eyes and finally see the pictures. Note the reactions of participants.
4. Ask participants for their reaction, how they feel while following the instruction and doing so.
5. After the expression of participants, again ask them if they have ever eaten it.
Possible answer: No
6. Inform participants that by the end of the session, we will come up with the answer and present learning outcomes.

Disease Transmission Route and Barrier**20 minutes**

1. Inform participants that they are going for a group activity. For this the participants will be divided into 5 groups and each group will be assigned to a station with 5 cards. And in their groups participants are to arrange the cards in chronological order.

2. Give 5 minutes time for the activity. After the time, ask groups to present one at a time by showing their cards to large groups and discussing more.
3. After all groups have presented it summarize the route of transmission by demonstrating flex of 5F diagram.
4. After summarizing the route of transmission cards, also discuss more on the barrier of each route of transmission by placing a barrier card in the route of transmission.

Importance of latrine**50 minutes**

1. Ask participants to imagine the village/community with open defecation and what scenarios they can find there.
2. Ask participants to write 1 point in their notebook and share in large group. Ask not to repeat the points.
3. Summarize the points by showing Power Point Slides on importance of latrine.
4. After power-point presentations ask participants, what can be the solution to the issues. *Possible answer: Latrine construction*

Latrine and Types: emphasizing on locally appropriate technologies to manage feces

1. Ask participants if latrine construction is that important, how can one construct latrine, what are things to consider while constructing latrine.
2. Note answers from the participants and summarizing the answers from participants and continue to present power point presentation on types of latrine.
 - a. Before latrine construction: siting, distance from water source, lightening, air flow, inclination of ground, etc.
 - b. During construction: size of latrine, height of latrine, types of latrine (sitting and squatting pan), super structure of latrine, types of collection tank
 - c. After construction; proper operation and maintenance of latrine – daily cleaning after use, maintaining door locks, knobs, handles, ensure availability of water (bucket and mug), cleaning agents (EM, brush, chemicals) etc.

Trainer Note: While discussing the types of collection tank, focus on locally appropriate technologies to manage feces, ex. ECOSAN, Biogas, etc

Review**10 minutes**

1. Divide the participants into 3 groups.
2. Provide each group with brown paper with a topic written in it (Modes of disease transmission, latrine and its types and importance of latrine)
3. Provide 3 minutes to note down key points about the topic.
4. Collect the paper and stick the first one. Ask the other groups if they want to add something (Note: they would not present)
5. Similarly, ask two other groups to do the same
6. Thank all the participants for their active participation.

Reflection on lesson

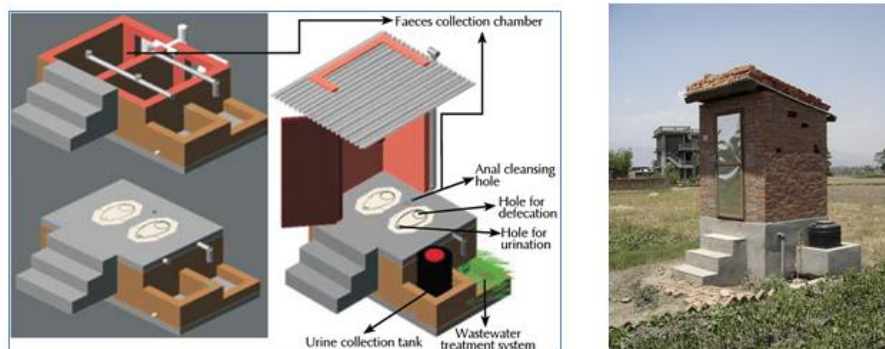
Total Sanitation

Importance and safe use of latrine

Trainer Reference

EcoSan

EcoSan is an environmental friendly sanitation technology, which acknowledges human urine and faeces as valuable resources for agricultural sustainability. Urine contains various elements such as nitrogen, phosphorus and potassium necessary for the plant growth. Human faeces also contains these elements though in lower concentrations along with organic matter essential for agricultural productivity. But unlike urine, faeces contains thousands of bacteria including pathogens. In this regard, in EcoSan toilets, urine and faeces can be collected separately for the use in agricultural field which is fruitful from both environmental and economic point of view. This makes EcoSan toilets different from the conventional toilets. Most of the EcoSan toilets being constructed at present are designed with two concrete chambers of equal volume for faeces collection and a plastic drum for urine collection. Normally, it takes six to seven months to fill one chamber for a family size of 5 to 6. Once one chamber is filled up with faeces, the second chamber is used. By the time this second chamber gets filled, the faeces collected in the previous chamber would be ready to be used as a soil conditioner. The time required to convert the faeces into soil conditioner ensures bacterial die-off. With an assumption of 1.5 L of urination from a person a day and a family size of 5-6 members, a container sufficient to collect urine for 10 days in average is used while constructing EcoSan toilet. The collected urine can either be used in agriculture or in compost preparation. The use of urine in compost increases degradation rate of compost and enhances its nutrient content.



Benefits of EcoSan

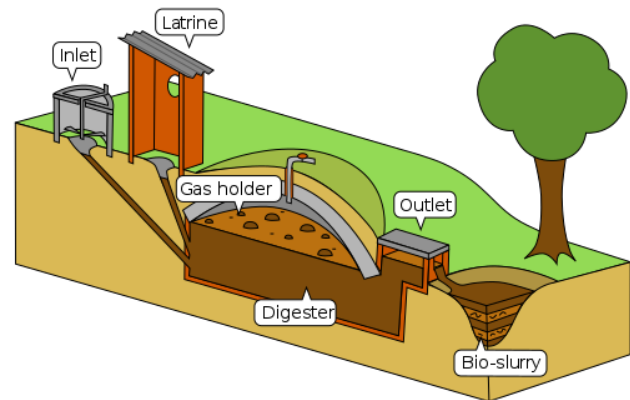
- Use of NPK rich urine as a soil moisturizer
- Water conservation and low wastewater generation
- Decrease in monthly water bills and chemical purchasing cost
- Environmental and water resources conservation

Limitations of EcoSan

- Uncomfortable to use in the beginning as the design is different from the conventional toilets
- Reluctance in acceptance and use
- Lack of farming land limits the application of urine and feces

Bio gas:

Biogas typically refers to a mixture of different gases produced by the breakdown of organic matter in the absence of oxygen. Biogas can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste. Biogas is a renewable energy source. Biogas can be produced by anaerobic digestion with anaerobic organisms, which digest material inside a closed system, or fermentation of biodegradable materials. Biogas is primarily methane (CH₄) and carbon dioxide (CO₂) and may have small amounts of hydrogen sulfide (H₂S), moisture and siloxanes. The gases methane, hydrogen, and carbon monoxide (CO) can be combusted or oxidized with oxygen. This energy release allows biogas to be used as a fuel; it can be used for any heating purpose, such as cooking. It can also be used in a gas engine to convert the energy in the gas into electricity and heat.

**Benefits of biogas**

- There are many advantages to biogas, including:
- The production of valuable green energy (electricity, heating, cooling)
- Reduction of greenhouse gas emissions
- Reduction in nutrient loss and washout from the fields (manure processing plants)
- Recirculation of nitrogen, which reduces the need to use fossil fuels for the extraction of nitrogen from the air
- Recirculation of phosphorous, which helps reducing the pressure on the world's limited phosphorous resources
- Fewer pathogens
- Efficient use of organic by-products
- Reduction of odour emissions (manure processing plants)
- Efficient energy conversion of wet biomasses

Limitations of Bio gas plant

- The process is not very attractive economically (as compared to other bio fuels) on a large industrial scale.
- It is very difficult to enhance the efficiency of bio gas systems.
- Bio gas contains some gases as impurities, which are corrosive to the metal parts of internal combustion engines.
- Not feasible to locate at all the locations.