

# Improving Manure Management practices

Manure is ONLY a very valuable source of soil and plant nutrients if WELL managed !

## Why Manure management (MM)?



### Manure has value!!

Manure contains Nitrogen, Phosphorus and Potassium

Also Micronutrients Iron, Copper, & Manganese

Organic Matter > soil structure  
Microbial biomass > Soil Health



### MM status in EA dairy farms

- Farms applying semi and zero grazing
- High nutrient losses leading to Lower "fertilization" value
- Pollution of air and water resources

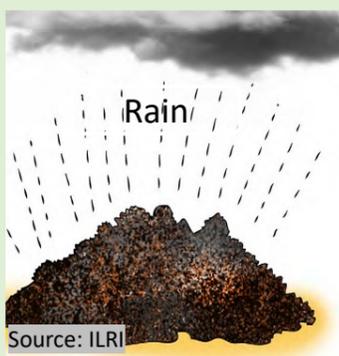
Action needed: Identify and implement practical and feasible manure management practices

## NEADAP PROJECT: Improving manure management Practices: cause of nutrient losses

### 1. Poor storage

- Open manure heaps or piles

**Solution:**  
Covering manure heaps or piles



Lead to losses of valuable nutrients

### 2. Poor Handling of liquid manure & Bioslurry

- Tedious and time consuming
- Solution: Drying and Composting**



### 3. Loss of urine: Urine is a valuable source of N and K but in most cases not collected

**Solution: Separate collection of urine (liquid) and Faeces (Solid) could reduce losses**

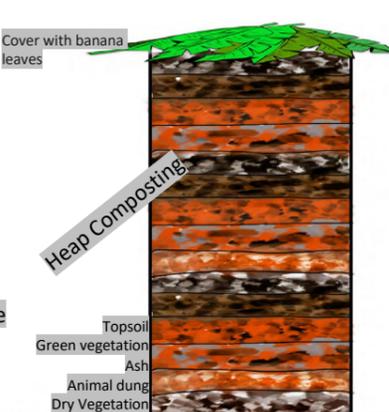
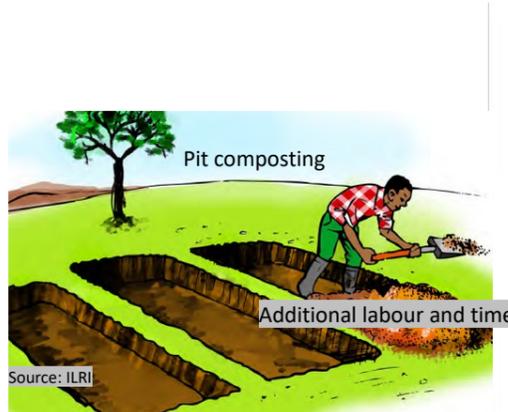
## Proposed Improved manure management Practices: NEADAP is demonstrating and evaluating:

### 1. Use of covers for manure heaps



### 2. Composting of manure slurry

- Composting – Aerobic natural decomposition of organic matter



### 3. Composting of Bio-Slurry (Pit composting)



#### Composting benefits:

- Reduces nutrient losses
- Reduces odor & volume
- Saving nutrients of other vegetative materials
- End product stable and easy to handle and transport
- End product of aerobic composting is hygienic: weed seeds and pathogens are killed
- End product is a marketable product

### 4. Partial separation of manure liquids and solids with closed storage for Liquids

