



Climate Smart Agriculture

Farmer Pocketbook

Rural Development Programme

As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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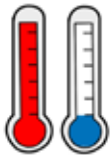
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**Climate Smart
Agriculture**
Farmer Pocketbook

1.0 UNDERSTANDING CLIMATE CHANGE

Climate are weather elements that are experienced in a place over a long period of time



The elements of weather are sunny, rainy, cloud or windy

Climate change increases the incidences of strong winds, floods, drought and pests and disease



Strong Winds



Floods



Pests and
Diseases



Drought

1.2 CAUSES OF CLIMATE CHANGE



Burning



Charcoal making



High animal
Population



Cutting trees



Wrong use of
fertilizers

The major causes of climate change are human activities such as burning, charcoal making, high animal populations cutting trees, use of fertilizers.

1.3

CLIMATE CHANGE IMPACTS ON CROP PRODUCTION



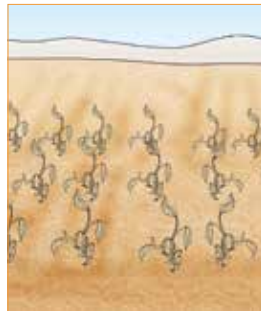
Pests and Diseases



Destruction of crops



Locust invasion



Drying of crops

The impacts will cause low crop yields

1.4 CLIMATE CHANGE IMPACT ON LIVESTOCK



Heat



Limited pasture



Drying of surface water
for cattle

The impacts will cause low milk and meat production

2.0 CLIMATE SMART AGRICULTURE

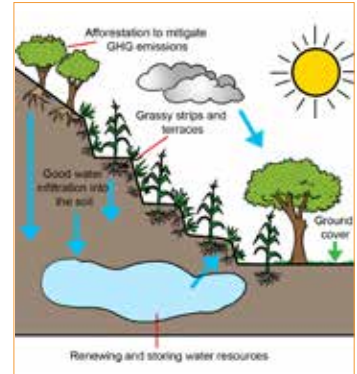
Aim at:



Productivity:
Sustainably increase
agricultural productivity



Adaption: Adapt and
build resilience of
people and food systems
to climate change

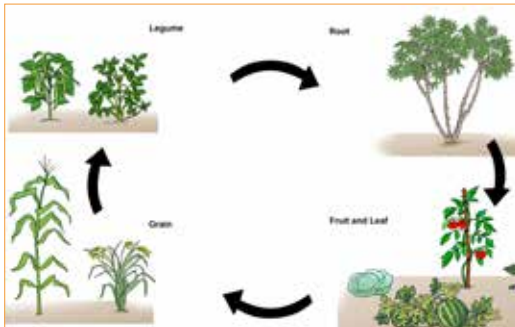


Mitigation: Reduce and/
or remove green house
gas emissions where
possible

2.1 AGRONOMIC PRACTICES



Intercropping: Plant two or more crops in the same fields

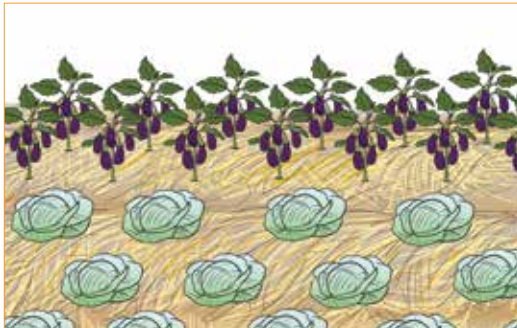


Crop Rotation: Grow several crops in a sequence

AGRONOMIC PRACTICES



Contour Strip: Alternate strips of grass or grain with other crops along contour



Mulching: Cover soil surface with plant leaves or crop residues

2.2 SEED QUALITY

Plant good quality seed



Quality seed is free of;

- Stones
- Insect damage
- Other seeds
- Rotten and discolored seeds
- Small grain
- Plant fragments

2.3 SOURCES OF GOOD QUALITY SEED



Local Seed Business



Community Seed Bank



Certified Agrosupply shop

Buy seed that is high yielding and suitable for your soil and climatic conditions.

2.4 INTEGRATED PEST AND DISEASE MANAGEMENT

Different crops are affected by different pests and diseases



2.5 USE DIFFERENT PRACTICES TO MANAGE PESTS AND DISEASES

Control pests and diseases using good agricultural practices, natural enemies and chemicals



Mulching



Natural Enemies



Chemicals



Fertilization



Sieving and winnowing



Ladybird beetle feeding on aphids



Trenching the field



Pruning, defoliation and topping

USE DIFFERENT PRACTICES TO MANAGE PESTS AND DISEASES



Store chemicals in a dry safe place



Use of hand nets and bags



Mechanical Exclusion



Sound Production



Use the right chemical and dose



Shaking and Gnarring



Mixed cropping

2.6 SOIL FERTILITY MANAGEMENT



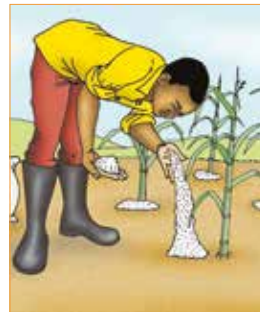
Use of green manure



Use of animal manure



Use of liquid fertilizer



Use of organic and inorganic fertilizer

You can increase your soil fertility using various methods

2.7 PREPARING AND APPLYING LIQUID MANURE FROM VEGETATION FROM VEGETATION

1. Collect and chop green sappy leaves.



2. Immerse the plant material into fresh water and cover the drum. Stir every three days.



3. Collect and chop green sappy leaves.



4. Apply 250 ml- 500 ml around the crop base (roots)- early morning or evening.



PREPARING AND APPLYING FRESH ANIMAL MANURE

1. Fill a bag with fresh manure



2. Immerse the bag into a drum with fresh water and cover it. Stir the mixture every 3 to 5 days.



4. Apply 250ml-500ml (1/4 to 1/2 litres) of the diluted manure tea around the crop base (roots)- early morning or evening.



3. After 2 to 3 weeks dilute the mixture with 2 to 3 parts of water



2.8 HOW TO APPLY FERTILIZERS AT PLANTING

1. Apply one bottle top of Pepsi/coca cola of fertilizer per hole at planting



2. Dig a hole 10 cm deep and pour 1 bottle top of DAP



4. Put seed in the hole and cover it completely with soil

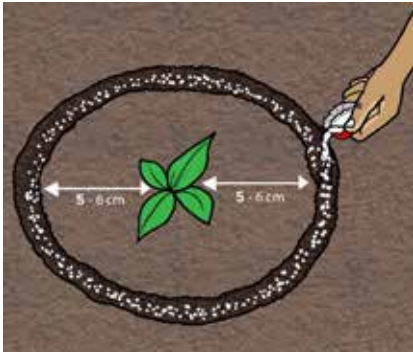


3. Cover fertilizer with some soil

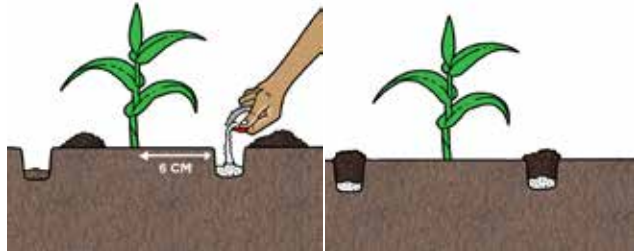


HOW TO APPLY FERTILIZERS AT PLANTING

Application of fertilizer e.g. Urea 3-4 weeks after Planting



Drill a shallow furrow around the plant base

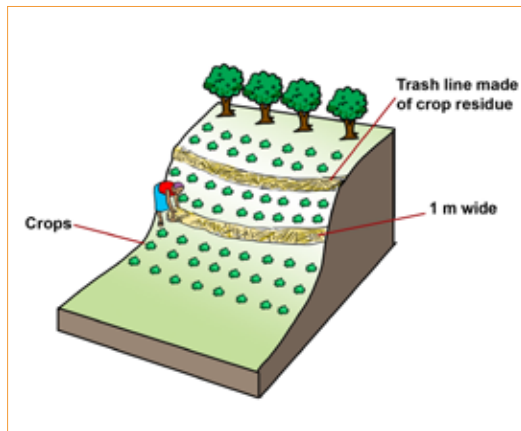


Apply the fertilizer at least around the plant and cover it with soil.

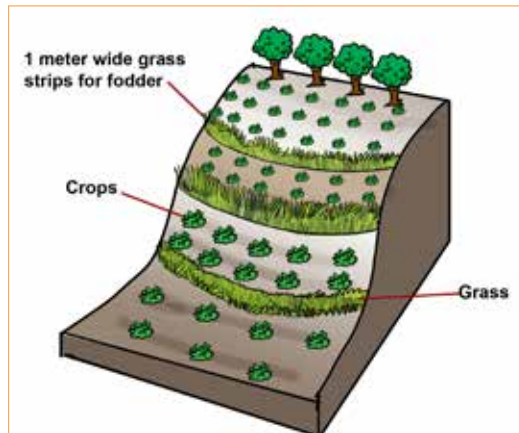
Do not place the fertilizer too far and not too close from the plant.

2.9 SOIL AND WATER CONSERVATION

Trash lines



Grass strips



SOIL AND WATER CONSERVATION

Contour drainage ditches

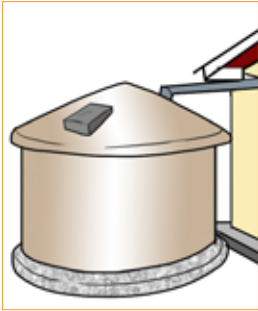


Contour bunds

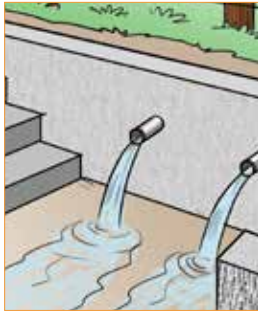


SOIL AND WATER CONSERVATION

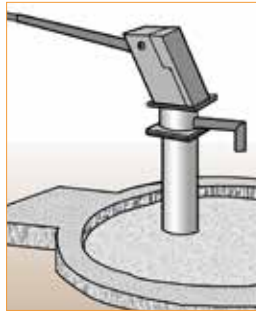
Tanks



Wells



Boreholes



Excavated ponds



Use these structures for water harvesting and storage

2.10 CONSERVATION AGRICULTURAL PRACTICES

Use a dribble stick



Use a hand jab planter



Use a planting basin



Use these practice for zero or minimum soil disturbance

2.11 HOME GARDENING PRACTICES

Keyholes gardens



Sack gardens



Trench gardens



Plant the gardens around the homestead to ensure vegetable and food production throughout the year

2.12 POST HARVEST HANDLING PRACTICES

Drying



Threshing and winnowing



Cleaning



Packaging and Storage



Use these steps to reduce post harvest losses in grains

2.13 HERE ARE SOME STORAGE OPTIONS FOR GRAIN

Granary with rat guards



Plastic containers



Hermetic bags



Grain baskets



Clay pots



2.14 POST HARVEST HANDLING PRACTICES

Harvesting



Packaging



Transporting



Storage



Use these steps to reduce post harvest losses in fruits and vegetables

POST HARVEST HANDLING PRACTICES

Harvesting



Transportation



Peel the cassava wholly



Wash with clean water



Use these steps to reduce post harvest losses in cassava

POST HARVEST HANDLING PRACTICES

Slice cassava in small pieces



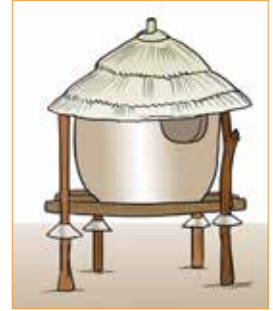
Sundry the cassava



Check for dryness



Packaging and storage



Use these steps to reduce post harvest losses in cassava

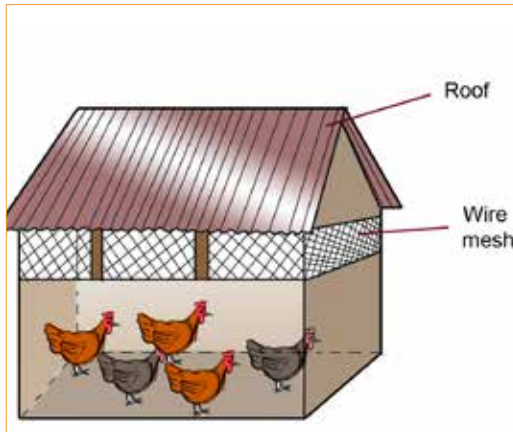
2.15 INTEGRATED LIVESTOCK MANAGEMENT



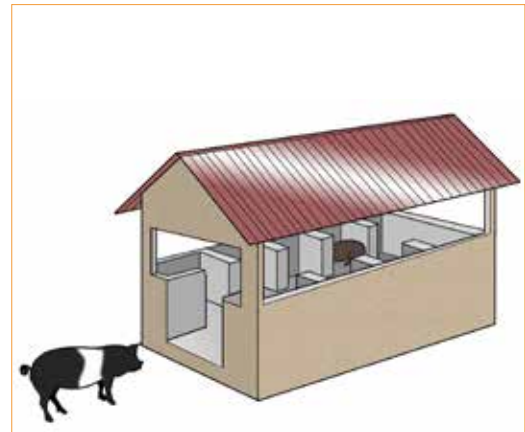
Keep livestock and grow crops in your farm

INTEGRATED LIVESTOCK MANAGEMENT

Chicken house



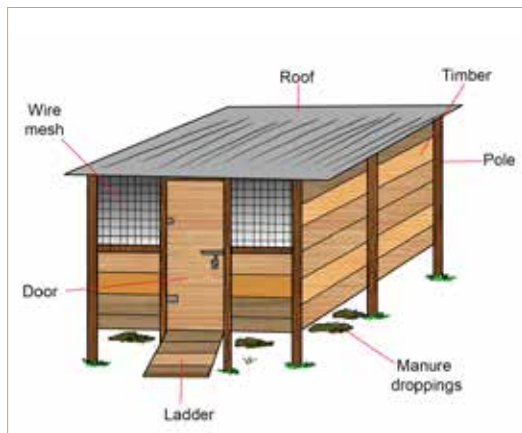
Pig house



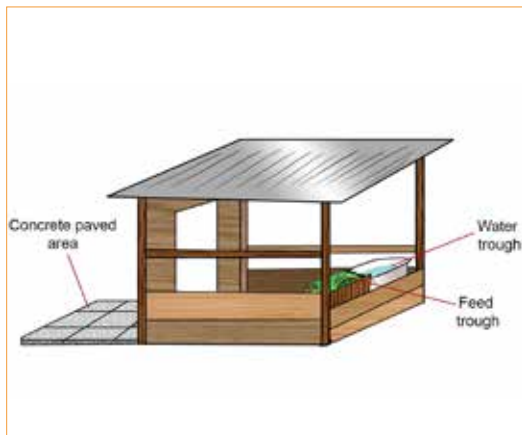
Use different housing structures for the different livestock

INTEGRATED LIVESTOCK MANAGEMENT

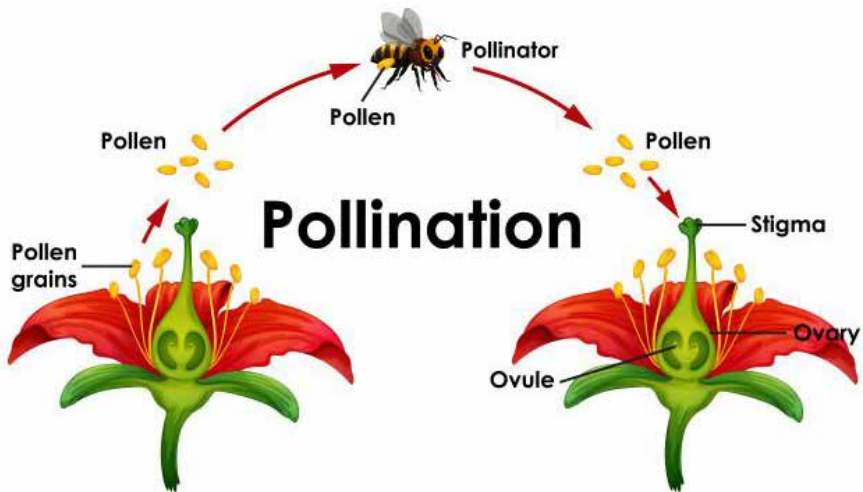
Dairy goat house



Cow house



2.16 BEEKEEPING



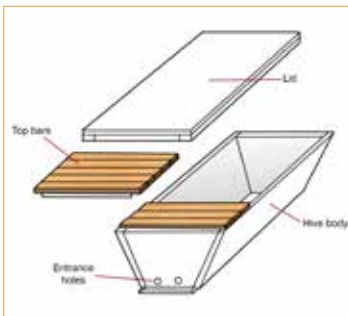
Bees are essential pollinators and contribute to crop production worldwide.

2.17 BEE KEEPING SYSTEMS

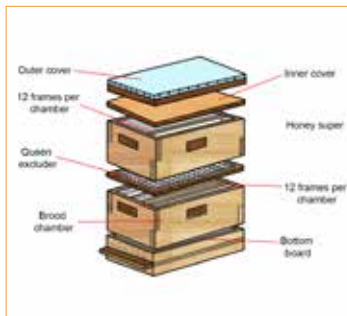
The traditional



The top bar



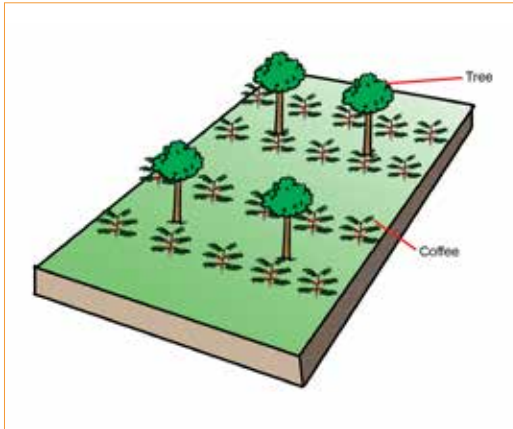
The modern frame



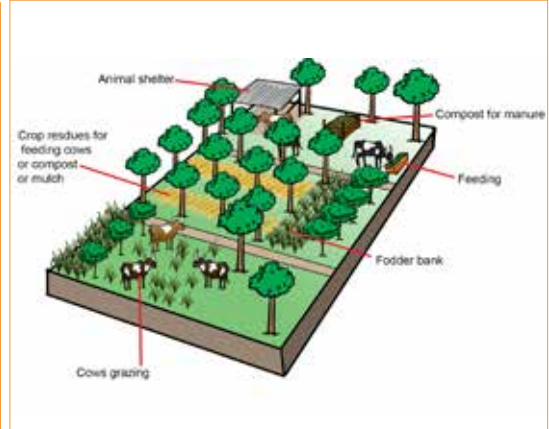
Use a system that fits within the resources that you have for investment

2.18 AGROFORESTRY SYSTEMS

Agrosilvocultural



Agrosilvopastoral



Integrate trees with your crop and livestock to reduce climatic impacts

2.19 SUSTAINABLE ENERGY

Improved cook stove



Improved Charcoal stove



Traditional stove



Select an options that fits into your available farm resources

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