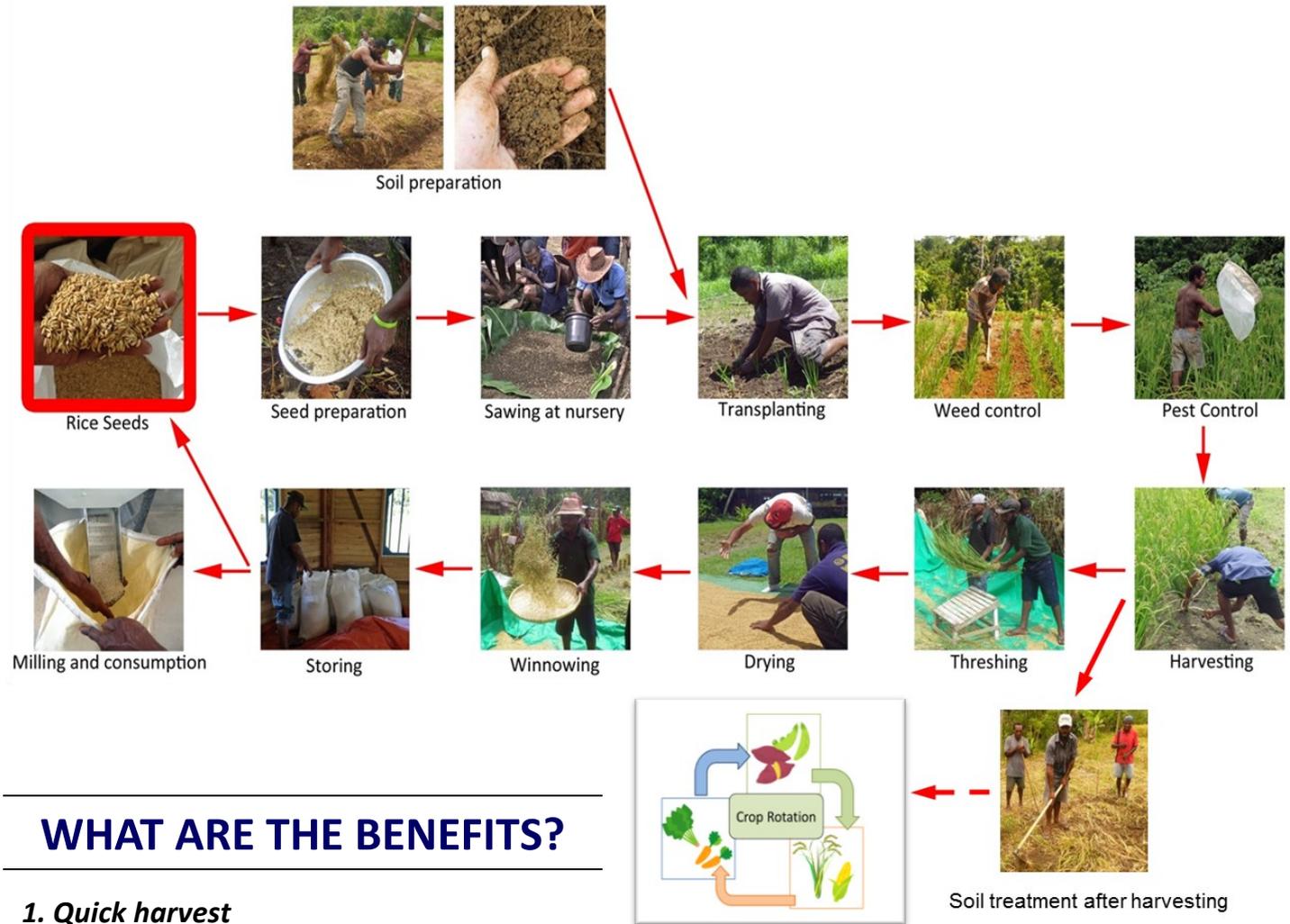


# LEARN RICE CULTIVATION CYCLE FROM MODEL FARMERS!!



## WHAT ARE THE BENEFITS?

- 1. Quick harvest**
- 2. Long storage period**
- 3. Good taste and high nutritional value**

Rice can be harvested around 3 to 5 months after sowing, which is much shorter than other tuber crops. You can store rice longer than other crops. If stored rice in good condition, you can eat and plant seeds even after one year. Rice tastes good and provides us source of energy.



## WHAT YOU HAVE TO DO

Rice cultivation cycle starts with seeds and ends with seeds. That involves having rice seeds, preparing land, soil and seeds, planting, weed and pest control, harvesting, post-harvesting processes, and keeping rice seeds for next cropping season from the own crop. Rice cultivation is quite simple just like cultivating other crops. Seek assistance from model farmers who are trained in basic skills of rice cultivation cycle by DAL when starting rice cultivation.

# 1. Soil preparation



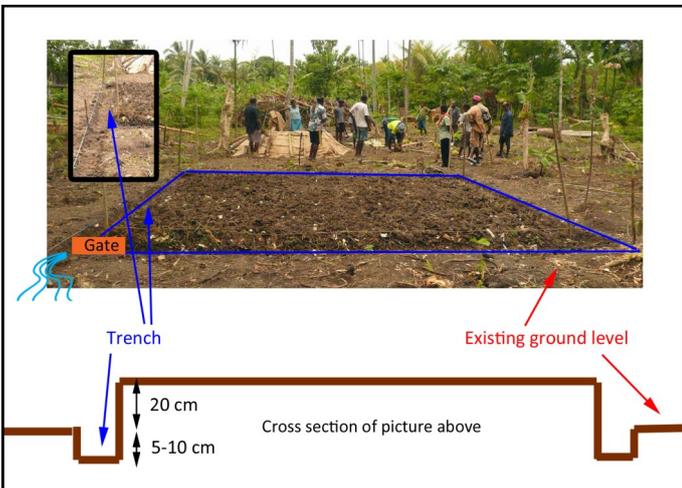
## A. PLOUGH

Good soil preparation is the key for successful rice cultivation. Start soil preparation at least one month before planting/sowing. Use a hoe or shovel and plough 20-30 cm depth to mix the soil well.



## B. APPLY ORGANIC MATTER

Make your soil fertile by ploughing with organic matter. Bring straws, weeds, any soft plants like banana stem and leaves, and kitchen wastes and mix well with the soil. Avoid using heavily seeded plant or flower.



## C. MAKE TRENCH

Dig a trench to control water in your field. Dig the surrounding borders of the garden (10 cm depth) and put the dug soil back onto the garden. Make a gate to release or keep water for water control. Good moisture level of the soil is indicated by being able to make a ball of soil with your hand.



## D. AFTER ONE MONTH

All the weeds, soft plants and kitchen waste should have rotted and become organic fertilizers after one month. The soil should look as in the picture when ready for rice cropping. You can prepare the soil in the same way for other food cropping.

## 2. Sowing and transplanting



### A. SOWING ON NURSERY BED

Soak rice seeds in a bucket of water three days in open sunlight and change water daily before sowing. Place logs or poles to fence the nursery bed. Put banana leaves beneath the bed. Put the soil over the banana leaves to a depth of 5cm in height. Sow rice evenly on the nursery bed. Cover with light soil and sprinkle water. Put banana leaves on top to cover the bed.



### B. GROWTH OF SEEDLINGS

Seeds should germinate in 3-5 days. Remove banana leaves on day 4 to give sunlight after germination. Sprinkle water every morning and afternoon. Seedlings will be ready for transplanting when they are at three leaf-stage or after two (2) weeks of sowing; the period depending on the variety.



### C. PARALLEL PLANTING

It is better to use ropes and sticks as a guide to plant seedlings in rows. Set the ropes for marking plant spacing at 20cm and row spacing at 30cm. Make holes 4-5cm deep using a pointed stick. Spacing depends on the rice variety. 20cm plant spacing and 30cm row spacing is for short varieties (3-4 months) and 30-40cm spacing is for tall varieties (4-5 months). 30-40cm row spacing is enough for people to pass through for weeding and pest control.



### D. TRANSPLANTING

Bring seedlings with soil attached to the roots, and place them in a reachable distance in the rice garden. Select good seedlings and transplant one by one (or two by two) immediately, covering the roots with soil gently. Move backwards when transplanting to avoid damaging the transplanted seedlings. Give some water in the afternoon after transplanting.

## 3. Weed, water and pest control



### A. MANAGEMENT OF RICE GARDEN

Visit your garden regularly to check the water content of soil. If you cannot make a ball-of-soil by hand, add water by sprinkling. If the soil is too wet, open the gate of trench. Remove weeds from the roots using a hoe between rows and put them back to the soil as organic fertilizers one month after transplanting. Remove the following pests before they damage your garden.



### B. STEM BORERS

Infested rice plants get white heads or white colored panicles. Stems with white heads should be pulled out and searched for larvae and pupae. Stem borers should be picked by hand and killed immediately by foot. For prevention, have a rice free period for at least two months at the same time within the community. Harvest all at once.



### C. RICE BUGS

Rice bugs have offensive smell when touched. Milky stage of the rice plant attracts rice bugs and they cause empty or small grains. All of your rice grains can be damaged by rice bugs if not controlled. Rice garden needs to be checked both in the morning and afternoon during the milky stage and rice bugs must be caught and killed by hands, nets or plastic bags. For prevention, control weeds and grass.



### D. BROWN PLANT HOPPER (BPH)

Rice is the only host plant for brown plant hoppers. They cause hopper-burn as shown in death of the plants, or transmit virus diseases to other rice plants. BPH should be removed by nets or plastic bags to reduce the number. Once they occur in high density, insecticide spray or early harvesting is the only option to control. For prevention, harvest rice at once and have a rice-free period for at least two months at the same time within the community.

## 4. Harvesting and Post-Harvesting Processes



### A. HARVESTING

It is the harvest time when about 80% of grains turn yellow. Before harvesting the entire grains, harvest best rice seeds to be used for next cropping. Then harvest the rest of crop by cutting at the base of the stems using a sickle or a knife. Plough the soil right after harvesting.



### B. THRESHING

Separating grains from the straws right after harvesting. You can thresh by hand/feet or hitting the stem against a wire mesh, drum or any hard object. If the surface of the grain is wet, dry first by hanging or on a canvas and then thresh.



### C. DRYING

Drying harvested grains is very important to prevent the growth of bacteria and fungi, and the attack of grain weevils and insect. Dry the threshed grains on a canvas and turn over every 30 minutes with a rake or hands. Be careful not to over-dry. It takes from half day to more than 3 days to reach ideal dryness.



### D. WINNOWING

Winnowing separates good grain rice from rubbish. If you don't winnow or separate rice from rubbish, you will damage rice and milling machine when milling. Use natural wind to blow the rubbish away from rice by dropping rice from the head-height to the ground on the canvas several times or use round weaved winnower trays.



### E. STORING

If you are ready to eat, take your winnowed rice to a milling station. If not, store your rice in sealed sacks and place them in a protected place to avoid damp, rats and insects. The rice should not touch the ground. You can keep and store your rice and seeds up to one year.