

## Harvesting of Rice

### 1. Harvesting

- Harvesting is the process of collecting the mature rice grains from the field.
- Harvesting activities include reaping (cutting mature panicles and straw), stacking, threshing, cleaning and hauling. These can be done individually, or simultaneously using a combine harvester.

### 2. Harvesting methods

#### (a) Manual harvesting

- This is the most common means of rice harvesting.
- The rice crop is cut using sickles (best for cutting 15-25 cm above ground level), and hand-held sickles (best for cutting just below the panicle).

**Advantages:** Very effective in lodged crop conditions.

#### **Disadvantages**

- Labour-intensive: 1 acre requires 14 persons for 8 hours.

- Susceptible to grain damage ( $\geq 8.3\%$  per acre).

#### (b) Machine harvesting

- Machine harvesting uses reapers (machine that cuts and gathers the crop).
- Reapers are either hand-driven or mounted on the front of a tractor. Use of reapers is not widespread but is gaining popularity in Kenya.
- Reapers lay the crop in a row, which allows easy pick-up of the harvested crop.
- The common self-propelled type with a cutting width of 1.2 m for 4 rows takes 1.4 hrs/acre.

#### **Advantages**

- Low labour requirements.
- High capacity than manual harvesting.

#### **Disadvantages**

- Difficult to reap lodged crop.
- Reapers not readily available locally.



**Fig 1. Manual harvesting of rice in Kibos, Kenya**  
Source: Oliver Nyongesa



**Fig 2. Hand-driven paddy reaper**  
Source: RiceMAPP



**Fig 3. Combined harvester for rice**  
Source: RiceMAPP

### (c) Combine harvesting

- The combine harvester combines all operations: cutting the crop, threshing, cleaning, and discharge of grain into a bulk wagon or directly into bags. Straw is discharged behind the combine in a row.

#### **Advantages**

- Faster and efficient (45 min per acre).
- Produces clean grain.

#### **Disadvantages**

- Higher cost.
- Less effective in partially lodged crop.
- Not suitable for high-shattering varieties, e.g. NIBAM 10 & 11 varieties.
- Complex machine.

### 3. Harvesting precautions

- Avoid harvesting very early in the morning. Morning dew and rain increases probability of choking the harvester, leading to grain loss.
- Have enough clean gunny bags for the harvested crop (30-36 bags per acre).
- Harvesting must be closely timed with threshing and drying, which should be done within 24 hours of harvesting.