



CSAM



## WEBTRAINING ON TESTING OF COMBINE HARVESTERS FOR REDUCING OF LOSSES AND INCREASED SAFETY

# Utilization of Combine Harvester in Malaysia and Its Performance Control

11 October 2022, 14.00-16.30 GMT+8



# OVERVIEW: COMBINE HARVESTER IN MALAYSIA

## SIZE OF COMBINE HARVESTER

- 1. Big combine harvester
- 2. Small/Mini combine harvester

## TYPES OF COMBINE HARVESTER

- 1. Tangential flow
- 2. Axial flow

## ISSUES

- 1. No specification and reference model
- 2. Improper maintenance and setting
- 3. No SOP and Lack of skilled manpower



a. Big harvester

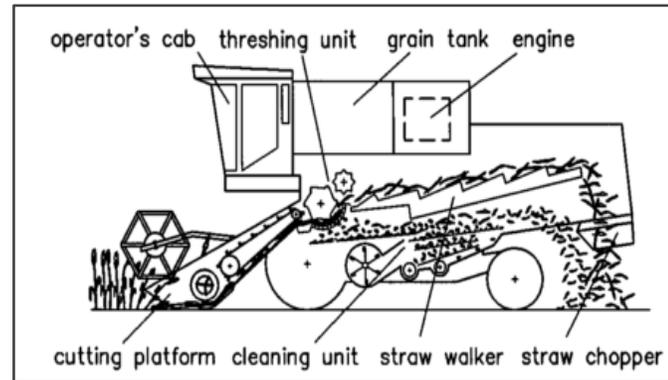
- Total combine: 1,500 units
- 15% owned by government sector
- 20% small/mini harvester



b. Small/Mini harvester (rice)



c. Small/Mini combine (maize)



d. Tangential flow harvester



f. Imported used harvester (wheat)

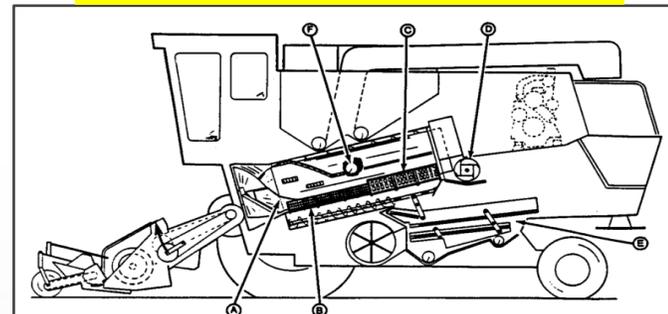


Figure 12.7 – An axial flow rotary combine utilizing a single rotor: (a) rotor, (b) threshing concave, (c) separating concave, (d) back beater, (e) cleaning shoe, (f) tailings return (courtesy of Prairie Agricultural Machinery Institute, Canada).

e. Axial flow harvester



g. Reconditioned combine in progress





# PERFORMANCE CONTROL: COMBINE HARVESTER IN MALAYSIA

## SOP FOR HARVESTER

### 1. SOP - Combine Harvester

**Inspection:** To check and verify condition and performance of new and reconditioned combine

### 2. SOP - Combine Harvester

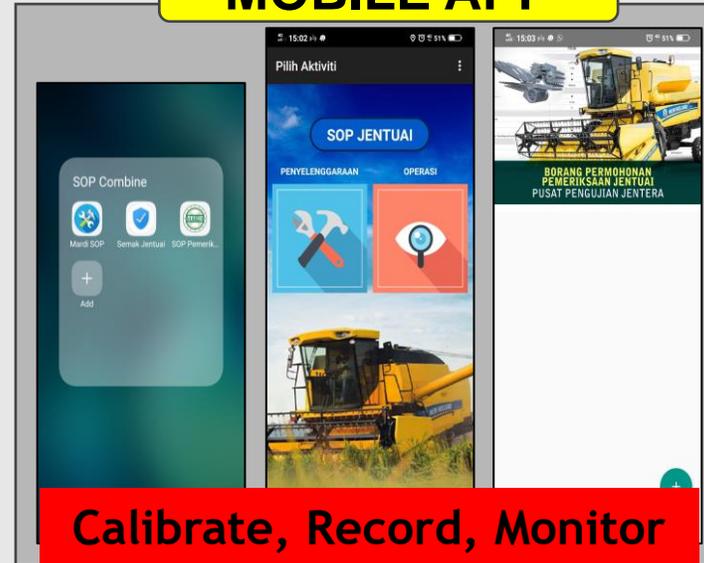
**Maintenance:** To ensure combine in tip top condition by implementing periodical maintenance

### 3. SOP - Combine harvester

**Operation:** To achieve optimum performance by following the proposed guideline

## COMBINE MONITORING APP

### MOBILE APP



**Calibrate, Record, Monitor**

### Benefit

- Ensure good condition of harvester through calibration based on SOP
- Simplify filling checklist process
- A system to identify harvester condition
- Prolong harvester lifespan by doing proper maintenance

## GRAIN LOSS VERIFICATION



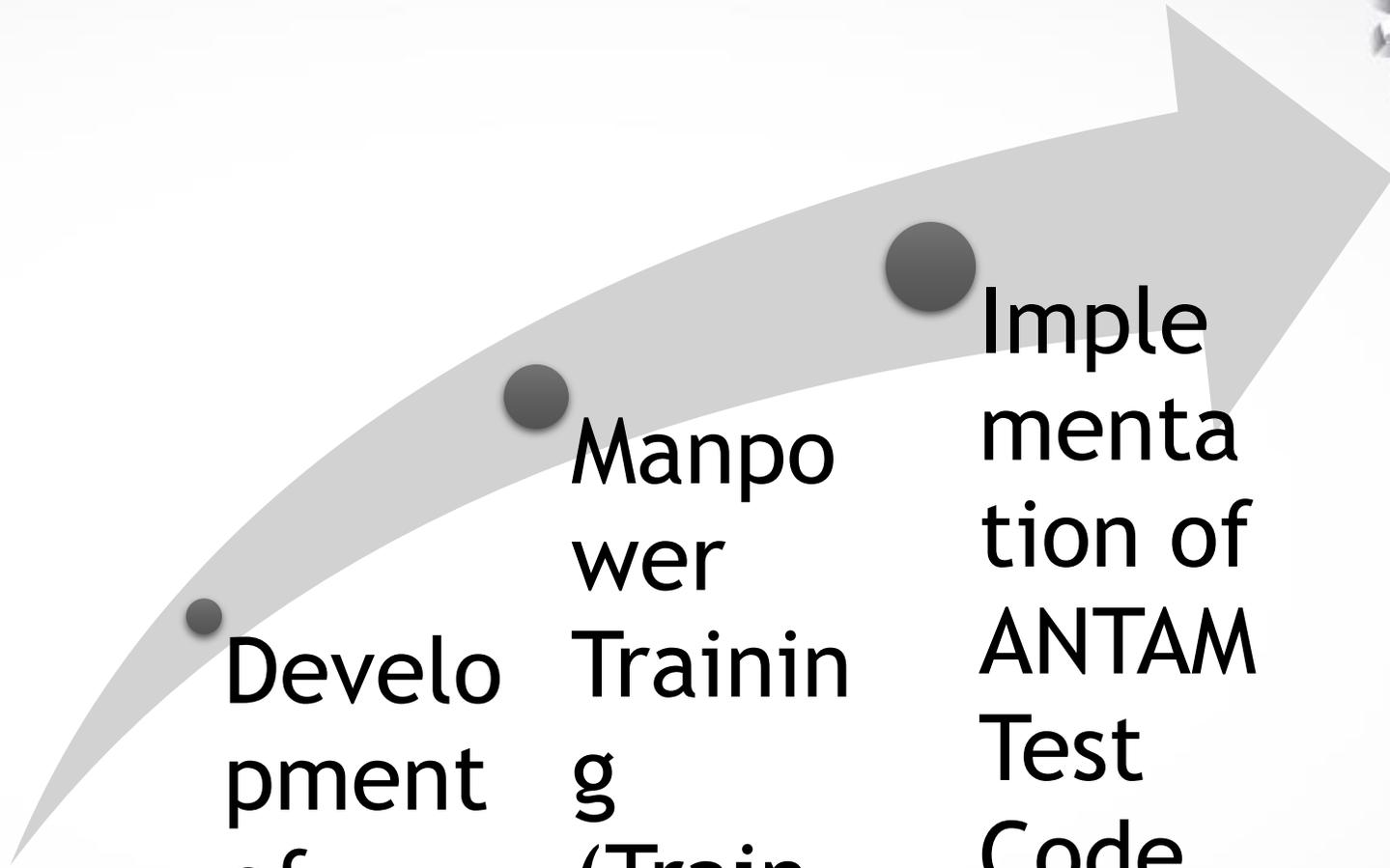
- The verification focused at header and threshing mechanism
- Grain loss before control: Average 9%
- Grain loss after control: Less than 5%



# WAY FORWARD - SPECIFIC TESTING NEEDS



Machinery Testing Laboratory





# THANK YOU



Economic and Social Commission for Asia and the Pacific

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