Crop Manager for Rice-based Systems Bihar Version1.0 (For NON-KHARIF only)

*Crop Manager for Rice-based Systems* provides a farmer with personalized crop management recommendations for rice, rabi maize, and wheat grown in both rainfed and irrigated conditions.

**Instructions:**
The farmer should answer the following questions for their field before the establishment of their next rice, rabi maize, or wheat crop. If the farmer has more than one field, the questions should be answered separately for each field for which a recommendation is desired.

1. Where is the field?
   - District: _________________________
   - Block: __________________________
   - Village: _________________________

   A field is one or more parcels with similar management, variety, and soil fertility.

2. How do you name the field for identification? ________________

   **Note:** Use a descriptive name that the farmer can easily associate to the field to be provided with CMRS recommendation. Only 3 to 30 alphanumeric characters can be used for field name.

3. What is the size of the field?
   - O _____ kattha
   - O _____ acre

   **If kattha,**
   - How many kattha in 1 acre?
     - O 32
     - O 22
     - O 17
     - O Other: _____

   **If the selected district is any of the following: Darbhanga, Katihar, Kishanganj, or Purnia,**

4a. For which upcoming crop do you need a recommendation?
   - O Kharif rice
   - O Rabi maize
   - O Wheat
   - O Boro rice

**Otherwise,**

4b. For which upcoming crop do you need a recommendation?
   - O Kharif rice
   - O Rabi maize
   - O Wheat

   **If rabi maize, continue answering the questions in SET B1.**
   **If wheat, continue answering the questions in SET C1.**
   **If boro rice, continue answering the questions in SET A2.**
SET A2. If the selected crop is boro rice:

5. What rice variety do you plan to grow in the upcoming boro?
   O Name of the variety: _______________
   O Not in the list. Please provide the name of the variety: _______________

   If not in the list,
   What is the growth duration of the variety from sowing to harvest?
   O 81-90 days       O 91-100 days       O 101-110 days
   O 111-120 days     O 121-130 days     O 131-140 days
   O 141-150 days

   **Proceed to SET A3.**

SET A3.

6. How will rice be established?
   O Manual transplanting   O Mechanical transplanting
   O Wet seeding            O Dry seeding

   If manual or mechanical transplanting
   7a. Will you raise your seedlings?
       O Yes               O No

       **If no,**
       What is your source of seedlings?
       O Purchased          O Borrowed

       **If yes or no,**
       When will rice be sown in the nursery?

       Select a month:
       O May
       O June
       O July
       O August

       Enter a date: ______

   If wet or dry seeding,
7b. When will rice be sown in the field?

Select a month:
O May
O June
O July
O August

Enter a date: _____

If manual transplanting,
8a. What is the approximate seedling age at transplanting?
O 15-20 days
O 21-30 days
O 31-40 days
O Older than 40 days

If mechanical transplanting,
8b. What is the approximate seedling age at transplanting?
O 15-20 days
O 21-30 days

9. What rice variety did you grow last year in your field in kharif?
Name of the variety: ____________________

10. What yield of fresh, unmilled rice did you harvest last year from your insert field size in local unit field using insert selected variety in question 15? Sum amounts of grain marketed, retained for household consumption, and provided to laborers.

If grain yield is expressed in quintal,
Grain yield: _____ quintal from insert field size in local unit

Note: 1 quintal = 100 kg

If field size is expressed in kilograms,
Grain yield: _____ kilograms from insert field size in local unit
Proceed to SET D2.

SET B1. If the selected crop is rabi maize:

5. How will rabi maize be established?
   O Zero or reduced tillage   O Conventional tillage

6. What maize variety will you grow for the upcoming rabi season?
   O Hybrid                  O Open-pollinated variety (OPV)

7. When will rabi maize be planted in the field?
   
   Select a month:
   O October
   O November
   O December
   O January
   O February

   Enter a date: _____

8. What is the local unit used for yield of rabi maize?
   O Quintal                O Kilograms

9. Have you grown maize in your insert field size in local unit field in the rabi season within the past two years?
   O No                     O Yes

   If yes,
   How much sun-dried, shelled maize do you typically harvest from your insert field size in local unit field in the rabi season using insert selected variety type with planting in insert selected month of planting?

   If grain yield is expressed in quintal,
   Grain yield: _____ quintal from insert field size in local unit

   Note: 1 quintal = 100 kg

   If grain yield is expressed in kilograms,
   Grain yield: _____ kilograms from insert field size in local unit

10. Indicate below your planned spacing of maize seed in the upcoming rabi.
    Between rows: _____ cm
    Within a row: _____ cm
Proceed to SET D1.

SET B2

11. How many times do you plan to irrigate the rabi maize crop from establishment to harvest?
   - O Zero (Full rainfed)
   - O 1 to 4 times (Partial irrigation)
   - O 5 times or more (Full irrigation)

If full rainfed or partial irrigation,
12. Based on experience in past years, what do you anticipate for the upcoming rabi maize?
   - O Adequate irrigation and rainfall during maize growth; no yield loss from drought
   - O Shortage of water during maize growth; yield loss from drought

13. Which best describes the soil in your field?
   - O Clayey
   - O Loamy
   - O Sandy

14. Did you apply zinc to the previous rice crop?
   - O No
   - O Yes, at less than 10 kg Zn sulfate/acre
   - O Yes, at 10 kg Zn sulfate/acre or more

15. Which best describes your planned rate of fertilizer application for the upcoming rabi maize crop?
   - O Apply less than 70 kg N fertilizer/acre
   - O Apply 70 or more kg N fertilizer/acre
Proceed to SET D2.

SET C1. If the selected crop is wheat:

5. How will wheat be established?
   - O Zero tillage
   - O Conventional tillage, broadcast sowing
   - O Conventional tillage, line sowing

6. What wheat variety will you grow for the upcoming season?
   Name of the variety: ___________________

7. When will wheat be sown in the field?
   Select a month:
   - O November
   - O December
   Enter a date: _____
8. How many times do you plan to irrigate the wheat crop from establishment to harvest?
   O 1 time       O 2 times       O 3 or more times

9. What kind of weeds predominates in your field during the wheat crop?
   O Phalaris minor only
   O Broadleaves
   O Mix of broadleaves and grasses
   O Not known

If the selected district is any of the following: Kishanganj, Purnia, Araria, Saharsa, or Supaul,
10. Was there a problem in recent seasons with sterility of wheat such as chaffy grain?
    O No       O Yes

    If yes,
    Did you apply boron to wheat in recent seasons?
    O No       O Yes

11. Did you apply zinc to the previous rice crop?
    O No
    O Yes, at less than 10 kg Zn sulfate/acre
    O Yes, at 10 kg Zn sulfate/acre or more
Proceed to SET D2.

SET D1. If the selected crop is rabi maize or wheat:

1. What rice variety was used in the last kharif?
   Name of the variety: ___________________

2. How was the previous rice crop harvested?
   O Manual      O Combine

If manual harvest,
3a. What portion of residue from your previous rice crop was retained in the field?
   O Short standing biomass, about 10 cm height
   O Tall standing biomass, about 20 cm height

If combine harvest,
3b. How was residue from your previous rice crop managed?
   O Standing biomass and straw retained in field
   O Straw removed and standing biomass retained in field
   O Standing biomass and straw removed after harvest

If maize, proceed to SET B2.
If wheat, proceed to SET C2.

SET D2. If the selected crop is rabi maize, wheat, or boro rice:

4. What fertilizer sources in addition to urea will you apply to rice?
   O DAP (18-46-0) and MOP
   O NPS (20-20-0-13) and MOP (0-0-60)
   O NPK (12-32-16) and MOP
   O NPK (10-26-26) and MOP

5. Has a soil test been obtained for the field in the past 2 years?
   O No      O Yes

   If yes,
   What was the result for nitrogen (N)?
   O Low      O Medium      O High

   What was the result for phosphorus (P)?
   O Low      O Medium      O High

   What was the result for potassium (K)?
   O Low      O Medium      O High

   What was the result for zinc (Zn)?
What was the result for boron (B)?

For the person operating *Crop Manager for Rice-based Systems*

Did you answer the questions through an interview of a farmer who wants to receive a recommendation?

- Yes
- No, the recommendation will not be given to the farmer

*If yes, continue answering the last few pages.*

**Information about the farmer**

Given name: ___________________

Gender:
- Male
- Female

**If Male,**
Father’s name: ___________________

**If Female,**
Father’s name / Husband’s name: ___________________

Age:
- <30
- 31-40
- 41-50
- 51-60
- >60

Indicate which of the following represents you: *(Allow selection of more than one.)*
- I have seen a demonstration on mechanical transplanting.
- I have seen a demonstration on dry seeded rice.
- I have seen a demonstration on zero tillage wheat.
- I have used submergence tolerant rice in previous years.
- I have used drought tolerant rice in previous years.
- None of the above.

Mobile phone number (optional): ________________
Email (optional): ___________________

Information about the person operating *Crop Manager for Rice-based Systems*

Given name: ___________________

Gender:
O Male         O Female

If Male,
Father's name: ___________________

If Female,
Father's name / Husband's name: ___________________

Do you reside in Bihar, India?
O Yes         O No

Profession:
O Extension worker or agent
O Farmer
O Researcher
O Fertilizer dealer
O NGO
O Others, please specify: ___________________

What is your organizational affiliation?
O BAU
O CRS
O CSISA
O ICAR
O RAU
O Others, please specify: ___________________

Mobile phone number (optional): _________________
E-mail (optional): _________________

END