

Crop Manager for Rice-based Systems Bihar Version 1.0 (For 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?

☐ _____ kattha

☐ _____ acre

If kattha,

How many kattha in 1 acre?

☐ 32

☐ 22

☐ 17

☐ 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?

☐ Kharif rice

☐ Rabi maize

☐ Wheat

☐ Boro rice

Otherwise,

4b. For which upcoming crop do you need a recommendation?

☐ Kharif rice

☐ Rabi maize

☐ Wheat

5. Will your *insert field size in local unit* field have access to irrigation water in the upcoming *kharif*?

☐ Yes

☐ No

If yes,

How many times do you plan to irrigate **rice** in the upcoming **kharif** between crop establishment and harvest?

- ☐ Never ☐ 1 or 2 times
- ☐ 3 or 4 times ☐ 5 times or more

6. What **rice** variety do you plan to grow in the upcoming **kharif**?

Name of the variety: _____

7. What is the local unit used for yield of **rice**?

- ☐ Quintal ☐ Kilograms

8. Have you lost yield in your **insert field size in local unit** field in the past 5 years to any of the following?

- ☐ Submergence only
- ☐ Drought only
- ☐ Submergence and drought
- ☐ None

If none,

Proceed to SET A3 and follow KHARIF NO STRESS pathway.

If 'submergence only' or 'submergence and drought',

9a. In the past 5 years, how many years have you lost **insert equivalent amount of 1 t/ha in the selected unit for yield** of yield in your **insert field size in local unit** field due to crop submergence?

- ☐ 0 to 1 year ☐ 2 to 3 years ☐ 4 to 5 years

If 'submergence only' and '0 to 1 year',

Proceed to SET A3 and follow KHARIF NO STRESS pathway.

If 'submergence only' and '2 to 3 years' or '4 to 5 years',

Proceed to question 10b in this set.

If 'drought only' or 'submergence and drought',

9b. In the past 5 years, how many years have you lost **insert equivalent amount of 1 t/ha in the selected unit for yield** of yield in your **insert field size in local unit** field due to drought?

- ☐ 0 to 1 year ☐ 2 to 3 years ☐ 4 to 5 years

If 'drought only' and '0 to 1 year',

Proceed to SET A3 and follow KHARIF NO STRESS pathway.

If 'drought only' and '2 to 3 years' or '4 to 5 years',
Proceed to question 10c in this set.

If 'submergence and drought',

Question 9a: Submergence	Question 9b: Drought	Proceed to...
0-1 year	0-1 year	SET A3 and follow KHARIF NO STRESS pathway.
0-1 year	2-3 years	Question 10c in this set.
0-1 year	4-5 years	Question 10c in this set.
2-3 years	0-1 year	Question 10b in this set.
2-3 years	2-3 years	Question 10a in this set.
2-3 years	4-5 years	Question 10c in this set.
4-5 years	0-1 year	Question 10b in this set.
4-5 years	2-3 years	Question 10b in this set.
4-5 years	4-5 years	Question 10a in this set.

10a. Based on experiences in the past 5 years, which of the following do you expect to result in more yield loss in the upcoming **rice** crop?

☐ Submergence ☐ Drought

If submergence,
Proceed to question 10b in this set.

If drought,
Proceed to question 10c in this set.

10b. If submergence-tolerant variety was selected,
Proceed to SET A3 and follow SUBMERGENCE ADAPTED VARIETY pathway.

Otherwise,
Would you like to change to a **submergence-tolerant variety** and receive a recommendation for that variety?
☐ Yes ☐ No

If yes,
Select a **submergence-tolerant variety** you plan to grow for the upcoming **kharif**?
The recommendation you receive will be for that variety.
Proceed to SET A3 and follow SUBMERGENCE ADAPTED VARIETY pathway.

If no,
Proceed to SET A3 and follow SUBMERGENCE NOT ADAPTED VARIETY pathway.

10c. If drought-tolerant variety was selected,
Proceed to SET A3 and follow DROUGHT ADAPTED VARIETY pathway.

Otherwise,

Would you like to change to a drought-tolerant variety and receive a recommendation for that variety?

☐ Yes

☐ No

If yes,

Select a drought-tolerant variety you plan to grow for the upcoming kharif?

The recommendation you receive will be for that variety.

Proceed to SET A3 and follow DROUGHT ADAPTED VARIETY pathway.

If no,

Proceed to SET A3 and follow DROUGHT NOT ADAPTED VARIETY pathway.

SET A3.

11. How will rice be established?

☐ Manual transplanting ☐ Mechanical transplanting

☐ Wet seeding

☐ Dry seeding

If manual or mechanical transplanting

12a. Will you raise your seedlings?

☐ Yes

☐ No

If no,

What is your source of seedlings?

☐ Purchased

☐ Borrowed

If yes or no,

When will rice be sown in the nursery?

Select a month:

☐ May

☐ June

☐ July

☐ August

Enter a date: _____

If wet or dry seeding,

12b. When will rice be sown in the field?

Select a month:

- ☐ May
- ☐ June
- ☐ July
- ☐ August

Enter a date: _____

If manual transplanting,

13a. What is the approximate seedling age at transplanting?

- ☐ 15-20 days
- ☐ 21-30 days
- ☐ 31-40 days
- ☐ Older than 40 days

If mechanical transplanting,

13b. What is the approximate seedling age at transplanting?

- ☐ 15-20 days
- ☐ 21-30 days

14. What rice variety did you grow **last year** in your field in **kharif**?

Name of the variety: _____

15. What yield of fresh, unmilled rice did you harvest **last year** from your **insert field size in local unit** field using **insert selected variety**? 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 grain yield is expressed in kilograms,

Grain yield: _____ kilograms from **insert field size in local unit**

If KHARIF NO STRESS, proceed to SET A6.

If SUBMERGENCE ADAPTED VARIETY, proceed to SET A4.

If SUBMERGENCE NOT ADAPTED VARIETY, proceed to SET A6.

If DROUGHT ADAPTED VARIETY, proceed to SET A5.

If DROUGHT NOT ADAPTED VARIETY, proceed to SET A6.

SET A4

16. In years with submergence, how many times in one year was your field typically inundated by flash floods?

- ☐ 1 flood per year ☐ 2-3 floods per year ☐ 4 or more floods per year

If manual or mechanical transplanting,

17a. Based on your experience in past years, when does submergence often occur? (Allow selection of more than one.)

- ☐ From transplanting to 15 days after transplanting
☐ From 15 days after transplanting to active tillering
☐ Active tillering to 15 days after active tillering
☐ 15 days after active tillering to panicle initiation
☐ 1 to 15 September
☐ 16 to 30 September or October

If dry or wet seeding,

17b. Based on your experience in past years, when does submergence often occur? (Allow selection of more than one.)

- ☐ From 10 to 15 days after sowing
☐ From 15 days after sowing to active tillering
☐ Active tillering to 15 days after active tillering
☐ 15 days after active tillering to panicle initiation
☐ 1 to 15 September
☐ 16 to 30 September or October

18. Based on your experience in past years, what is typically the number of days before the flash flood recedes?

- ☐ Less than 15 days ☐ 15-20 days

Proceed to SET A6.

SET A5

19. Is life saving irrigation available in your field during a drought?

☐ Yes

☐ No

If yes,

When is life saving irrigation available? (Allow selection of more than one.)

☐ Tillering

☐ Panicle initiation

☐ Flowering

Proceed to SET A6.

SET A6

20. Does stagnant water in the field prevent harvest of **rice** in October?

☐ No

☐ Yes

21. What was the rabi crop before the upcoming **kharif** rice?

☐ Wheat

☐ Maize

☐ Rice

☐ Fallow, no crop

☐ Other crop:

If wheat, maize, or rice,

What portion of residue from your previous **insert name of crop** crop was retained in the field?

☐ Short standing biomass, about 10 cm height

☐ Tall standing biomass, about 20 cm height

If wheat or rice,

How was residue from your previous **insert name of crop** crop managed?

☐ Standing biomass and straw retained in field

☐ Straw removed and standing biomass retained in field

☐ Standing biomass and straw removed after harvest

Proceed to SET D2.

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

22. What fertilizer sources in addition to urea and MOP (0-0-60) do you plan to use this selected season?

☐ DAP (18-46-0)

☐ NPS (20-20-0-13)

☐ SSP (0-16-0)

☐ NPK (12-32-16)

☐ NPK (10-26-26)

23. Has a soil test been obtained for the field in the past 2 years?

☐ No

☐ Yes

If yes,

What was the result for nitrogen (N)?

☐ Low

☐ Medium

☐ High

What was the result for phosphorus (P)?

☐ Low

☐ Medium

☐ High

What was the result for potassium (K)?

☐ Low

☐ Medium

☐ High

What was the result for zinc (Zn)?

☐ Low

☐ Medium

☐ High

☐ Not available

What was the result for boron (B)?

☐ Low

☐ Medium

☐ High

☐ Not available

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:

☐ Male

☐ Female

If Male,

Father's name: _____

If Female,

Father's name / Husband's name: _____

Do you reside in Bihar, India?

☐ Yes

☐ No

Profession:

☐ Extension worker or agent

☐ Farmer

☐ Researcher

☐ Fertilizer dealer

☐ NGO

☐ Others, please specify: _____

What is your organizational affiliation?

☐ BAU

☐ CRS

☐ CSISA

☐ ICAR

☐ RAU

☐ Others, please specify: _____

Mobile phone number (optional): _____

If yes or no,

E-mail (optional): _____

END