



Department of Agriculture
Government of West Bengal

BANGLA SHASYA BIMA



BSB: UNIVERSAL COVERAGE & FASTER INDEMNITY



Power to Farmers

- Power to farmers of West Bengal: 100% Premium Subsidy
- Cost effective: Surplus premium refund from Insurance Companies

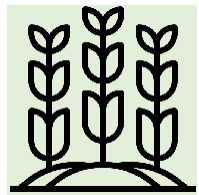
Tech Driven

- End to End digital transactions since inception: Enrolment & Claims
- Automated consensus management of stakeholders involved

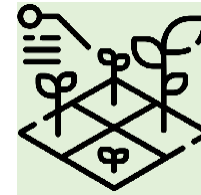
Claims Settlement

- Quick claims settlement – TAT 45 Days
- Objective: Before beginning of next season

Technology enabled platform for Bangla Shasya Bima Scheme (BSB)



Ensure better implementation of Crop Insurance Scheme resulting universal coverage for farmers and faster indemnity transfer.



Cloud, mobile and web-based hybrid platform with multi agency access layers and with use cases of Remote Sensing Technologies

1

Coverage Maximization

1. Digital tracking of Awareness activities
2. Krishak Bandhu Database link
3. Efficient digital process for all stakeholders

2

Indemnity lead time minimization

1. Easy claim processing
2. Integration of CCE & Enrolment platforms
3. Real time processing - End to end Digital process
4. On spot application digitization with Mobile App

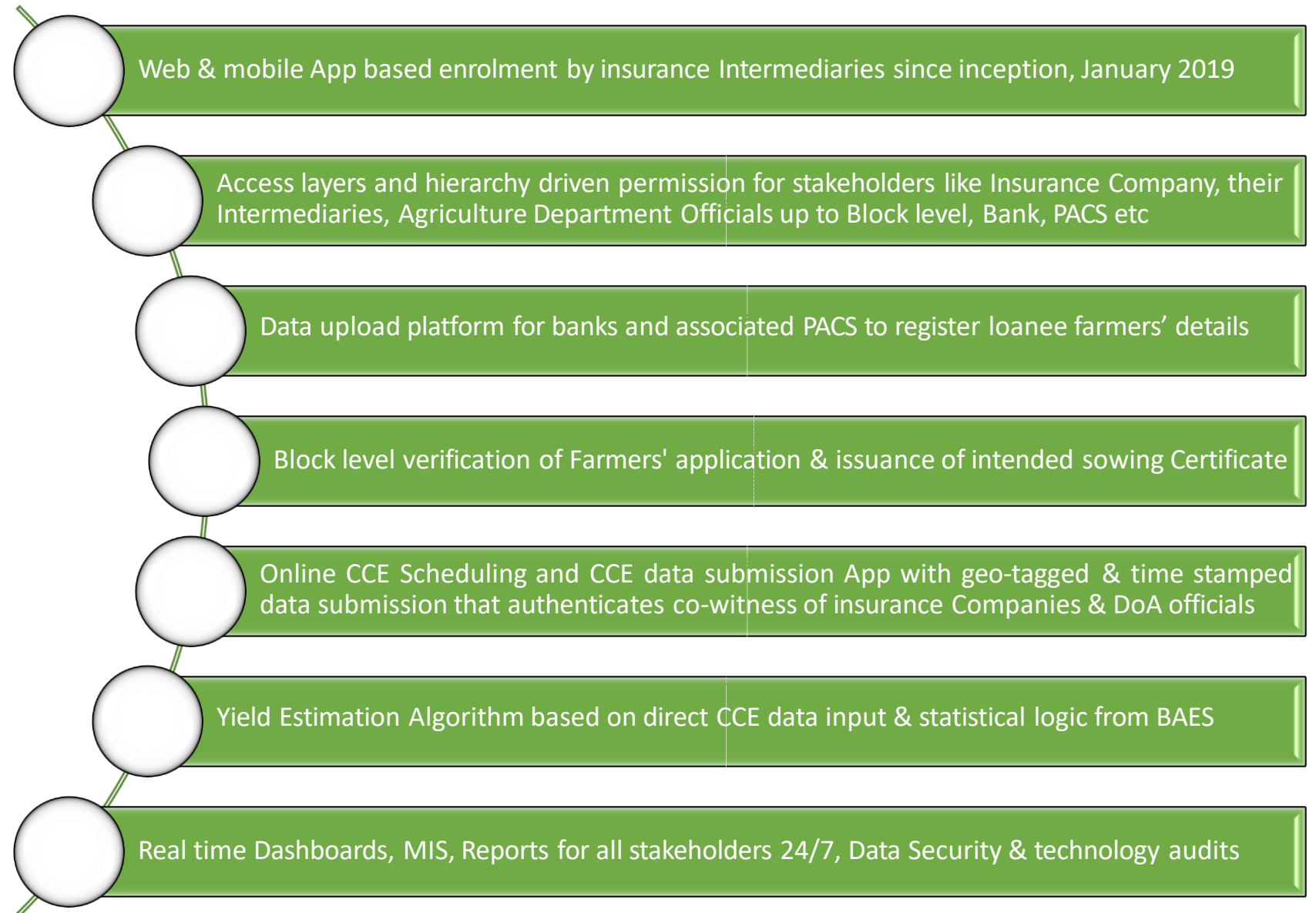
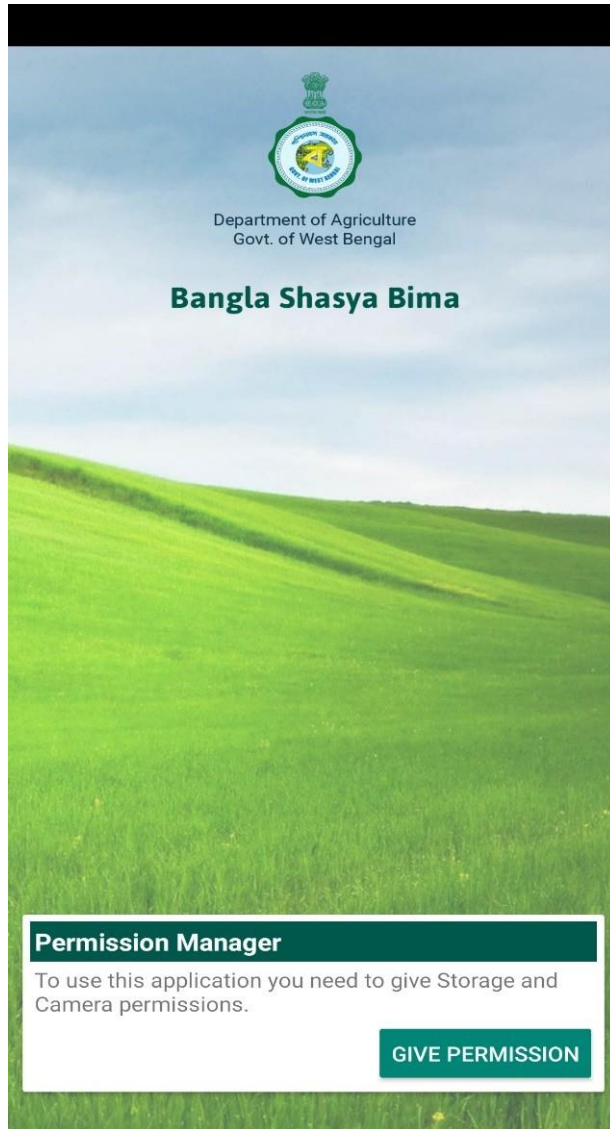
3

All stakeholders one platform

1. Department of Agriculture
2. BAES - Bureau of Applied Economics and Statistics
3. All Insurance companies
4. All insurance intermediaries
5. All Banks
6. Surveyors and Loss assessors

Remote Sensing based Tech Use cases to settle claims

End to End Digital Transactions since inception



End to End Digital Transactions since inception

00:42 36%

Registration

1 Insurance Zone:

Scheme Name
BSB

Year
2020-2021

Season
Rabi

District: *
ALIPURDUAR

Block: *
ALIPURDUAR - I

BSB Notified Crops:
WHEAT MAIZE (SUMMER) LENTIL
MUSTARD POTATO BORO PADDY
MAIZE (RABI)

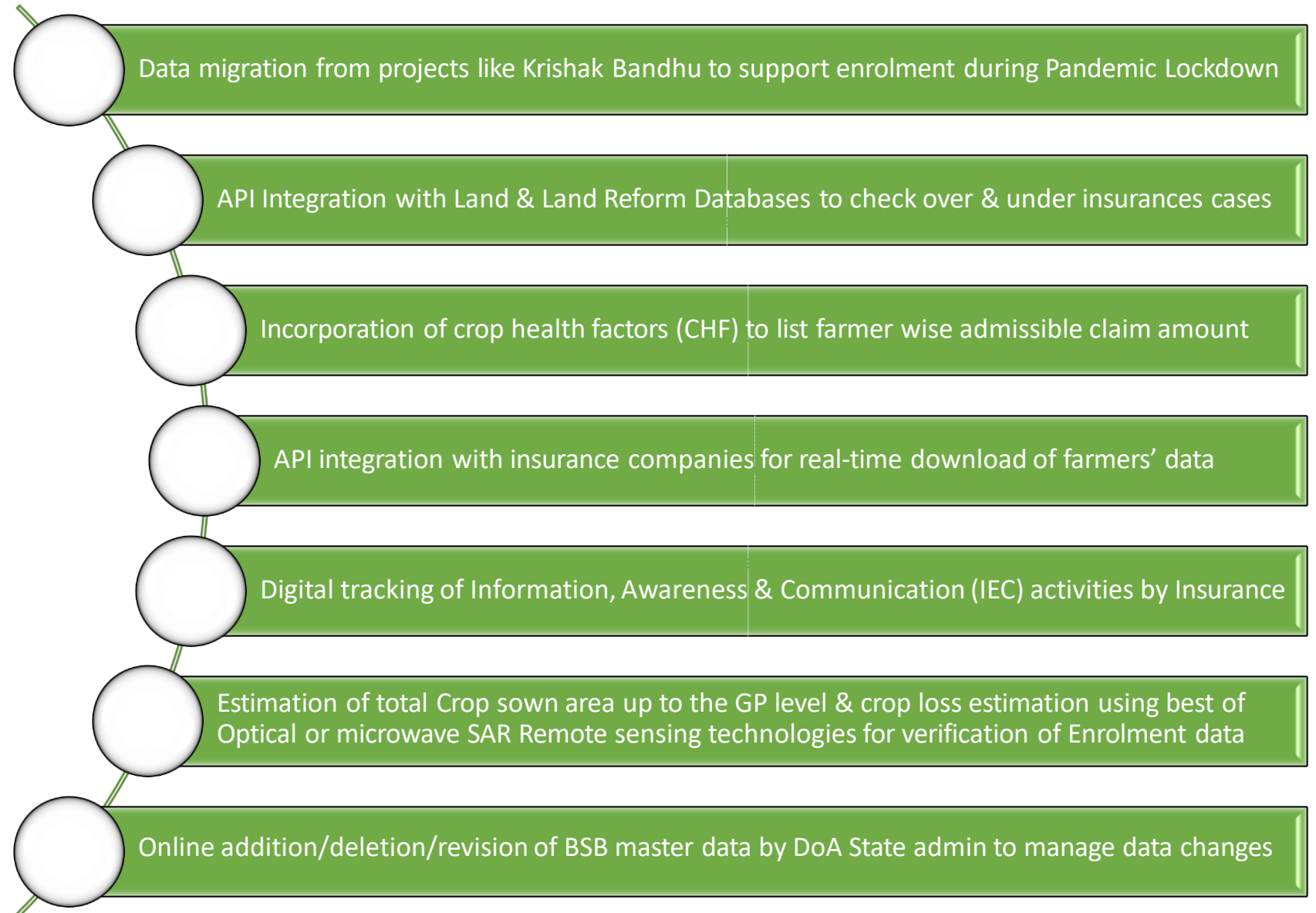
Voter Card Number: *
abcd123456

2 Farmer Details:

Farmer Name As Per Bank: *
TEST

Father/Husband: *
TEST

Relation with Farmer: *
Daughter





**50 lacs+ average Farmers registrations
in last 4 Crop Seasons from Kharif 2019**

**On an average 70% farmers have been enrolled under
Bangla Shasya Bima Scheme of Govt. of West Bengal**



**24802 Crop Crop Cutting Experiments
captured digitally in Rabi 2019-20**

**Realtime co-witness of Crop cutting Experiments with
automated consensus management of all stakeholders**



**2 lacs+ CCE based and 10000+
individual claims settled under BSB**

**Claim Settlement Turn around time came down
significantly based on seamless communications**



**Remote Sensing Technology from
NRSC to manage claims in Pandemic**

**Optical (Sentinel-2) & Microwave (Sentinel-1) data
used by NRSC (ISRO) to arrive Crop Health Factors**

Bangla Shasya Bima
Department of Agriculture, Govt. of W.B.

Home Profile User List

AGRICULTURE INSURANCE COMPANY OF WEST BENGAL (INSURANCE ADMIN), WEST BENGAL

Submitted List
Approved List
Rejected List
Reverted List

Year: 2020-2021 Season: RABI

Submitted List

Enter Application Id

Displaying applications 1 - 25 of 39 in total

#	Application Id	Farmer Name	Notified Area	Crop	District	Block	Area Insured (Acre)	Sum Insured	Gross Premium	Action	Action	Action	Action
1	R20210100115200057637	TEST IMAGE	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	0.34	13911.64	520.3	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
2	R20210100115200057636	IMAGE LAND	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	0.5	20458.3	765.14	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
3	R20210100115200057635	ANIK	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	1.6	65466.56	2448.45	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
4	R20210100115200057634	PDF IMAGE TEST	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	0.35	14320.81	535.6	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
5	R20210100115200057633	ANIK	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	1.6	65466.56	2448.45	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
6	R20210100115200057632	TEST PARCHA IMAGE	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	0.11	4500.83	168.33	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	
7	R20210100115200057631	ANIK	GP	BORO PADDY	ALIPURDUJAR	ALIPURDUJAR - I	1.6	65466.56	2448.45	<input type="button" value="Approve"/>	<input type="button" value="Reject"/>	<input type="button" value="Revert"/>	

68.183.92.44:3000/inc_applications/rabi_inc_pending_list#

Bangla Shasya Bima
Department of Agriculture, Govt. of W.B.

Log In

Role:

Email:

Password:

Session: Season:

Remember me.

Bangla Shasya Bima
Department of Agriculture, Govt. of W.B.

Application Form

Year: 2020-21 Season: Kharif

Check Existing Farmer:

Farmer Details

Name: Father's/Husband's Name: Relation with the Farmer:

Age: Gender: Date of Birth:

Mobile No.: Farmer Category: Nucleus Name:

Mobile with Number: Monthly Card Type: Monthly Card No.:

EPIC Card No.:

Upload ID Proof Documents:

Farmer's Residential Address

Address: District: Block:

Post: Village: Pin Code:

Farmer Bank Details

Account Holder's Name: Account No.: Account Type:

IFSC Code: Bank Name: Branch Name:

Upload Bank Documents Proof:

Crop Details

Block: Block: Crop Name:

Subsidy Rate: Subsidy Percentage:

Block	Subsidy	Area	Sum Insured	Premium	Govt. Subsidy	Farmer Premium	Status
Dumuria	0.34	13911.64	520.3	13911.64	520.3	0	<input type="button" value="Approve"/>
Dumuria	0.5	20458.3	765.14	20458.3	765.14	0	<input type="button" value="Approve"/>
Dumuria	1.6	65466.56	2448.45	65466.56	2448.45	0	<input type="button" value="Approve"/>
Dumuria	0.35	14320.81	535.6	14320.81	535.6	0	<input type="button" value="Approve"/>
Dumuria	1.6	65466.56	2448.45	65466.56	2448.45	0	<input type="button" value="Approve"/>
Dumuria	0.11	4500.83	168.33	4500.83	168.33	0	<input type="button" value="Approve"/>
Dumuria	1.6	65466.56	2448.45	65466.56	2448.45	0	<input type="button" value="Approve"/>

Upload New Cover Certificate/Annexure (PDF):

How to Apply:

Bangla Shasya Bima
Department of Agriculture, Govt. of W.B.

Insurance Premium Calculator

Season:

District:

Area (in Decimal):

Notified Unit:

Year:

Block:

Premium Rate:

Govt. Subsidy to Farmer:

Scheme:

Crop:

Sum Insured:

Farmer Premium Amount:

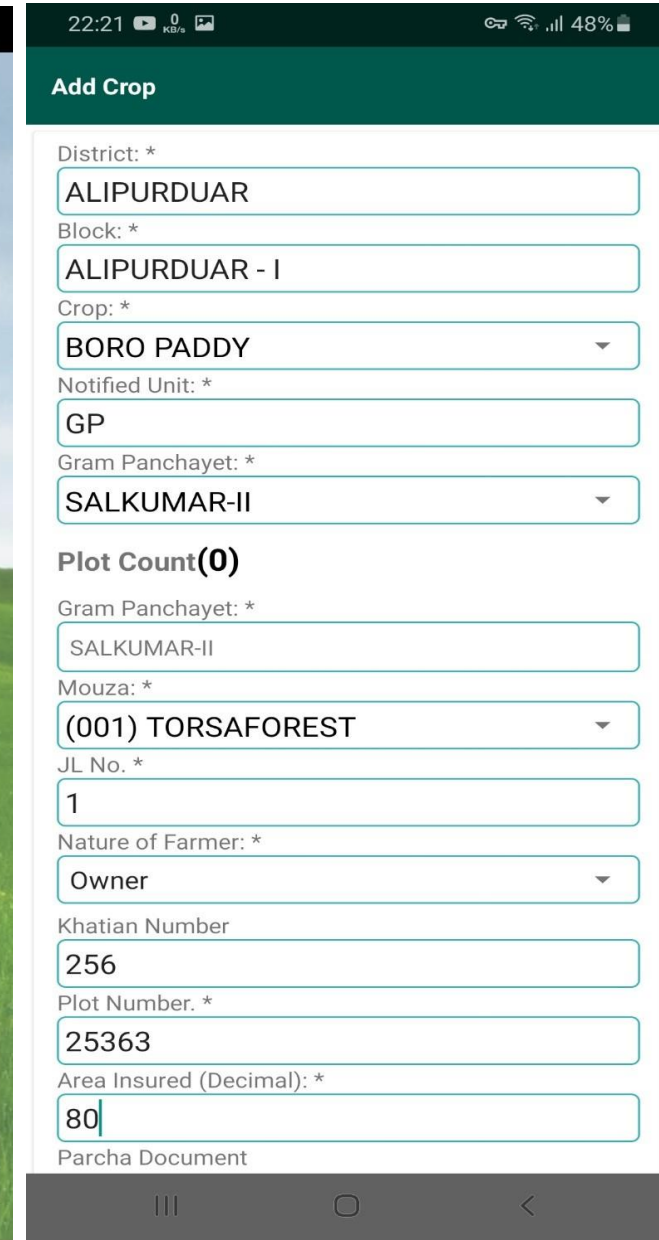
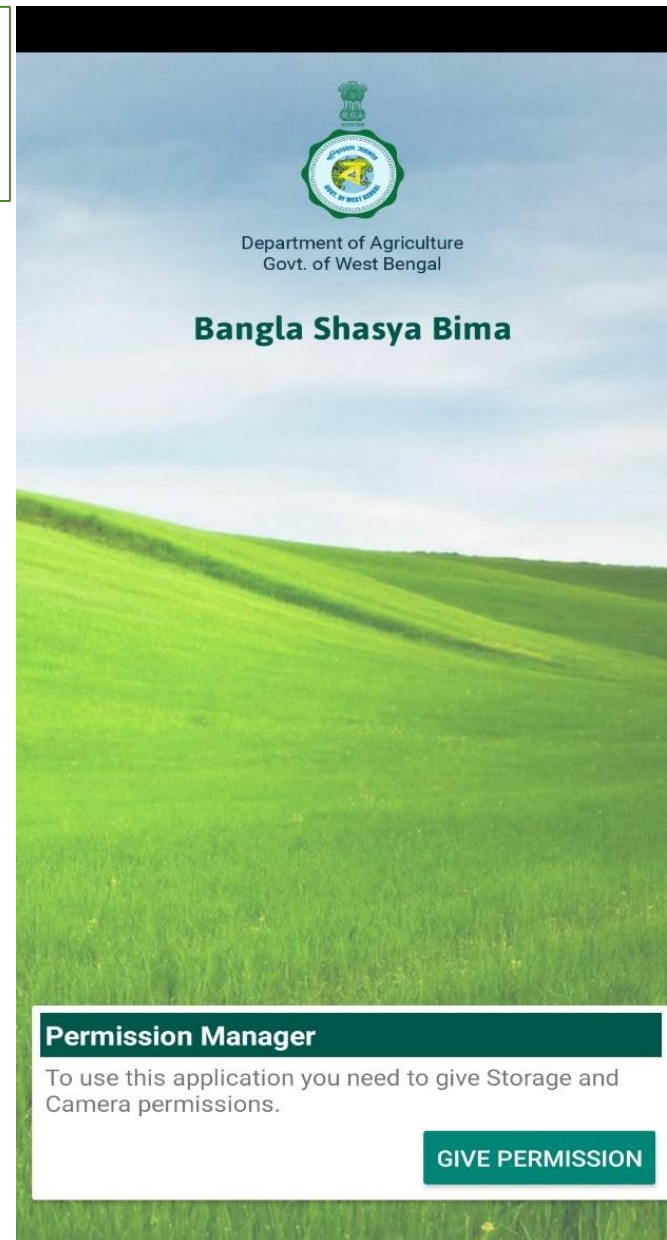
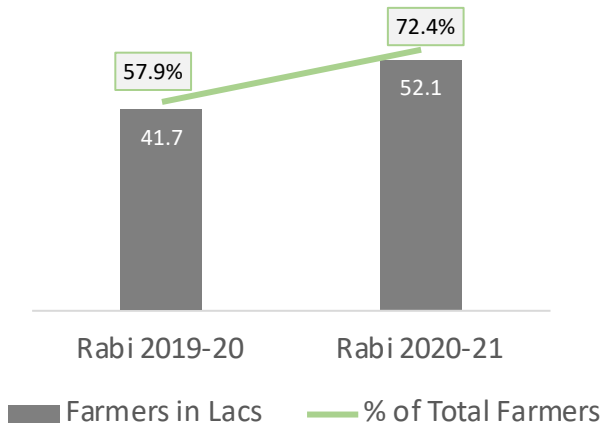
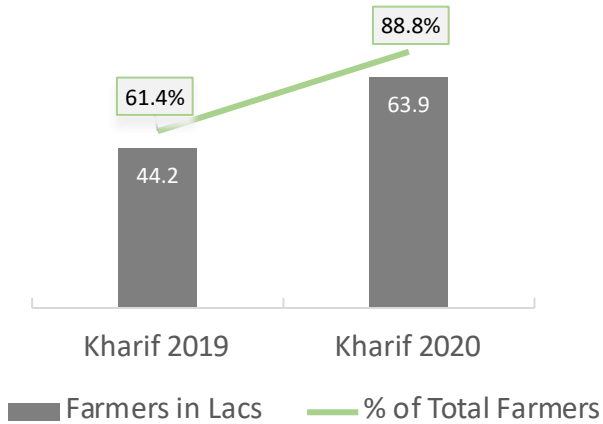
Massive Enrolment through Mobile & App Interfaces of BSB

Real time enrolment of applicant farmers on BSB mobile application and Web interfaces by Insurance Intermediaries and Farmer Producer Organizations

Universal Coverage: Benefit of 100% premium Subsidy to Farmers

Realtime Digital Transactions at last mile

- Enrolment on Web & App
- Double Authentication through Aadhar & EPIC
- Document digitization & instant upload
- Online Confirmation from Block officer regarding Sowing/intended sowing
- Aggregation of proposal forms at district level
- Generate Approved list
- Farmers getting SMS on Enrolment



Realtime Land Data Authentication through Land Record Integration



Total Land:
86,87,540 Ha

Total Cultivable Land:
54,63,678 Ha (63%)

Farming Household:
72 Lacs

Insured Farmers:
63.9 Lacs (Kharif'20)

Total land holders:
430 Crore

Mouzas:
42159

Land record detail is one of the major requirements under the BSB scheme. Manual verification of the land record data is a challenge.

1. Mapping Location master of BSB with Land and Land Reforms Databases of Govt. of West Bengal
2. Integration of land record API from Land & Land Revenue Department with BSB. This would act as verification tool for both Primary data entry operators and layers approvers from both Insurance companies and DoA Officials
3. Flag for over insurance on BSB. Over insurance cases are occurring due to lack of realtime land record verification. It is found that either single farmer has taken multiple insurance on same plot no. or the area entered of the plot is more than the actual area

Farmer's Residential Address

Address KOL District BANKURA Block BANKURA - II
Gram Panchayat BIKNA Village AGRA Pin Code 765567

Crop Details

District BANKURA Block BANKURA - I Crop PADDY
Notified Unit GP

Gram Panchayat	Mouza	JI No	Plot Number	Khatian No	Nature of Farmer	Name of Owner	Relationship with Owner	Annexure X	Action
ANCHURI	(055) GOURIPUR	55	30	788	Non-Owner Cultivator	Ram	Mother		Verify Land Details

Realtime CCE Data & Stakeholders' Consensus Management

CCE Data

Farmer ID

Lat-Long

Crop Details

CCE date

Village- GP - Block

Cutting Area

photographs

Crop Weight

Yield



1 DoA, Govt of WB

2 Agri Statistics

3 BAES

4 Insurance Companies

5 Banks

Automated consensus management of all stakeholders at Field

Individual Settlement
End of season Claim Settlement

30 Sec

7 Days

45 Days



Farmer in Distress



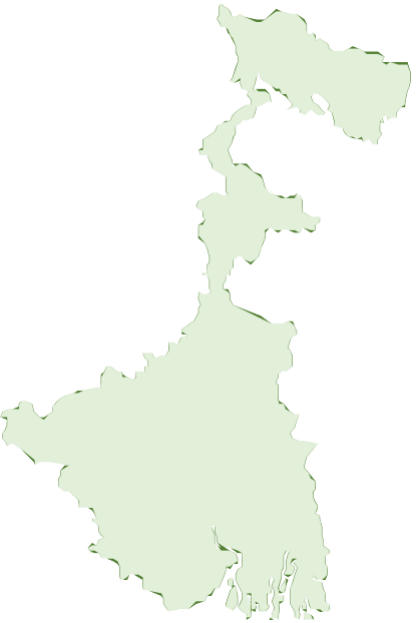
Farmer gets Call



Farmer gets Claim



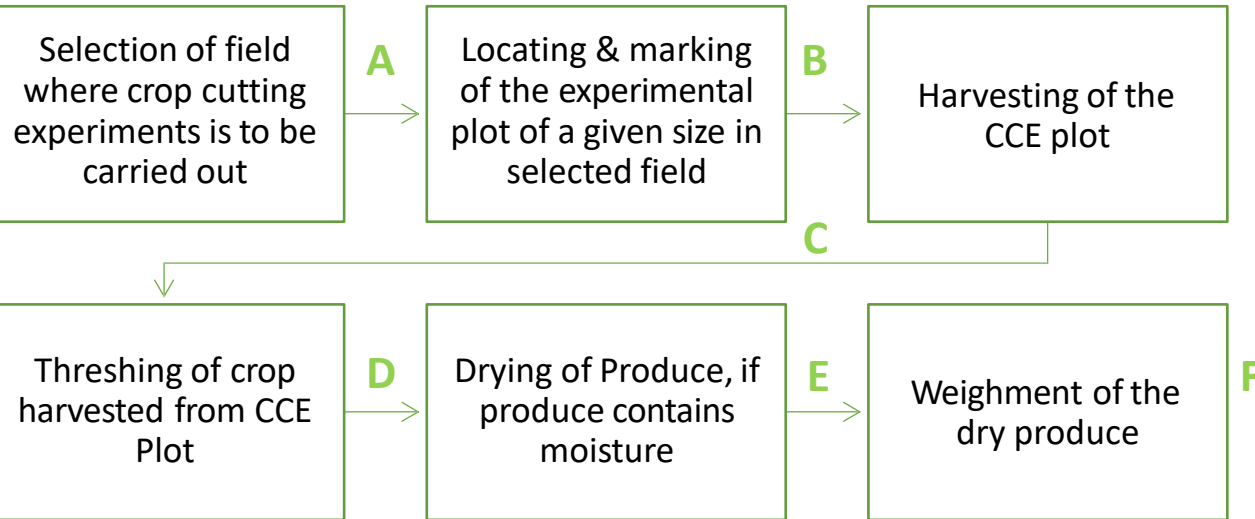
Farmer starts farming



Micro Video, Photograph & Data Capture

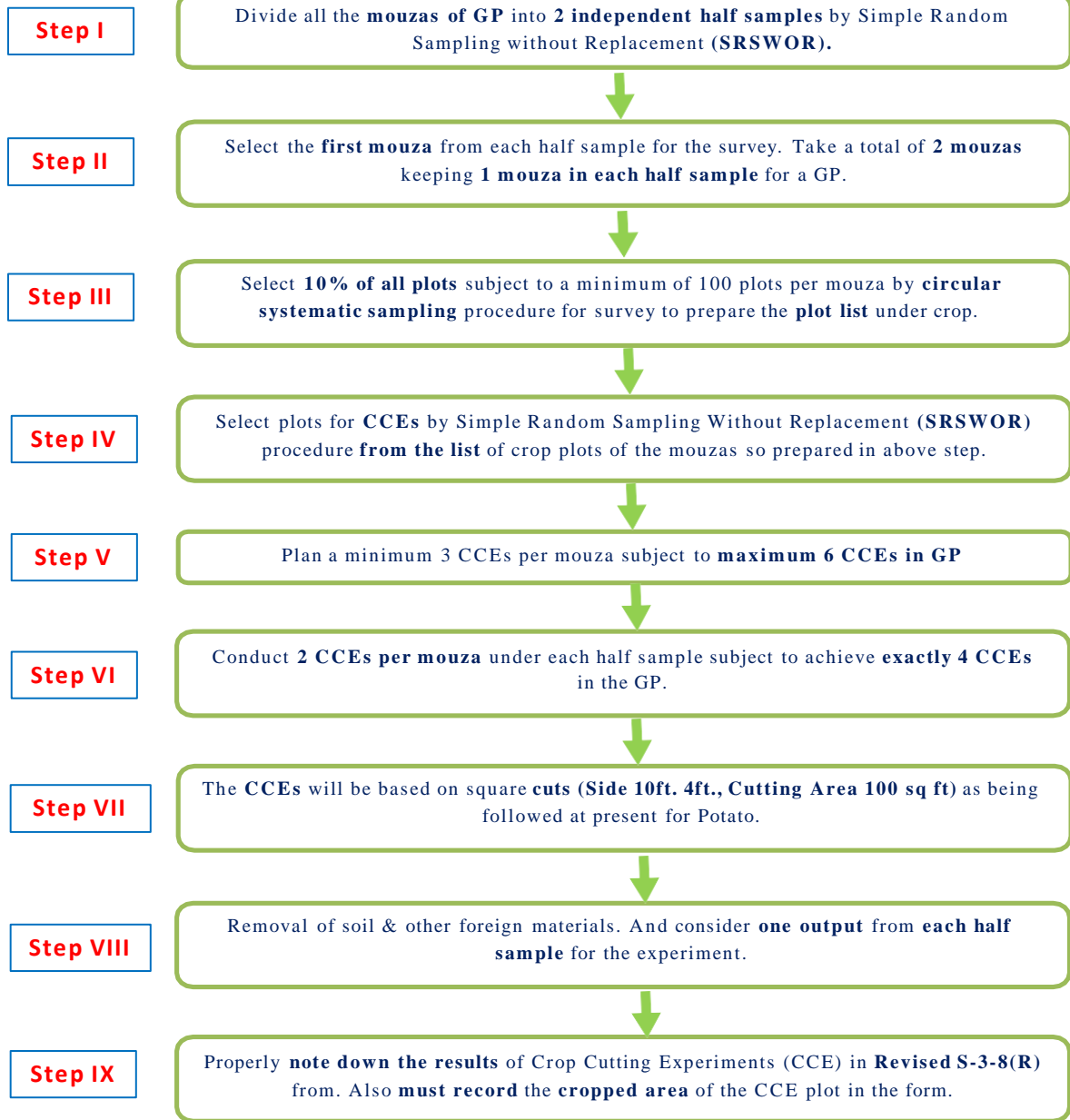


Application built on CCE processes, Work Steps (Paddy) & Algorithms

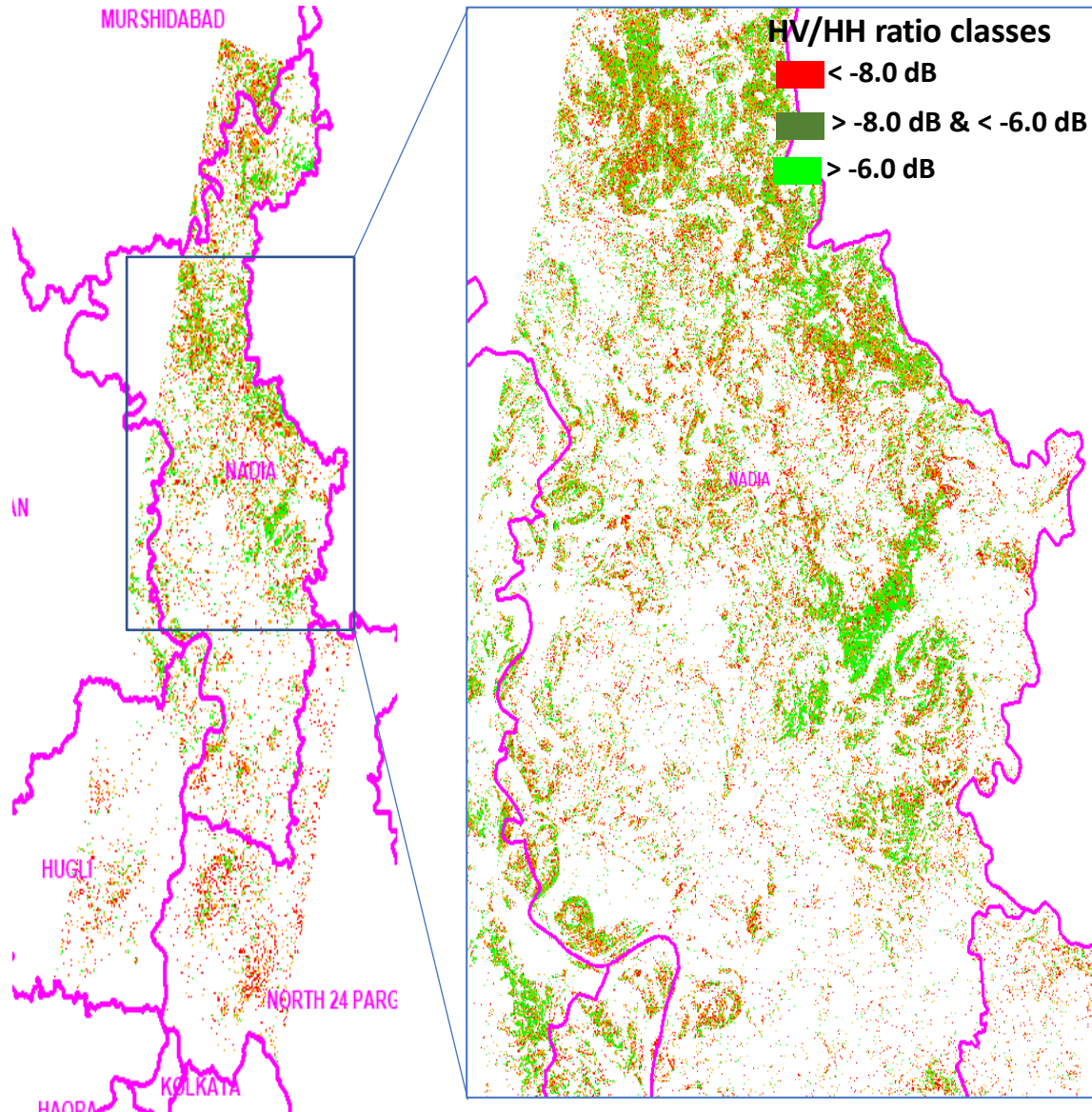


- Crop Cutting Experiments (CCEs) are used for claim settlement for field Crops.
- CCEs are done based on a statistical procedure to provide unbiased efficient estimates of the mean yield in each Insurance Unit (GP/Mouza).
- Highlights of CCE processes, steps & Algorithm

Sub Sample: 1 (CCE1)	Unit	Rules/Notation
Cutting Area	Sq ft	CA11
Crop weight in CA11	gms	W11
Crop Plot Area	Decimal	A11
Crop Plot Area	Ha	A11*0.00404686
Production in Crop Plot 1	Kg	P11=(W11*A11)/CA11
Sub Sample: 1 (CCE2)		
Cutting Area	Decimal	CA12
Crop weight in CA12	Kg	W12
Crop Plot Area	Decimal	A12
Production in Crop Plot 2	Kg	P12=(W12*A12)/CA12
Yield Calculation (Sub Sample 1)		
Production of Sub sample 1	Kg	P1=(P11+P12)/2
Area of Subsample 1	Decimal	A1=(A11+A12)/2
No of Crop Plots in Mouza 1		m1
Production (Mouza 1)	Kg	P(M1)=m1*P1
Area (Mouza 1)	Kg	A(M1)=m1*A1
No of Mouza in Gram Panchayat (GP1)		g1
Production (GP 1)	Kg	P(G1)=g1*P(M1)
Area (GP 1)	Decimal	A(G1)=g1*A(M1)
Yield (GP1)	Kg	Y(G1)=P(G1)/A(G1)



CCEs got replaced by Remote Sensing Technologies (NRSC, ISRO) in Pandemic



Quantitative

All crop stages
High temporal
resolution

Multiple crop
risks

All Crop fields
(10X10)

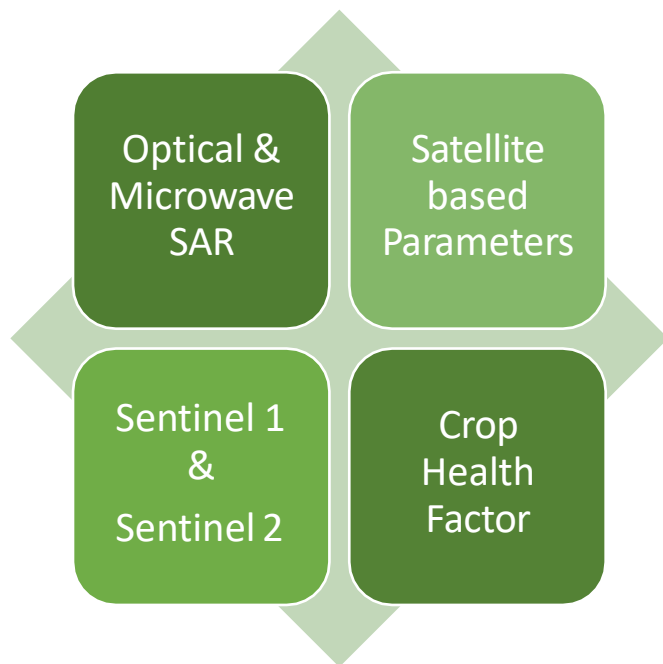
No Basis Risk

Transparent and
objective

5X Field
Observations

Quick
computation 45
days TAT

Scope for higher
granularity



Factors that influence the leaf optical properties are the internal or external structure, age, water status, mineral stress, and the health of the leaf.

Crop Greenness **NDVI**

- Indicative of chlorophyll content
- Range of -1 to 1
- 0.6 and above indicate healthy vegetation

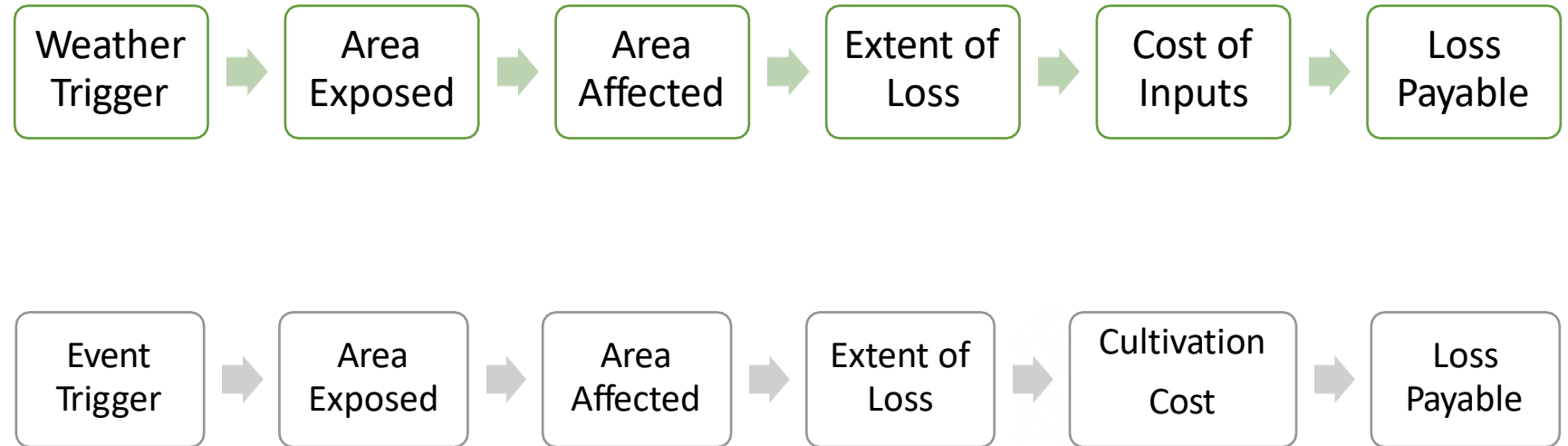
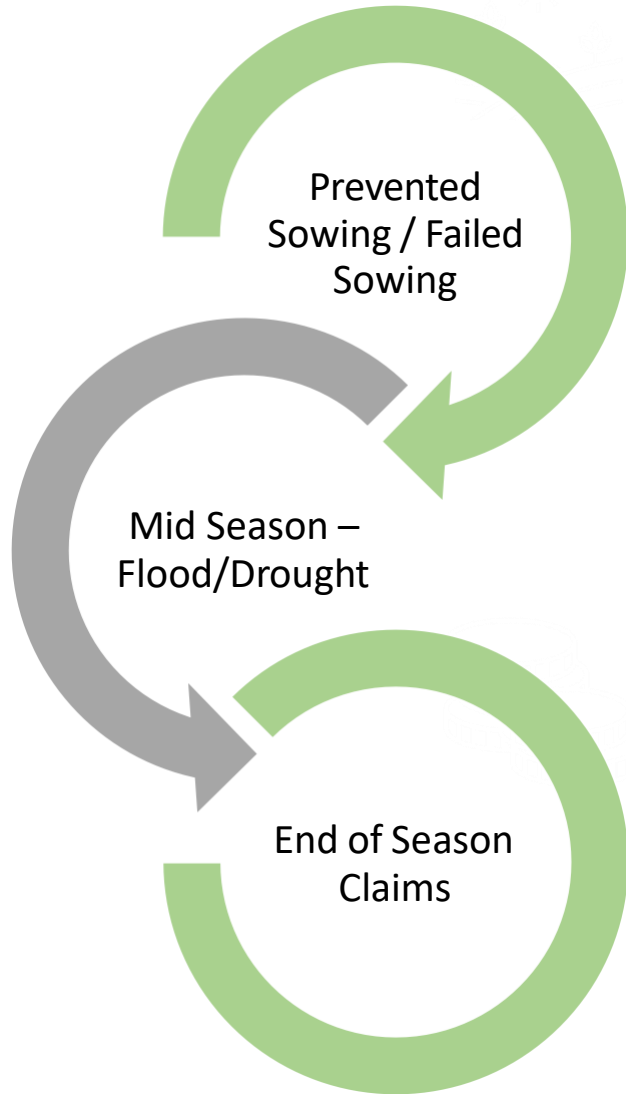
Crop Wetness **LSWI**

- Indicative of water and moisture content
- Range of -1 to 1
- Drought indicator (< 0.1)

Crop Structure **B/S Ratio**

- Indicator of Crop Structure and Flooding
- Key parameter for Crop Mapping
- Height and biomass of crop

Claims Computation



$$\frac{(\text{Threshold CHF} - \text{CHF for the current year})}{\text{Threshold CHF}} * \text{Sum insured}$$

THANK YOU

Project Managed and Developed by

