



**Revised Operational Guidelines
for Bangla ShasyaBima (BSB) Scheme for
implementation of technology based crop insurance
during Kharif 2020.**

J. S. 20/10/2020

1. Background

West Bengal is principally an agrarian state having about 72 lakh farm families, most of whom belong to the small and marginal category. The cultivable area of the State is about 56 lakh hectares (LHa) out of which 52 LHa is under cultivation. The State Govt. is committed to the cause of the farmers' welfare and has been delivering crop insurance services to all categories of farmers, practically free of cost since 2011- 2012 Rabi Season, as a part of farmers' welfare measures.

During Kharif 2019 season, the Govt. of West Bengal has launched Bangla Shasya Bima (BSB), the flagship Crop Insurance Scheme of the State, with an endeavour to alleviate the administrative and coverage limitations faced during implementation of hitherto Centrally Sponsored Crop Insurance schemes and to extend hassle free benefits of crop insurance to all farmers of the State. In the last one year, there have been considerable improvements in implementation of crop insurance which are noticeable in terms of flexibility in setting crop specific cut-off dates for enrolment of farmers, dedicated state crop insurance portal, substantial increase in the coverage of farmers and complete administrative control of the State towards effective and efficient implementation of the scheme.

However, a huge number of farmers have still remained outside the purview of crop insurance. Moreover, the surveillance of crop health and the assessment of claims based on Crop Cutting Experiments (CCEs) involve manual intervention and entails delay in assessment and settlement of claims. This has necessitated further technological interventions in extant BSB scheme, by the way of application of remote sensing techniques and use of meteorological data, supplemented by field level observations. Hence, a technology based version of **Bangla Shasya Bima Scheme** has been conceptualized to overcome the aforementioned shortcomings and shall be operational for Kharif 2020, with Agriculture Insurance Company of India as the Implementing Agency. **The scheme leverages on satellite data, rainfall data and field level data generated for ground-truthing and is expected to lead to a faster and more objective assessment and settlement of crop insurance claims. In addition, the scheme is expected to further expand coverage of farmers, rationalize the claim assessment procedure and actuarial pricing of the product.**

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2. Objective of the Scheme

The technology based Bangla Shasya Bima Scheme aims at supporting sustainable production in agriculture sector of the State of West Bengal by way of:

- a) Providing financial support to farmers suffering from crop loss/damage arising out of unforeseen events by fully subsidizing the insurance premium.
- b) All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas and having insurable interest are eligible for coverage.
- c) Objective and fast settlement of claims using remote sensing and rainfall data, supplemented by field data collection through objective and transparent ground-truthing process.
- d) Rationalization of the claims assessment procedure and actuarial pricing of the product.

3. Implementing Agency

The scheme shall be implemented by Agriculture Insurance Company of India Ltd (AICIL), with technology support from National Remote Sensing Centre – ISRO.

4. Coverage and Enrolment of Farmers

- a) All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas during the current season and having insurable interest are eligible for coverage. For this purpose, State Govt. will share the integrated database of farmers with AICIL segregated Insurance Unit-wise and notified crop-wise, for Kharif 2020 season which shall be considered as list of insured farmers for the purpose of the scheme. The format for sharing such data will be provided by AICIL.
- b) The enrolment of farmers would be through a master policy issued at State/District/Block level in the name of the Director / Deputy Director/ Assistant Director of Agriculture. The list and individual details of farmers enrolled would be an addendum and integral part to the master policy. A draft format of the master policy has been attached in Annexure 1. All farmers covered under the scheme will be issued a “Certificate of Insurance” which will be reckoned as a proof of crop insurance and produced to the Bank/ PACS for the purpose of sanction of crop loan, if required.
- c) The existing farmer database under BSB Scheme and Krishak Bandhu (AI) Scheme will be used initially for automatic coverage during Kharif 2020 season.
- d) Banks/ PACS will not need to cover the loanee farmers during Kharif 2020 as most of the farmers will be already covered in the Master Policy initiated by the Asst. Director of Agriculture (ADA) of the Block. However, for farmers not covered under BSB Scheme during Kharif 2019 season, the concerned Bank/PACS may prepare a list as per format in Annexure-B and forward it to the concerned ADA within the cut-off date

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for coverage.

- e) Eligible farmers outside the database mentioned at (c) above can get themselves enrolled through the online **BSB App** with the help of Local Resource Persons (LRPs) specially trained in usage of the *App* with the assistance of AICIL/ ADA. The list of such farmers will be prepared IU-wise and crop-wise by the ADA in Annexure-B and forwarded to AICIL within the cut-off date for coverage under the existing Master Policy for the concerned IU. Expenses incurred in this matter will be borne by the AICIL as publicity/welfare measure.

5. Coverage of Risks and Exclusions

5.1 Prevented Sowing/ Failed Sowing:

- a) In cases where majority of the insured farmers of a notified area, having intent to sow/plant and have incurred expenditure for the purpose, are prevented from sowing/planting the insured crop due to adverse weather conditions, shall be eligible for indemnity claims up to a maximum of 25% of the sum-insured. Only Aman Paddy for Kharif season would be eligible for Prevented Sowing/ Failed Sowing cover.
- b) Cut-off date for declaration of Prevented Sowing/Failed Sowing would be as per the notification.
- c) Trigger for evaluation of Prevented Sowing/Failed Sowing for each insurance unit (IU) would be:
- i. Weather based term sheets to identify excessive rainfall and drought like scenario.
 - ii. Intimation by Assistant Director of Agriculture of the concerned block.
- d) On trigger for evaluation, an in-depth remote sensing-based analysis for the IU would be done. The actual Crop Sown Area in the current year would be compared with the normal area sown as per past crop maps available from the satellite imagery for the IU.
- e) Notified IUs will be eligible for "Prevented Sowing/ Failed Sowing" pay-out of 25% of the Sum Insured only if more than 75% of the normal Crop Sown Area for notified crop remained unsown due to occurrence of any of the above perils in that IU.
- f) After payment of compensation, the coverage will cease, and no more compensation will be payable during the season.

5.2 Mid-Season Adversity:

- a) In cases where majority of the insured farmers of a notified area, are affected by widespread calamities such as drought and/or flood, then mid-season adversity claims up to 50% of the sum insured shall be payable to indemnify the farmers.
- b) For Kharif season only Aman Paddy would be eligible for this cover.
- c) Mid-Season Adversity can be invoked after the cut-off date for prevented sowing/failed sowing up to the cut-off date as declared in the notification.
- d) Trigger for evaluation of Mid-Season Adversity for each IU would be as per

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intimation received from the concerned ADA.

- e) On trigger for evaluation, an in-depth remote sensing-based analysis for the IU would be done. If the area affected by flood/drought is greater than 75% of the normal crop sown area, then mid-season adversity claims upto 50% of the sum insured would be payable and thereafter the insurance coverage for the season / crop for that IU will cease.

5.3 Crop - Sowing to Harvesting (Season End Claims):

- a) Comprehensive risk insurance will be provided to losses due to widespread non-preventable risks, viz. Drought, Dry spells, Flood, Inundation, Pests and Diseases, Landslides, Natural Fire and Lightening, Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane and Tornado.
- b) Crop Health Factor (CHF) derived from the satellite data and rainfall / weather data will form the basis to arrive at the shortfall in expected yield, if any, for determination of season-end claims for each IU. The following parameters will be considered to arrive at the Crop Health Factor for each crop and IU:
- i. **Crop Greenness** as measured by NDVI (Normalized Difference Vegetation Index): Healthy vegetation (chlorophyll) reflects more Near-Infra-Red (NIR) and green light compared to other wavelengths and absorbs more red and blue light. NDVI quantifies vegetation by measuring the difference between near-infrared (which vegetation strongly reflects) and red light (which vegetation absorbs). More the NDVI, higher the greenness of the crop and higher the expected yield.
 - ii. **Crop Wetness measured by LSWI** (Land Surface Water Index): LSWI indicates the total amount of liquid water in the vegetation and its soil background. The LSWI uses the Short Wave Infra-Red (SWIR) and the NIR regions of the electromagnetic spectrum. More the LSWI, higher the water availability to the crop. LSWI is also used to identify flood and inundation scenarios.
 - iii. **Crop Structure measured by Backscatter Ratio (SAR)**: In Synthetic Aperture Radar (SAR) imaging, microwave pulses are transmitted by an antenna towards the earth surface. The microwave energy scattered back to the satellite is measured. The SAR makes use of the radar principle to form an image by utilizing the time delay of the backscattered signals. Height and structure of the crop can be estimated by SAR.
 - iv. Rain fall data at block level measured by existing AWS/ Weather Stations/ ARGs for the current season will be used. For historical weather data, if sufficient AWS/ WS / ARG data is not available, satellite-based rainfall data from IMD would be used.
 - v. Qualitative Crop assessment based on comprehensive ground truthing exercise conducted by AICIL would also be used as an input for arriving at the crop health factor. A ground truthing protocol with the technological inputs of NRSC-ISRO would be developed and implemented by AICIL.

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- vi. Threshold CHF for each IU would be calculated by multiplying the average CHF (from Kharif2016 onwards) by a suitable indemnity factor.

c) Claim amount would be computed using the below mentioned formulae:

$$\text{Claim payable/hectare} = \frac{(\text{Threshold CHF} - \text{CHF for current year}) * \text{Sum Insured (minimum of 0)}}{\text{Threshold CHF}}$$

Example calculation for a particular IU & Crop:

Sum Insured per Hectare	Rs.50,000
Average CHF from 2016 to 2019	1.23
CHF FY 2020	0.7
Threshold CHF for FY 2020, considering IF @80%	= 1.23*0.8 = 0.984
Loss Cost Percentage	(0.984-0.7)/ (0.984) = 28.86%
Claim payable per Hectare	Rs. 14,430.89

6. Seasonality Discipline:

Sr. No.	Activity	Cut Off Date for Seasonality Discipline	
		Aman Paddy	Aus Paddy, Maize & Jute
1.	Cutoff Date for enrolment	31.08.2020	30.06.2020
2.	Cutoff Date for Prevented sowing/failed sowing trigger	15.09.2020	NA
3.	Cutoff Date (COD) for Mid-Season Adversity trigger	30.11.2020	NA
4.	Payment of sowing failure claims by AICIL	45 days from COD	NA
5.	Payment of mid-season adversity claims by AICIL	45 days from COD	NA
6.	Payment of end of season claims by AICIL	45 days from harvesting	45 days from harvesting

7. Payment of Claim

The liability of payment of all claims shall be of the Implementing Agency. The AICIL shall be responsible to settle all admissible claims within stipulated time period. Any long-term cumulative surplus (calculated from scheme inception) of premium over claims in excess of 20 % (factoring in management expense and reinsurance costs@15% and a cost of capital @5%) would be passed back to the Government of West Bengal.

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Example:

<i>Season</i>	<i>Premium for season</i>	<i>Claims for season</i>	<i>Cumulative Claims (A)</i>	<i>80% of Cumulative Premium (B)</i>	<i>Refund to GoWB (B-A)</i>	<i>Cumulative Loss Ratio</i>
Kharif 2020	500 Crs	300 Crs	300 Crs	400 Crs	100 Crs	80%
Rabi 2020	600 Crs	750 Crs	1050 Crs	880 Crs	0 Crs	95%
Kharif 2021	700 Crs	450 Crs	1500 Crs	1440 Crs	0 Crs	83%
Rabi 2021	800 Crs	550 Crs	2050 Crs	2080 Crs	30 Crs	80%

8. Roles and Responsibilities of various agencies:

8.1 Government of West Bengal:

- 1) Issue necessary directive to all agencies / institutions/ Govt. departments/ committees involved in administration of the scheme.
- 2) Notify insurance unit area at gram panchayat level for major crops and for other crops, unit size may be above the level of Gram Panchayat.
- 3) Notify district wise crop wise cut-off date for end of harvesting.
- 4) To notify district wise and crop wise normal sowing and harvesting calendar.
- 5) To provide crop wise, IU wise data of normal area sown.
- 6) Notify cut-off dates for invoking provision of prevented sowing.
- 7) Provide the list of enrolled farmers and their corresponding details to the AICIL as per format specified in Annexure B to the Master Policy.
- 8) Ensure that all necessary steps have been taken to ensure that the attached list of enrolled farmers and their corresponding details are true and accurate, and all KYC norms have been fully complied with.
- 9) The State Govt. may issue directives to all stakeholders from time to time for smooth implementation of the scheme. Technical Expert (s) on Remote Sensing Technology from the Department of Science & Technology and Biotechnology or from other Department (s) of the State Government having such experts may be nominated in the SLCCCI and SLMC.


8.2 Agriculture Insurance Company of India:

- 1) The AICIL will liaise with State Govt. and agencies/ institutions/ committees involved in implementation of the technology based BSB Scheme.
- 2) Furnish the necessary details to SLCCCI as may be required as per the notification.
- 3) Underwriting – responsibilities for processing and acceptance of risk.

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- 4) Claim processing / finalization and payment within the prescribed timeline. The claim remittance shall be made directly into farmer's bank account as per the account details furnished by the State Government in the aforesaid database.
- 5) AICIL will have the right to repudiate/ reduce claims, if during verification of bank records/ land records and assessment of claims for farmers, it is observed that:
 - Actual sown area was less than the actual insured area under a crop in anIU.
 - Different crop other than the declared/ insured was sown in the land survey no. insured.
 - Survey number insured was not actual crop growing survey no.
 - Area insured more than the total land holding of the farmer.
 - Multiple insurance for same crops grown on same land with multiple insures.
 - Sum Insured is more than the scale of finance for the insured crop.
- 6) Undertake extensive efforts to create awareness and generate publicity for tech based BSB at grass root level. Also coordinate with the State Govt. and other agencies for awareness and publicity of the scheme.
- 7) Develop a dashboard which provides the following information to the Government of West Bengal at an insurance unit level on real time basis:
 - a. Enrolment
 - b. Premium
 - c. Ground Truthing summary
 - d. Crop health factor
 - e. Claims
 - f. Loss Ratio.

All other provisions of the existing Operational Guidelines of BSB Scheme notified vide No. 302-AG/O/Crop Ins/7C-06/2018 dated 15/02/2018 will be applicable *mutatis mutandis*.


28/5/2018
JITENDRA ROY WBCS (Exe.)
Joint Secretary
Agriculture Department
Govt. of West Bengal

Annexure XI – Master Policy (draft)

Bangla ShasyaBima Scheme – Kharif 2020

Date: _____

This Policy is the evidence of a contract between Agriculture Insurance Company of India Limited ("the Company") and the Master Policyholder referred below.

Details of the Master Policy Holder

Name/Designation	
Block	
District	
Policy Number	BSBS/KH20/001

The following documents form part of the Master Policy:

1. Annexure A : Declaration by the Master Policy Holder
2. Annexure B : Format of List and Details of Enrolled Farmers
3. Annexure C : Revised Operational Guidelines of BSB Scheme

Agriculture Insurance Company of India Limited (hereinafter called "AICIL") agrees to pay the benefits as applicable to the list of enrolled farmers (*Annexure B*) as per the terms and conditions of the policy.

Agriculture Insurance Company of India Limited and the Master Policy holder agree that the all the terms and conditions as mentioned in Annexure C would be fully complied with.

Authorized Signatory,

Agriculture Insurance Company of India.

Master Policy Holder,
Government of West Bengal.

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Annexure XII - Declaration by the Master Policy Holder

Name/Designation	
Block	
District	
Policy Number	BSBS/KH20/001

The full and final list of enrolled farmers and their corresponding details have been presented to the Agriculture Insurance Company of India Limited as per format specified in Annexure B as a protected Microsoft Excel file named “BSBS/KH20/001.xlsx”.

I hereby declare that all necessary steps have been taken to ensure that the attached list of enrolled farmers and their corresponding details are true and accurate. All KYC norms have been complied with.

Further, all required checks and validations have been carried out to ensure that only those farmers with an insurable interest have been enrolled into this scheme.

**Master Policy Holder,
Government of West Bengal**

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Annexure XIII - List and Details of Enrolled Farmers

The full and final list of enrolled farmers and their corresponding details need to be presented to the Agriculture Insurance Company of India Limited as a protected CSV file named “**BSBS_KH20_001.xlsx**”. The sample csv file is attached for reference:



BSBS_KH20_001.xlsx

The following columns are to be provided:

1. District
2. Block
3. GP
4. Mouza
5. JL no.
6. Name of Farmer
7. EPIC Number
8. Father's Name (or) Husband's Name of Farmer
9. Area Insured in Acre
10. Crop Insured
11. Plot Number
12. Khatian number
13. Name of Bank
14. IFSC Code
15. Bank Account Number

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