Technical Note

For

"Restructured Weather Based Crop Insurance Scheme (RWBCIS) – Karnataka"

Name of Insurer	Kshema General Insurance Limited
Line of Business	Crop Insurance (Miscellaneous)
Product	RWBCIS – Karnataka
Name of the Appointed Actuary	Piyush Jain
Version Number	1.0
Date	29th July 2023

Section 1. General Information

SI. No.	Description	Details
1.01	Brand name of Product	RWBCIS
1.02	New or Modification of existing Product	New
1.03	Period of Policy	3 years
1.04	Category of Product	Indemnity Policy
1.05	Type of policy	Group Pricing with Individual Enrolment
1.06	Target Group	Farmers
1.07	Is the Product Reinsurance driven?	No
1.08	Add-ons that will be sold alongside:	None
1.09	Crops Covered	Refer the attached Rate chart for details.

Section 2. Summary of Benefit Structure

The scheme of RWBCIS intends to provide insurance protection to the cultivators against adverse weather incidences, such as Rainfall (Deficit Rainfall, Excess/Unseasonal Rainfall, Rainy Days, Dry-spell & Dry days), Temperature (High & Low), Relative Humidity, Disease Prone Weather, High Wind Speed, Hailstorm etc. which are deemed to adversely affect the Kharif & Rabi crops during its cultivation period.

Please refer the attachment to this note for detailed term sheets for each crop covered specifying the weather parameters that will be used for claims assessment.

Section 3. Data used

3.1 Source of Data

2016 - 2021 sum insured, claim and premium data by district, season and crop received as part of the tender process.

3.2 Data Checks, Adjustments and experience

The data has been received from the government and has been assumed to be accurate and correct.

Section 4. Assumptions and Methodology

i) Burning cost model has been used where claims for 2020 and 2021 as a proportion of sum insured has been assumed as the expected claims rate. These years are most reflective of the current term sheets and crops to be covered.

ii) The projection is done at district and crop level. Final rates for some crops within a district have been tweaked to suit the bidding strategy of the company.

Section 5. Gross Premiums

i) The overall gross premium for the entire contract was 24.45% of sum insured. The following loadings were added:
   - Expected Loss Ratio – 85.41%
   - Bank Charges & Commission – 0.82% of Gross Premium (4% of the Farmer share)
   - Marketing Expenses – 0.5% of Gross Premium (minimum mandatory charges)
   - Management Overheads – 3% of Gross Premium
   - Cost of Reinsurance – 9.67% (assuming 80% quota share with 2.5% reinsurance commission)
   - Profit Margin – 0.60%
   - Investment Income – Nil investment income has been assumed.

ii) The Gross Premium rates as a proportion of the sum insured will remain fixed over a period of 3 years. Further, no underwriter or other discretion is allowed in the rates.

Section 6. Rating Factors

i) The tender requires premium rates by district and crop. These rates will then be applied to area and sum insured.

ii) Based on limitations of the tender, the rates have been calculated by district and crop and no additional rating factors have been modelled.

Section 7. Discounts/loadings/Cancellation & Terminations

Not Applicable

Section 8. Business Projections

Amount in Rs. Crores

Item	Financial Year 1	Financial Year 2	Financial Year 3
Gross Written Premium	83.67	83.67	83.67
Expected Ultimate Loss ratio (inclusive of IBNR)(Gross)	85.41%	85.41%	85.41%
Profit margin	0.60%	0.60%	0.60%
RSM	10.72	10.72	10.72
Capital Required for this product at 150% of RSM	16.08	16.08	16.08

Based on the IRDAI (ALSM of General Insurance Business) Regulations 2022, as on the date of writing this note, the capital requirement for the annual expected premium for the contracts won is Rs. 248.88 Crore. The company is in the process of raising more capital and assurance has been obtained from the promoter that the required capital will be raised based on the requirements as per the actual written premium.

Section 9. Profit test, Sensitivity/Scenario test (using last year's area insured)

i) The data and assumptions used for the calculation of Pure Risk Premium are volatile and the actual experience can vary from the expected experience. Every 1% change in the loss ratio will lead to c.0.2% change in the profit margin.

ii) The company is in the process of procuring the reinsurance treaty and the reinsurance cost and retention rates are as per the latest expectations based on discussions till the timing of this note.

iii) It has been assumed that 80% quota share will be obtained by the company, with the reinsurer paying a 2.5% commission of the premium ceded to Kshema General Insurance.

iv) Every 10% increase in retention by the company (from the current 80%) will lead to a 1. 2% increase in the profit margin in the base scenario. However, this will lead to higher exposure for the company to any adverse claims experience covered by this policy.

v) Any change in commission, marketing expenses or management overheads will directly impact on the profit margins of the company.

Please note that all movements and impacts quoted above are in percentage points (i.e. as a proportion of premium) and not as a proportion of the metric mentioned.

Section 10. Reserves

Following Reserves are planned to be maintained by the company:

i) Unearned Premium Reserves (UPR) – Using the 365th method.
ii) Additional Unexpired Risk Reserves (AURR) – If required based on updated view of all assumptions by the company.
iii) Outstanding Case Reserves (OCR) – As per the assessment by the claims department.
iv) Incurred but not reported (IBNR) – Standard Actuarial Techniques of Expected Loss Ratio Method, Bornheutter-Ferguson method, chain ladder method etc. will be used for projection of IBNR.

Section 11. Premium tables / rate chart

Refer the attachment to this note.

Annexure – 2

I, Piyush Jain, the Appointed Actuary, certify that, in my opinion, the premium rates,advantages, terms and conditions of the above product/add-on are workable and sound, the assumptions are reasonable and premium rates are fair.

The rates, terms and conditions of the above-mentioned product are determined on a technically sound basis and are sustainable on the basis of the information and claims experience available.

I further certify that the premium is adequate to cover the claims cost. Also, where the premium is not deemed adequate, there will be a premium deficiency reserve, which is provisioned separately.

Signature of the
Appointed Actuary

Countersigned by:

Signature of CEO

Signature of PMC

Place:

Date:

Product	Season	State	District	Crop	Premium Rate (%)
RWBCIS	Kharif	Karnataka	Ballari	CHILLY	22.53
RWBCIS	Kharif	Karnataka	Ballari	Pomegranate	14.34
RWBCIS	Kharif	Karnataka	UttarKannada	Arecanut	23.90
RWBCIS	Kharif	Karnataka	UttarKannada	Ginger	39.00
RWBCIS	Kharif	Karnataka	UttarKannada	Mango	39.00
RWBCIS	Kharif	Karnataka	UttarKannada	Pepper	39.00
RWBCIS	Kharif	Karnataka	ChamarajNagar	Mango	15.00
RWBCIS	Kharif	Karnataka	Mandya	Mango	30.00
RWBCIS	Kharif	Karnataka	Bengaluru Rural	Grape	34.92
RWBCIS	Kharif	Karnataka	Bengaluru Rural	Mango	33.88
RWBCIS	Kharif	Karnataka	Raichur	CHILLY	28.30
RWBCIS	Kharif	Karnataka	Raichur	Mango	30.00
RWBCIS	Kharif	Karnataka	Raichur	Pomegranate	30.76
RWBCIS	Kharif	Karnataka	Chitradurga	Arecanut	11.20
RWBCIS	Kharif	Karnataka	Chitradurga	Mango	34.40
RWBCIS	Kharif	Karnataka	Chitradurga	Pomegranate	31.40
RWBCIS	Kharif	Karnataka	Mysuru	Mango	10.00
RWBCIS	Kharif	Karnataka	Kalaburgi	CHILLY	20.65
RWBCIS	Kharif	Karnataka	Kalaburgi	Grape	24.78
RWBCIS	Kharif	Karnataka	Kalaburgi	Papaya	35.51
RWBCIS	Kharif	Karnataka	Kodagu	Arecanut	34.89
RWBCIS	Kharif	Karnataka	Kodagu	Pepper	16.52
RWBCIS	Kharif	Karnataka	Bidar	Cauliflower	15.40
RWBCIS	Kharif	Karnataka	Bidar	CHILLY	17.00
RWBCIS	Kharif	Karnataka	Bidar	Ginger	13.48
RWBCIS	Kharif	Karnataka	Bidar	Mango	20.62
RWBCIS	Rabi	Karnataka	Bidar	Cauliflower	11.25
RWBCIS	Rabi	Karnataka	Bidar	CHILLY	11.25