

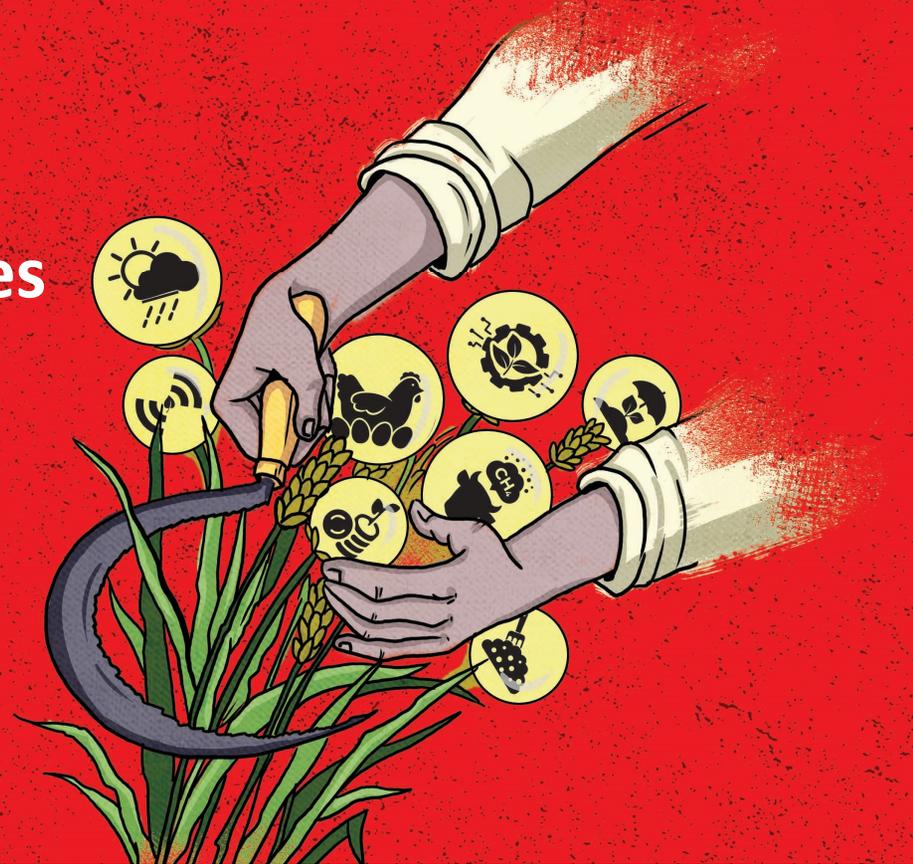


SUSTAINABLE FOOD SYSTEMS

An Agenda for Climate-risked Times

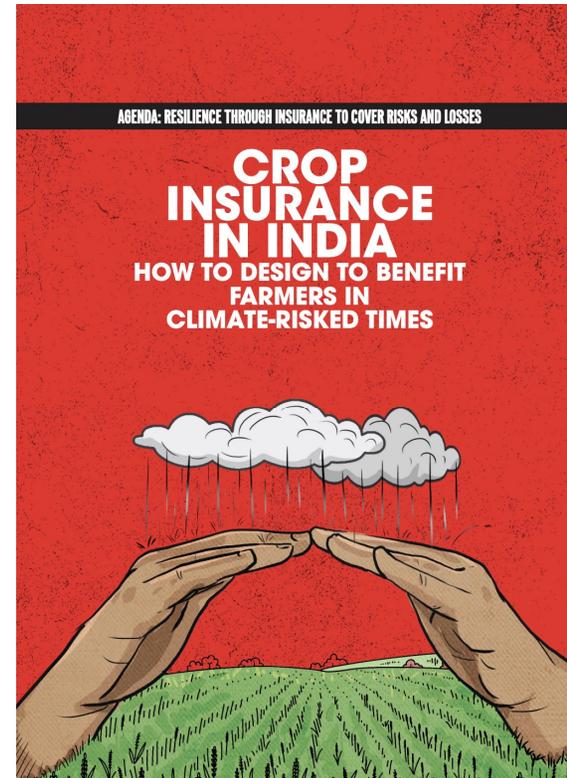
Crop Insurance in India

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Presentation Overview

1. Evolution of crop insurance in India
2. Major crop insurance schemes in India
3. PMFBY in states
4. PMFBY implementation (in numbers)
5. PMFBY implementation status:
Challenges from the ground
6. Possibilities and way forward



[Link to download](#)



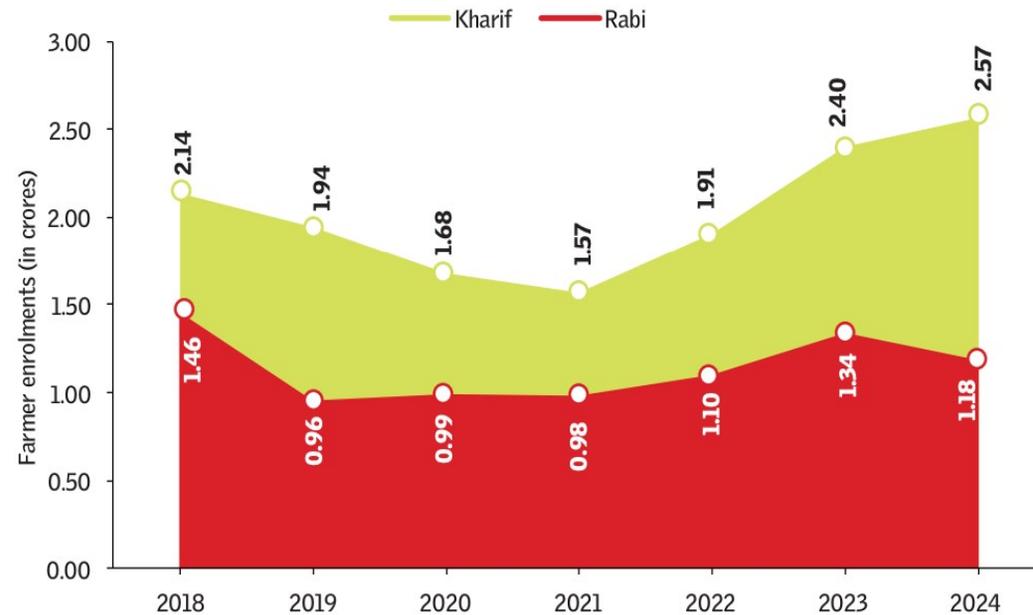
Evolution of crop insurance in India: Timeline

- 1972: First crop insurance pilot introduced
- 1985: Comprehensive Crop Insurance Scheme (CCIS) introduced
- 1999: National Agricultural Insurance Scheme (NAIS) launched
- 2007: Weather-Based Crop Insurance Scheme (WBCIS) pilot introduced
- 2010: Modified NAIS (MNAIS) was introduced
- 2016: **Pradhan Mantri Fasal Bima Yojana (PMFBY)** and **Restructured Weather Based Crop Insurance Scheme (RWBCIS)** introduced
- 2020: PMFBY Became voluntary for loanee farmers
- 2023: Yield Estimation System based on Technology (YES-TECH) and Weather Information Network and Data System (WINDS) initiatives launched



PMFBY (farmer enrollments)

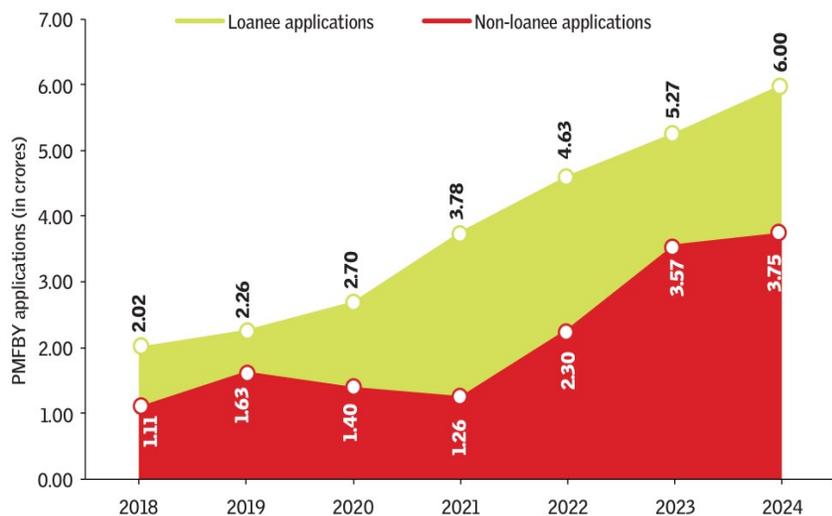
- Kharif season (2018-24):
19.5 per cent increase
- Rabi season (2018-24):
19.2 per cent decline



Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

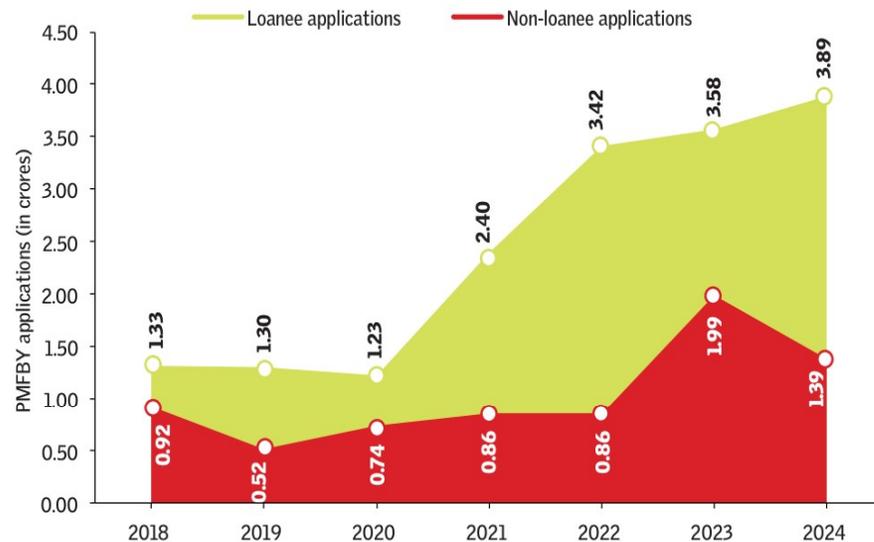


PMFBY (applications)



Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

Kharif season (2018-24):
197.6 per cent increase (loanee applications)
239.1 per cent (non-loanee applications)



Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

Rabi season (2018-24):
193 per cent increase (loanee applications)
50 per cent (non-loanee applications)



PMFBY (Premiums)

Gross Premium (State + GOI + Farmer's share)

- Kharif (2018-24): **17.4 per cent** increase
- Rabi: negligible change

State Premium

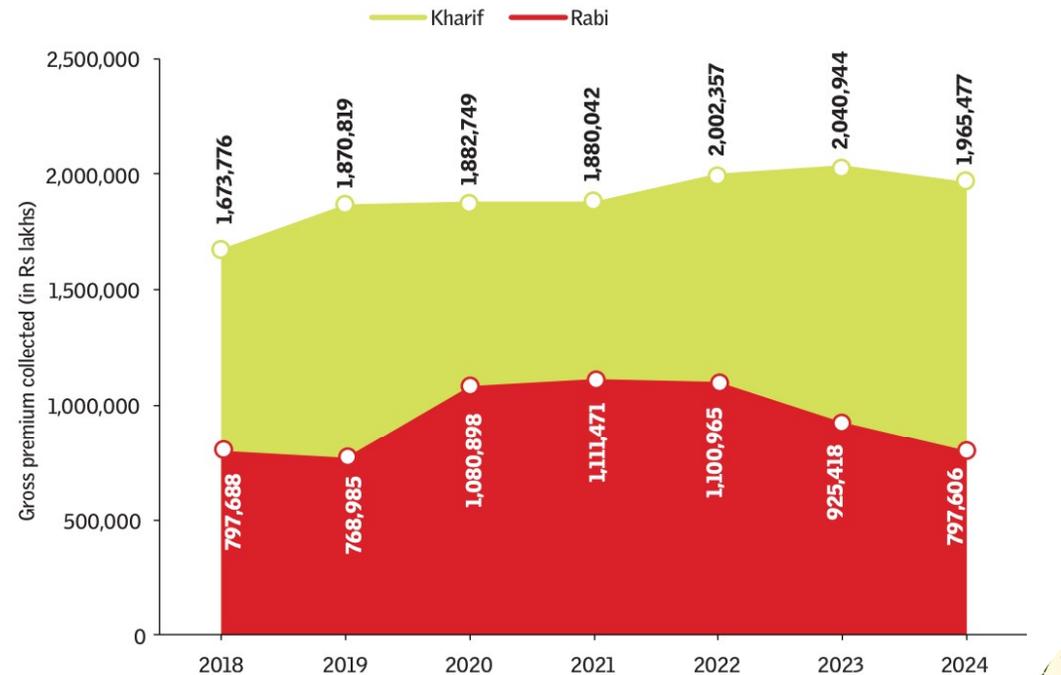
- **43.1 per cent** increase

GOI Premium

- **2.3 per cent** increase

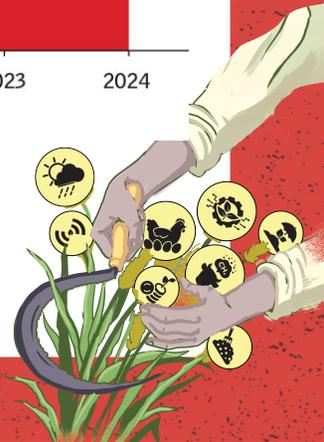
Farmer's Premium

- Kharif (2018-24): **41 per cent** decline
- Rabi (2018-24): **9.3 per cent** decline



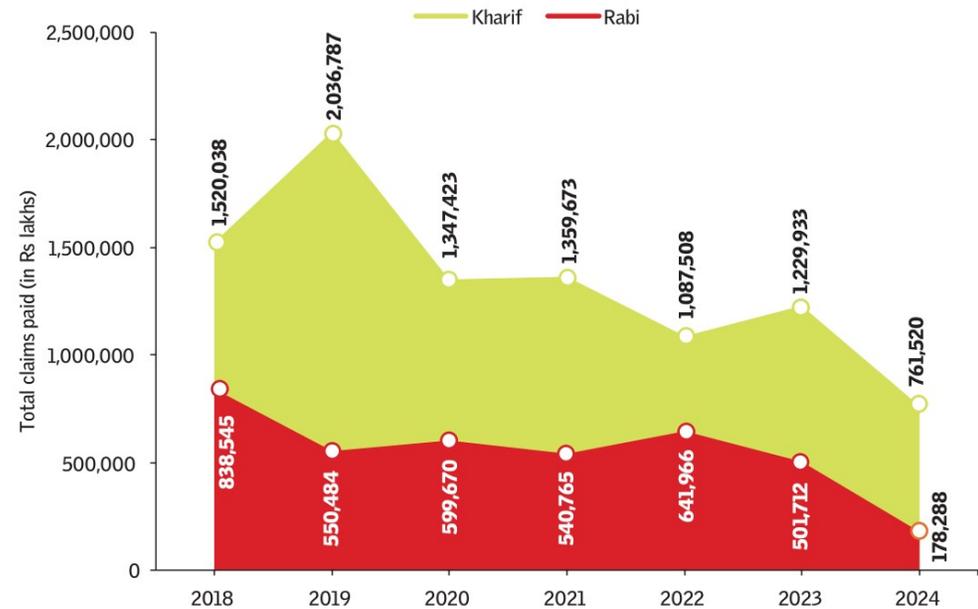
Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

Kharif season attracts higher gross premiums than rabi, reflecting the larger cropped area and higher enrollment in the monsoon season



PMFBY (Claims)

- Kharif (2018-24): **49.9 per cent** decline
- Rabi (2018-24): **78.73 per cent** decline



Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare



PMFBY (claim ratio)

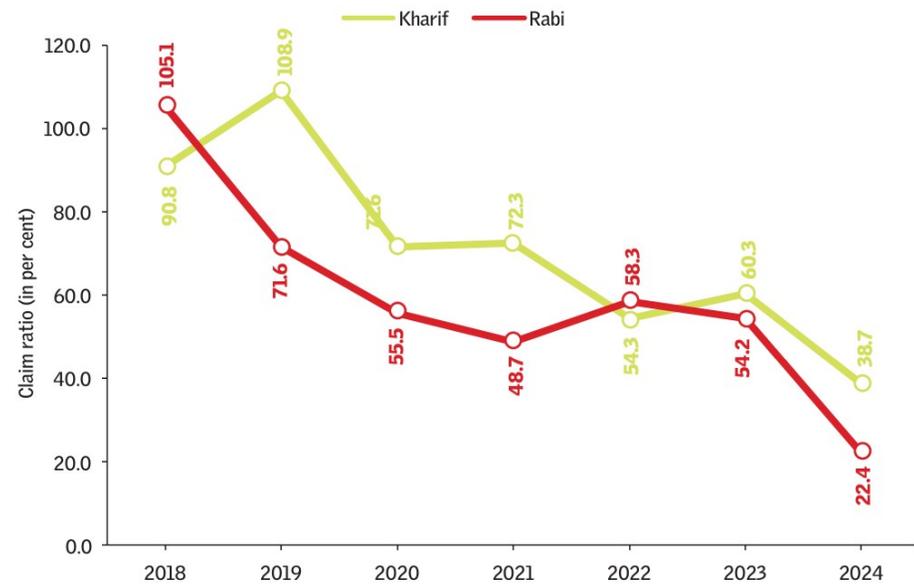
- Claim ratio (indicator)*: Pay out in claims versus premiums collected

Kharif:

- 2018: **90.8 per cent**
- 2024: **38.7 per cent**

Rabi:

- 2018: **105.1 per cent**
- 2024: **22.4 per cent**



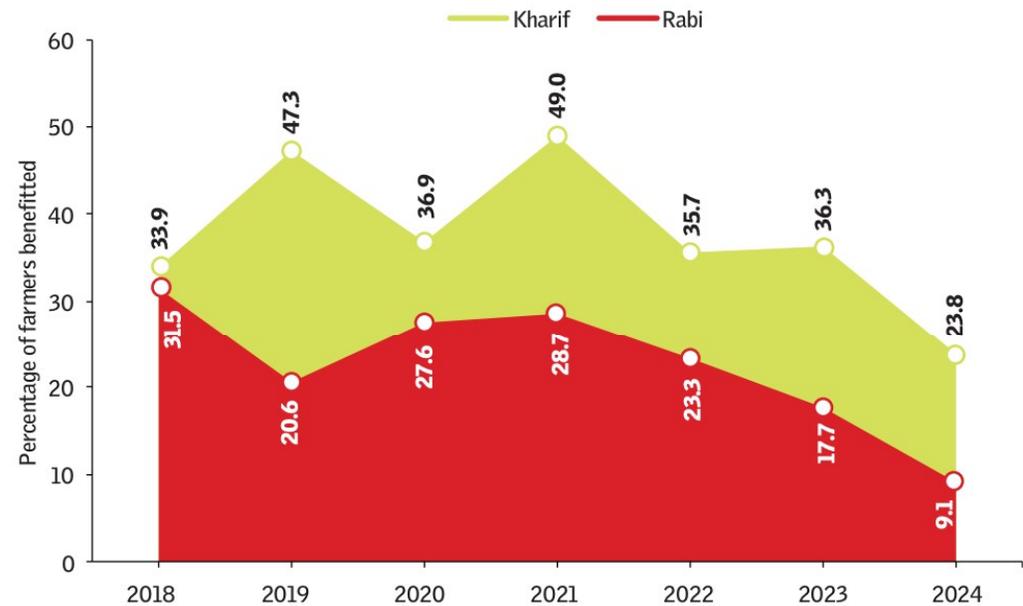
Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

* $[(\text{Total claims paid}/\text{total premium collected}) \times 100]$



PMFBY (farmers benefitted out of total farmers enrolled)

- Kharif: Decline **33.9 per cent** in 2018 to **23.8 per cent** in 2024
- Rabi: Decline **31.5 per cent** in 2018 to **9.1 per cent** in 2024
- Farmers in several states have expressed dissatisfaction over unpaid or delayed claims during the same period



Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare



PMFBY in states

- Most states have been consistent
- Arunachal Pradesh, Mizoram, Nagaland did not participate
- States with own schemes/mechanisms: Punjab (financial assistance to farmers in the event of natural calamities), Bihar (Bihar Rajya Fasal Sahayata Yojana), West Bengal (Bangla Shasya Bima)

Table 2: State/UTs implementing PMFBY scheme: 2018–2024

States/UTs	2018	2019	2020	2021	2022	2023	2024
Andaman & Nicobar Islands							
Andhra Pradesh							
Arunachal Pradesh							
Assam							
Bihar							
Chhattisgarh							
Goa							
Gujarat							
Haryana							
Himachal Pradesh							
Jharkhand							
Jammu & Kashmir							
Karnataka							
Kerala							
Madhya Pradesh							
Maharashtra							
Manipur							
Meghalaya							
Mizoram							
Nagaland							
Odisha							
Punjab							
Puducherry							
Rajasthan							
Sikkim							
Tamil Nadu							
Telangana							
Tripura							
Uttar Pradesh							
Uttarakhand							
West Bengal							

Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare



State-wise farmer enrollments (2024)

- In both Kharif and Rabi (2024) – top 10 states add up to more than **95 per cent** farmer enrollments
- In Rabi, Tamil Nadu replaced Jharkhand in top 10 states

State/UT	Percentage of farmer enrollments (Kharif 2024)	Actual farmer enrollments* (in lakh) (Kharif 2024)	State/UT	Percentage of farmer enrollment (Rabi 2024)	Actual farmer enrollments* (in lakh) (Rabi 2024)
Maharashtra	30.1	75.40	Maharashtra	24.8	28.46
Jharkhand	12.2	30.54	Rajasthan	19.9	22.89
Rajasthan	12.1	30.28	Madhya Pradesh	17.8	20.46
Madhya Pradesh	9.6	24.06	Uttar Pradesh	13.8	15.87
Andhra Pradesh	9.6	24.05	Tamil Nadu	8.5	9.72
Odisha	9.0	22.42	Haryana	3.1	3.55
Uttar Pradesh	6.1	15.32	Andhra Pradesh	2.5	2.91
Chhattisgarh	5.7	14.27	Assam	2.4	2.73
Assam	2.5	6.25	Chhattisgarh	2.4	2.78
Haryana	1.5	3.74	Odisha	1.6	1.81
Jammu & Kashmir	0.6	1.41	Jharkhand	1.3	1.45
Himachal Pradesh	0.4	0.96	Himachal Pradesh	0.9	1.03
Tamil Nadu	0.3	0.74	Jammu & Kashmir	0.5	0.59
Meghalaya	0.2	0.43	Uttarakhand	0.2	0.27
Uttarakhand	0.1	0.34	Tripura	0.1	0.12
Tripura	<0.1	<0.1	Puducherry	0.1	0.11
Manipur	<0.1	<0.1	Meghalaya	<0.1	<0.1
Puducherry	<0.1	<0.1	Sikkim	<0.1	<0.1
Sikkim	<0.1	<0.1	Andaman & Nicobar Islands	<0.1	<0.1
Andaman & Nicobar Islands	<0.1	<0.1	Goa	<0.1	<0.1
Goa	<0.1	<0.1			

Note: *Values rounded off till two decimal places
Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

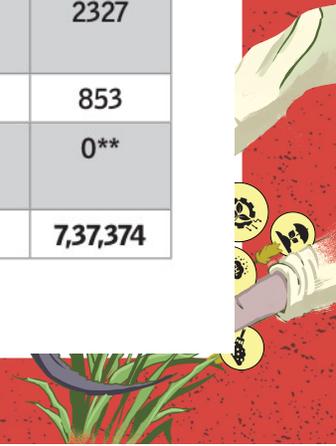


State-wise premiums and claims (Kharif 2024)

- **39.6 per cent** of the premiums paid as claims
- Tamil Nadu: Only state which paid out more claims than the amount of money collected in premiums
- Rest pay out lesser in claims than the premium collected

State/UT	Proportion of total premium (in per cent)	Gross premium (in Rs lakh)*	State/UT	Proportion of total claims (in per cent)	Total claims paid (in Rs lakh)
Maharashtra	40.9	7,63,461	Maharashtra	59.1	4,37,164
Rajasthan	14.9	2,78,102	Madhya Pradesh	15.0	1,11,081
Madhya Pradesh	9.6	1,78,768	Rajasthan	12.7	94,093
Jharkhand	8.6	1,59,993	Haryana	3.9	28,948
Odisha	8.1	1,51,663	Uttar Pradesh	3.7	27,230
Chhattisgarh	7.5	1,39,327	Chhattisgarh	1.6	11,620
Haryana	4.8	89,329	Odisha	1.9	14,280
Uttar Pradesh	2.3	43,039	Tamil Nadu	1.0	7,109
Andhra Pradesh	1.9	35,595	Assam	0.4	2,669
Assam	0.9	16,662	Jammu & Kashmir	0.3	2327
Tamil Nadu	0.1	2,579	Andhra Pradesh	0.1	853
Jammu & Kashmir	0.3	5,486	Jharkhand	0.0	0**
Total	99.9	18,64,004		99.7	7,37,374

Note: *Values rounded off to the nearest whole number
 **The value zero may indicate claims paid out not recorded on dashboard
 Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare



State-wise premiums and claims (Rabi 2024)

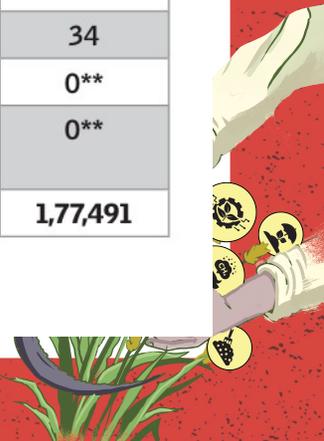
- Total claim amount paid: **26.9 per cent** of the gross premium collected

State/UT	Proportion of total premium (in per cent)	Gross premium (in Rs lakh)*	State/UT	Proportion of total claims (in per cent)	Total claims paid (in Rs lakh)
Rajasthan	29.8	1,97,112	Rajasthan	34.2	60,795
Maharashtra	24.7	1,63,646	Tamil Nadu	29.7	52,844
Madhya Pradesh	14.3	94,793	Madhya Pradesh	9.2	16,414
Tamil Nadu	10.9	72,575	Chhattisgarh	7.8	13,931
Uttar Pradesh	5.8	38,643	Maharashtra	7.7	13,628
Chhattisgarh	4.3	28,466	Uttar Pradesh	7.5	13,409
Andhra Pradesh	2.9	19,371	Haryana	2.0	3,574
Haryana	2.5	16,688	Assam	1.5	2,615
Assam	1.7	11,185	Jammu & Kashmir	0.1	247
Jharkhand	1.1	7,279	Odisha	0.02	34
Odisha	1.1	7,233	Andhra Pradesh	0.00	0**
Jammu & Kashmir	0.2	1,056	Jharkhand	0.00	0**
Total	99.3	6,58,047		99.72	1,77,491

Note: *Values rounded off to the nearest whole number

**The value zero may indicate claims paid out not recorded on dashboard

Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare

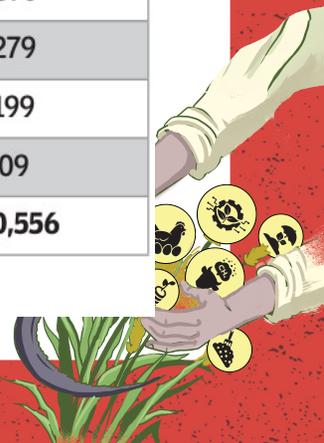


State-wise surpluses (Kharif and Rabi 2024)

- Kharif: **Highest surplus** in **Maharashtra**; followed by Rajasthan, Jharkhand, Chhattisgarh and Odisha
- Rabi: Maharashtra and Rajasthan had more than Rs 1,00,000 lakh surpluses

State/UT	Surplus in kharif season (in Rs lakh)	State/UT	Surplus in rabi season (in Rs lakh)
Maharashtra	3,26,297	Maharashtra	1,50,018
Rajasthan	1,84,009	Rajasthan	1,36,317
Jharkhand	1,59,993	Madhya Pradesh	78,379
Odisha	1,37,383	Uttar Pradesh	25,234
Chhattisgarh	1,27,707	Tamil Nadu	19,731
Madhya Pradesh	67,687	Andhra Pradesh	19,371
Haryana	60,381	Chhattisgarh	14,535
Andhra Pradesh	34,742	Haryana	13,114
Uttar Pradesh	15,809	Assam	8,570
Assam	13,993	Jharkhand	7,279
Jammu & Kashmir	3,159	Odisha	7,199
Tamil Nadu	-4,530	Jammu & Kashmir	809
Total	11,26,630	Total	4,80,556

Source: PMFBY dashboard, Ministry of Agriculture and Farmers Welfare



Company-wise premiums and claims (Kharif and Rabi 2024)

- 2023–2024: 15 insurance companies implemented PMFBY, (4 public sector and 11 private)
- Almost all potentially made huge profits
- except Oriental Insurance Company and TATA AIG General Insurance Company

Insurance company	Share in total gross premium for 2023–2024 (in per cent)	Gross premium collected (in Rs crore)*	Share in total claims paid for 2023–2024 (in per cent)	Total claims paid (in Rs crore)	Total surplus (in Rs crore)*
Agriculture Insurance Company of India Ltd	32.2	9,489	33.72	5,564.75	3,924
Reliance General Insurance Company Ltd	12.8	3,784	7.69	1,269.11	2,515
HDFC-ERGO General Insurance Company Ltd	11.1	3,277	3.38	557.29	2,719
SBI General Insurance Company Ltd	9.0	2,641	3.97	655.44	1,986
Oriental Insurance Company Ltd	6.5	1,912	20.35	3,359.44	-1447
Bajaj Allianz General Insurance Company Ltd	5.5	1,609	4.90	809.14	799
Universal Sompo General Insurance Company Ltd	4.6	1,368	4.77	787.96	580
IFFCO-Tokio General Insurance Company Ltd	4.5	1,323	5.33	880.30	443
ICICI Lombard General Insurance Co. Ltd	4.1	1,198	4.66	769.64	428
Kshema General Insurance Limited	3.0	894	2.61	430.96	462
United India Insurance Company Ltd	2.8	838	2.89	477.42	361
Cholamandalam MS General Insurance Company Ltd	1.8	526	2.46	406.08	120
Future Generali India Insurance Company Ltd	1.3	373	1.01	167.01	206
Tata AIG General Insurance Company Ltd	0.9	272	2.24	369.99	-97
National Insurance Company Ltd	0.0003	0.08	-	-	0.08
Total	100	29,506	100	16,504	13,001

Note: *Values rounded off to the nearest whole number

Source: Lok Sabha unstarred question no. 4890, 1st April 2025, Collection of Premium and Payment of Claims Under PMFBY, Ministry of Agriculture and Farmers Welfare



Company-wise claim ratio (Kharif and Rabi 2024)

- Claim ratio ranged between - **17 per cent** and **77.2 per cent**
- Claim ratios have by and large decreased from 2019–2020 to 2023–2024

Insurance company	2019–2020	2020–2021	2021–2022	2022–2023	2023–2024
Agriculture Insurance Company of India Ltd	101.7	81.9	67.4	68.8	58.6
Bajaj Allianz General Insurance Company Ltd	73.7	44.2	83.0	72.7	50.3
Bharti AXA General Insurance Company Ltd	15.1	23.0	62.0	-	-
Cholamandalam MS General Insurance Company Ltd	-	-	-	-	77.2
Future Generali India Insurance Company Ltd	43.7	32.0	78.0	40.3	44.7
HDFC-ERGO General Insurance Company Ltd	54.4	45.7	63.0	33.6	17.0
ICICI Lombard General Insurance Co. Ltd	-	-	-	66.0	64.2
IFFCO-Tokio General Insurance Company Ltd	85.8	71.5	63.0	15.7	66.5
Kshema General Insurance Ltd	-	-	-	-	48.2
National Insurance Company Ltd	101.2	300.0	118.1	42.6	0.0
New India Assurance Company Ltd	275.3	-	-	-	-
Oriental Insurance Company Ltd	128.3	125.1	-	-	175.7
Reliance General Insurance Company Ltd	54.6	30.5	88.4	61.2	33.5
Royal Sundaram General Insurance Company Ltd	27.0	-	-	-	-
SBI General Insurance Company Ltd	99.2	91.6	62.0	55.4	24.8
Tata AIG General Insurance Company Ltd	-	-	-	-	135.9
United India Insurance Company Ltd	91.0	-	-	77.3	57.0
Universal Sompo General Insurance Company Ltd	28.9	44.9	58.5	44.3	57.6

Note: *Values rounded off to one decimal place

Source: Lok Sabha unstarred question no. 4890, 1st April 2025, Collection of Premium and Payment of Claims Under PMFBY, Ministry of Agriculture and Farmers Welfare



Challenges from the ground

Farmers

Biggest is related to claims settlements:

- Delay, inadequacy, inaccuracy (Manual CCEs - slow, lack transparency, and prone to disputes, leading to fragmented, paper-based data that causes delays and inaccuracies in claim processing)

Other challenges:

- High premium burden in select cases
- Neglect of micro-climatic variability
- Barriers in technological access and documentation challenge
- Opaque grievance and feedback mechanisms, and corruption



Options that can potentially address the concern of CCE...

YES-TECH (Yield estimation system based on technology)

- Improved standardisation
- Reduced discretionary manipulation
- Enhanced the timeliness of claim settlements
- Started in 2023 in few states based on YESTECH-MANUAL 2023
- Madhya Pradesh is leading – replacing manual CCEs

Parametric insurance

- Based on a particular pre-select value of a parameter such as temperature, humidity, rainfall etc
- Payout triggers when threshold value is breached (irrespective of actual losses)
- There are examples in agriculture (RWBIS) and in Livestock sectors as well as beyond agriculture sectors (such as disaster relief)



How is a Crop Cutting Experiment (CCE) done ?

- Basis of yield loss assessment for area-approach based crop insurance
- Field-based studies carried out to estimate crop yield losses in a notified unit, usually a Gram Panchayat
- Fields are chosen at random
- a small plot is marked, the crop is harvested and weighed, and the results are recorded
- Data from multiple plots is combined and averaged out
- This figure is then compared with the threshold yield (based on historical data)
- If the yield falls below the threshold value, farmers in the unit receive insurance payouts
- Across India, more than a million CCEs are done annually



Approaches of risk-sharing in PMFBY

The scheme generally operates on a risk transfer approach, with the risk transferred entirely — or to varying extents — to insurance companies

Initially, the scheme worked on a Profit and Loss sharing model (entire risk — and the profit — of crop insurance used to lie with the insurance companies)

Then it moved to a Cup and Cap model

Cup & Cap Model (60:130)	Cup & Cap Model (80:110)
Insurers carry the liability so long as claims fall within 60 to 130 per cent of the premium	Insurers are liable only if claims remain between 80 and 110 per cent of the premium collected
Followed in: Andhra Pradesh Rajasthan Tamil Nadu Puducherry	Followed in: Karnataka Madhya Pradesh Maharashtra Uttar Pradesh



What is Restructured Weather Based Crop Insurance Scheme (RWBCIS) ?

- Launched in 2016, works on the principle of weather-based indexing
- The scheme uses parameters such as rainfall, temperature, wind and humidity
- As of 2024, the scheme was adopted in eight states -
- Andhra Pradesh, Maharashtra, Kerala, Uttarakhand, Himachal Pradesh, Rajasthan, Chhattisgarh and Uttar Pradesh
- In 2023, the scheme was backed by the Weather Information Network Data System (WINDS), designed to strengthen existing weather data infrastructure in the country and provide high quality weather datasets from a single digital platform

- **Livestock insurance in India - less uniform than crop insurance**
- **The National Livestock Mission provides a premium subsidy for insuring cattle, buffalo, goats, sheep, pigs and poultry, along with fodder and sectoral support, capped at differing premium subsidies and number of units**

