

## Evolution of Different Crop Insurance Schemes in India: An Analytical Study

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### Abstract

Crop insurance reduces the level of risk faced by the farmers, and though not all it can solve some of the problems faced by the farmers. The present paper has simplified the concept of crop insurance for the readers and also analyzed various schemes of crop insurance which have been introduced in our country over the years. The study found that the Central Government and Agricultural Insurance Company of India Limited (AICIL) are taking ample measures to make crop insurance popular among the farmers as even after so many years of existence in the country many farmers still do not understand the importance of the crop insurance.

**Key-words:** Farmers, Crop insurance, GIC, AICIL, various schemes

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### 1. Introduction

India has always been blessed with fertile lands and has a long history of agriculture, which dates back to Indus Valley Civilization era and even before that in some parts of Southern India. The tradition of being engaged with agriculture and related activities continues even today, as in our country agriculture is not seen as an occupation rather a way of life. People residing in rural parts of India are still heavily dependent on agriculture. Agriculture and related activities are the main source of livelihood for around 58% of population<sup>1</sup> of India and its contribution to Gross Domestic Product (GDP) was nearly 17% (in 2014)<sup>2</sup>.

Agriculture is a very risky profession given that it is affected by uneven distribution of rainfall, pest attacks, hail, other natural calamities like flood, drought, etc. "In cases of severe declines in farm output, and hence farmers' incomes, governments have volunteered to help alleviate their negative impact. For example, ever since 1843 in India, there has been evidence of government involvement

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<sup>1</sup>[www.ibef.org](http://www.ibef.org), date of retrieval 27.5.16

<sup>2</sup><http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php> date of retrieval 27.5.16

in the free distribution of grain, free kitchens, remission of revenue and other taxes, payment of advances, construction of public works, and irrigation projects.” (Rustagi, 1988)

According to a study conducted in India in 2002 majority of farmer suicides are caused due to failure of crops (16.84%) as compared to debt burden (2.65%), property disputes (2.65%), family problems with spouse or others (13.27%), losses in non-farm activities (1.77%), other reasons (15.04%), etc. <sup>3</sup> The present article explains how crop insurance insulates the farmers against crop failure. Farmers engaged in agriculture and related activities have to face various other problems like; instability and fluctuation, cropping pattern, inequality in land distribution, inadequate irrigation facilities, agricultural indebtedness, poor farming techniques and agricultural practices, etc. Though not all, but crop insurance can be solution for many of the above problems.

## **2. Literature Review**

Prabhu & Ramackandran (1986) highlighted some features of Comprehensive Crop Insurance Scheme and are of the view that premium rates for various crops and various regions are to be fixed correctly and as opposed to the then existing system where both large and small and marginal farmers were being subsidized, only small and marginal farmers were to be given the advantage of subsidized premium.

Sinha (2004) discussed the Farm Income Insurance Scheme and suggested that crop insurance can be improved by increasing the accuracy and timeliness of crop estimation methods, through the use of new technologies.

Gangopadhyay (2004) opined that Non-Government Organizations (NGOs) are best suited for providing crop insurance, though the question of credibility may be an issue in making the NGOs eligible for the business.

Höppe (2007) expressed that global warming is increasing the risk of weather-related catastrophes like windstorms, floods, droughts, etc. If no measures are adapted to combat the changing weather patterns then agriculture will surely be affected. Proper insurance systems can help farmers to cope with the increasing volatility of their losses.

Mukhala & Chavula (2007) pointed out that weather based index insurance is slowly gaining recognition as one of the methodologies that could be used to sustain livelihoods and reduce poverty as part of the Millennium Development Goals (MDGs). A few countries in Africa like Malawi and Ethiopia are piloting the methodology.

Velazco (2007) observed that in the last few years, governments of the countries in South America are giving an increasing recognition to the social and economic benefits related to activities of prevention and reduction of climate risks.

Kumar (2013) suggested that service providers should come up with product innovations and appropriate distribution channel to make the reach of crop insurance more effective.

## **3. Objectives of the Study**

The objectives of the present study are as follows:

- (a) To explain the concept of crop insurance.
- (b) To discuss the various crop insurance schemes prevalent in India over the years.

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<sup>3</sup> *Reasons for farmer suicides under Farmer's suicides in India, Wikipedia*

#### 4. Database and Methodology

The data have been collected from various secondary sources like books, journals, websites, and reports by government organizations, newspaper articles, etc. The present study is divided into three parts. In the first part the authors have explained the concept of crop insurance. In the second part the authors have given a detailed account of the evolution of the various schemes of crop insurance in India over the years. Finally, in the third part the authors have drawn conclusions based on the findings of the paper.

#### 5. Concept of Crop Insurance

*Crop insurance* has been defined by *Agriculture Insurance Company of India Limited (AICIL or AIC)* as 'a means of protecting the agriculturist against financial losses due to uncertainties that may arise from crop failure/losses arising from named or all unforeseen perils beyond their control'.

A farmer in order to meet his farming expenses took loan from different financial institutions. But, earlier since there was no crop insurance, in case his crops were damaged in natural calamity he did not receive any indemnity and thus was caught in the debt trap. Hence when a farmer takes crop insurance he can protect himself from the perils which are beyond his control, as he can get the same income irrespective of whether the crop is good or bad. So, it can be said that if a farmer buys crop insurance scheme he can insulate himself completely from all the risks and gets the same return regardless of whether the agricultural production is good or bad.

The generally agreed principles of crop insurance are: (i) through payment of a risk premium, individual farmer transfers the uncertainty faced by him to the insurer, (ii) a large number of participating farmers covering a large area over a period of time enable the horizontal spread of risks over a wider area, and vertical spread over many years, (iii) the group risk assumed by the insurer is reflected from the risk premium, and (iv) an indemnity is to be paid to the individual farmer when a loss is incurred due to causes beyond his control, as long as he maintains the insurance contract valid by paying the premium. (Vyas and Singh, 2006)

The three pillars which stress the need of crop insurance are *stabilization of income, efficiency and rural credit*. Since agriculture is mostly dependent on weather, so a year of bad weather condition implies less income for the farmers and he is drawn into traps of debt which might spill over into subsequent years. Crop insurance provides the required stability in the farmers' income. Some crops may be very risky yet very profitable, but the farmer may shy away from these due to his risk-averse nature and limited resources. Now, since crop insurance provides adequate resource so the farmer can diversify into risky crops and thus increasing the efficiency. The farmers do not have much choice but to borrow money from moneylenders at high rates of interest as they have little access to institutional credit. The banks are reluctant to extend credit as the possibility of default is high and the recovery rates are poor. Since the insurer pays the amount of indemnity directly into the lending bank crop insurance actually partially acts as collateral. 'Apart from reducing the risk of the lender and protecting the health of the institution, the crop insurance helps recovery of the loans and maintains the credit eligibility of the borrower regardless of the short term crop failure.' (Ghosh and Yadav, 2008)

Many academicians might argue that, there are other methods available for such stabilization. Where there is absence of formal risk sharing mechanisms the farmers have to rely on traditional modes and methods to deal with production risks in agriculture. Several risk management techniques used

by the farmers are self-insurance<sup>4</sup>, insurance through credit, insurance through labour market<sup>5</sup>, crop diversification<sup>6</sup>, intercropping<sup>7</sup>, etc. The question, thus, arises what might be the possible cause of demanding crop insurance. Two circumstances under which crop insurance might be demanded are (i) when the existing risk management techniques are not enough to protect the stability of household consumption and (ii) when the traditional measures cannot be relied upon as it might lead to substantial losses.

## 6. Evolution of Various Schemes of Crop Insurance in India

The concept of crop insurance is not new in India. As the authors will be discussing in the following paragraphs the first crop insurance scheme began in 1972-73 and thereafter many schemes have been introduced in our country.

*6.1 First Crop Insurance Scheme:* In 1972-73 the first ever crop insurance scheme was put into effect by general insurance department of Life Insurance Corporation of India (LICI) in the state of Gujarat for H-4 cotton. General Insurance Corporation of India (GICI) later, after its nationalization in the same year, implemented the scheme in Maharashtra, Tamil Nadu, West Bengal, Andhra Pradesh and Karnataka along with Gujarat. The scheme included groundnut, wheat and potato and it was based on 'individual approach'<sup>8</sup>. The scheme continued till 1978-79 and covered only 3110 farmers for a premium of Rs. 4.54 lakhs against claim of Rs. 37.88 lakhs. The scheme did not succeed as it was soon realized that a scheme based on individual approach was not viable in our country. The scheme was not at all profitable as there was a huge disparity between the claim amount and the premiums collected. Thus, it paved way for the Pilot Crop Insurance Scheme.

*6.2 Pilot Crop Insurance Scheme (PCIS):* GIC entrusted Prof. V. M. Dandekar (often referred to as Father of Crop Insurance in India) for suggesting a scheme of crop insurance. Based on his suggestions, with some modifications, GIC introduced Pilot Crop Insurance Scheme (PCIS) from 1979. The scheme was initially introduced in 26 areas of Gujarat, 23 areas of West Bengal and 17 areas of Tamil Nadu and it was later on extended to more areas of nine states. The scheme covered cereals, millets, oilseeds, cotton, potato, gram and barley and it was based on 'area approach'<sup>9</sup>. The risk was shared by GIC and the respective state governments in the ratio of 2:1. The maximum sum insured was 100 per cent of the crop loan which was later on increased to 150 per cent. The insurance premium ranged from 5 to 10 per cent of the sum insured. The scheme ran till 1984-85 and was implemented in 12 states covering 6.23 lakh farmers, total premiums collected were Rs. 195.01 lakhs against total claims of Rs. 155.68 lakhs. In Table 1 given below the performance of PCIS during the period in which it was in force is shown cumulatively:

**Table 1: Performance of Pilot Crop Insurance Scheme during 1979-80 to 1984-85**

Particulars	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	Total
Number of states	3	3	8	9	11	12	-
Area covered	13181	18703	24467	70729	87347	477333	691760

<sup>4</sup>Farmers accumulate stocks in periods of relative affluence and deplete these reserves to finance consumption expenditure during tough times.

<sup>5</sup>Rural households can protect themselves using both ex-post strategies like shifting from own farm cultivation to the labour market or by increasing hours of work as well as ex-ante measures like entering permanent labour contracts to avoid seasonal fluctuations in wages and employment opportunities.

<sup>6</sup>Spreading risks across multiple crops, the idea is that even if a particular crop does not do well the loss will be compensated by gains in another crop.

<sup>7</sup>A multiple cropping practice involving growing two or more crops in proximity, the main goal being to produce a greater yield on a given piece of land by making use of resources that would otherwise not be utilized by a single crop.

<sup>8</sup>The assessment of the indemnity is done separately for each individual and is based on the actual crop-output of the concerned farmer in a given year compared to his normal output. (Dandekar, 1976)

<sup>9</sup>The assessment of indemnity may be done together for all insured farmers in a given area. (Dandekar, 1976)

(ha)							
Farmers covered	16265	23442	24625	50855	60349	447086	622622
Sum Insured (Rs. Lakhs)	130.30	165.77	202.82	468.26	653.64	4446.49	6067.28
Premium collected (Rs. Lakhs)	5.53	6.93	7.55	15.65	21.15	138.20	195.01
Claims paid (Rs. Lakhs)	5.29	3.27	9.64	37.32	8.37	91.80	155.68
Claim's ratio (%)	95.71	47.10	127.67	238.46	39.56	66.42	79.83

Source: Raju & Chand, 2008

The overall claim to premium ratio was 79.83 per cent indicating that about 79.83 per cent of the total premium collections were used for the payment of claims or indemnities. The average premium collected for crop insurance declined from Rs.41.95 per hectare in 1979-80 to Rs.22.13 per hectare during 1982-83 and increased thereafter to Rs.28.95 per hectare in 1984-85. Incidentally, the average premium collected per hectare was the lowest and the average indemnity paid per insured crop hectare was the highest (Rs.52.76 per insured hectare) during 1982-83. (Raju and Chand, 2008) Even though the scheme was profitable (as the premiums collected exceeds claims paid), the scheme was not a success due to low awareness level among the farmers. Besides, the scheme covered only limited crops like millets, oilseeds, cereals, potato, cotton, barley and gram. The farmers who grew crops other than the ones mentioned above could not participate in the scheme.

**6.3 Comprehensive Crop Insurance Scheme (CCIS):** Due to the failure of PCIS, Government of India with active participation from the state governments introduced Comprehensive Crop Insurance Scheme (CCIS) from 1<sup>st</sup> April, 1985. The scheme was based on homogeneous area approach and it covered farmers availing crop loans from financial institutions for growing food crops and oilseeds on compulsory basis. 15 states and 2 Union Territories participated in the scheme till it was discontinued in 1999. The participating states were, Andhra Pradesh, Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Tamil Nadu, Tripura and West Bengal, and among the UTs Andaman & Nicobar Islands and Pondicherry had implemented the scheme. Premium and claims were shared by Central and State Governments in 2:1 ratio and the premium rates were 2% for cereals and millets and 1% for pulses and oilseeds. The maximum sum insured was 100% of the crop loan, which was later increased to 150%. A year-wise summary of the performance can be seen in Table 2 given below:

**Table 2: Table showing Results of CCIS for all INDIA from 1985 through 1999**

Year	Farmers (in millions)	Area (ha in millions)	Sum Insured (Rs. in '000 millions)	Premium Collected (Rs. in millions)	Total Claim (Rs. in millions)	Claim/ Premium Ratio	Claims Paid (Rs. in millions)
1985	3.85	7.69	7.811	138.97	872.63	6.28	872.63
1986	5.08	9.84	10.986	195.05	1739.58	8.92	1739.58
1987	6.76	11.65	16.161	279.47	2894.73	10.36	2894.73
1988	3.85	6.25	7.148	120.00	330.57	2.75	330.57
1989	4.89	7.60	10.255	172.50	372.86	42.16	372.86
1990	2.74	4.48	7.114	111.62	855.97	7.67	855.97
1991	4.56	7.98	11.383	180.88	2013.04	11.13	2013.04
1992	5.02	8.43	14.206	229.17	509.55	2.22	509.55
1993	5.05	8.08	15.872	255.48	1886.11	7.38	1885.30
1994	5.19	8.24	18.769	297.09	580.23	1.95	579.34

1995	5.66	9.07	21.638	343.30	1489.65	4.34	1486.74
1996	5.85	9.46	24.666	393.52	1722.14	4.38	1717.31
1997	6.00	9.69	26.298	414.76	1870.24	4.51	1713.04
1998	6.20	10.13	29.110	463.53	1284.39	2.77	685.57
1999	5.58	8.97	28.331	440.25	4616.87	10.49	4613.89
<b>Total</b>	<b>76.27</b>	<b>127.57</b>	<b>249.749</b>	<b>4035.59</b>	<b>23038.54</b>	<b>5.71</b>	<b>22270.11</b>

*Source: Retrieved from www.shodhganga.inflibnet.ac.in/bitstream/10603/9367/9/09\_chapter%204.pdf (Date of retrieval:12.5.15)*

The scheme covered 763 lakhs farmers and the area of coverage was 12.76 crores hectares till it was discontinued in 1999. The total sum insured was Rs. 24, 974 crores. The total amount of premium collected was Rs. 403.56 crores against claim payment of Rs. 2303.854 crores. 59.78 lakhs farmers received claims, but the benefit was highly skewed towards Gujarat which received majority of the claim amount paid in the scheme. The reason of such uneven distribution can be severe drought experienced by Saurashtra in 1985, 1986 and 1987. Among the crops covered in the scheme, groundnut had the highest claim-premium ratio i.e. 16.02. The reason for which was huge crop failures in the years 1990, 1991 and 1993, major loss was suffered by groundnut in Kharif season. Hence, it resulted in high indemnity payments.

The scheme had few deficiencies like; it covered loanee farmers only, the scheme was financially non-viable, and it covered limited number of crops thus excluding important horticultural and commercial crops. Since the benefit of the scheme was skewed towards Gujarat the other states which participated in the scheme did not receive much benefit.

*6.4 Experimental Crop Insurance Scheme (ECIS):* Experimental Crop Insurance Scheme (ECIS) was implemented during the Rabi season of 1997-98. The scheme was somewhat similar to CCIS except that it was meant only for small and marginal farmers with 100% subsidy in premium. It was implemented in 14 districts of 5 states. The Central Government and State Government shared the premium subsidy and claims in the ratio of 4:1. The results of ECIS are shown in the Table 3 given below:

**Table 3: Results of ECIS during Rabi 1997-98**

Sr. No.	State	Farmers Covered	(Rs. In Crores)		
			Sum Insured	Premium	Claims
1	Andhra Pradesh	118770	57.65	0.86	5.55
2	Assam	3664	2.42	0.05	0.43
3	Karnataka	66114	23.06	0.35	8.00
4	Orissa	26713	17.56	0.28	0.13
5	Tamil Nadu	239294	67.43	1.30	23.69
	Total	454555	168.12	2.84	37.80

*Source: Retrieved from www.shodhganga.inflibnet.ac.in/bitstream/10603/9367/9/09\_chapter%204.pdf (Date of retrieval 12.5.15)*

During this one season the scheme covered 4, 54,555 farmers for a sum insured of Rs. 168.12 crores at a premium of Rs. 2.84 crores against claim payment of Rs. 37.80 crores. The scheme was discontinued after Rabi season of 1997-98 due to administrative and financial difficulties. There was huge disparity between the claims paid and the premiums collected.

*6.5 National Agricultural Insurance Scheme (NAIS) or Rashtriya Krishi Bima Yojana (RKBY):* GIC launched National Agricultural Insurance Scheme (NAIS) or Rashtriya Krishi Bima Yojana

(RKBY) from Rabi 1999-2000, which was taken over by Agricultural Insurance Company of India Limited (AICIL) after it commenced business from 1<sup>st</sup> April 2003. The objectives of the scheme are as under:<sup>10</sup>

- To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases.
- To encourage the farmers to adopt progressive farming practices, high value inputs and higher technology in agriculture.
- To help stabilize farm incomes, particularly in disaster years.

The scheme was compulsory for the loanee farmers; however it was voluntary for the non-loanee farmers. The scheme was in operation from 1999-2000 till 2015-16 and during this period 26 states and 2 Union Territories had participated. “The scheme covered all food grains, oilseeds and annual horticultural/commercial crops for which past data are available for an adequate number of years. Among the annual commercial and horticultural crops, sugarcane, potato, cotton, ginger, onion, turmeric, chillies, coriander, cumin, jute, tapioca and pineapple are covered.” (Raju & Chand, 2008) The Government of India and the State/UT Government equally shared the 50% subsidy in premium in respect of small farmers<sup>11</sup> and marginal farmers<sup>12</sup>. If the Actual Yield (AY) per hectare of the insured crop for a particular defined area in an insured season fell short of the specified Threshold Yield (TY), all the insured farmers growing that crop in the defined area were deemed to have suffered shortfall in their yield [the calculation of AY will be based on required number of Crop Cutting Experiments]. The indemnity was to be calculated using the following formula:

$$\frac{\text{Shortfall in Yield}}{\text{Threshold Yield}} \times \text{Sum Insured for the farmer}$$

(Shortfall in Yield = Threshold yield – Actual yield for the defined area)

Table 4 below shows the performance of NAIS throughout its period of implementation:

**Table 4: NAIS- Business Statistics from Rabi 1999-2000 to Rabi 2015-16**

S.L No.	State/ UT	No. of Farmers Insured (000’)	Area Insured (000’Ha)	Amount in Rs. Crore				No. of Farmers benefitted (000’)
				Sum Insured	Premium	Subsidy	Claims	
1	Andhra Pradesh	30649	46431.15	65675.95	1885.66	166.14	5063.42	6996
2	Assam	423	309.43	908.22	25.31	2.62	16.93	66
3	Bihar	10708	11710.27	28298.79	629.05	51.33	4064.23	4439
4	Chhattisgarh	11803	23539.52	15049.99	381.76	28.62	1098.31	2390
5	Goa	8	13.44	3.18	0.06	0.01	0.02	1
6	Gujarat	15496	35194.68	49318.71	2026.73	227.78	8803.90	5501
7	Haryana	636	769.04	834.96	24.14	0.68	43.36	129
8	Himachal Pradesh	372	292.22	785.33	16.57	7.57	22.52	115
9	Jharkhand	6931	4247.33	4596.85	111.68	7.07	750.39	2583
10	Karnataka	14360	22589.87	20139.80	579.13	36.74	2828.11	6099
11	Kerala	461	414.76	871.66	18.82	2.52	30.63	85

<sup>10</sup> [www.aicofindia.com](http://www.aicofindia.com)

<sup>11</sup> Small Farmer: A cultivator with a land holding of 2 hectares (5 acres) or less, as defined in the land ceiling legislation of the concerned State/UT.

<sup>12</sup> Marginal Farmer: A cultivator with a land holding of 1 hectare or less (2.5 acres).

12	Madhya Pradesh	43801	103200.64	100114.69	2679.18	71.96	10270.76	9989
13	Maharashtra	51772	40870.93	39722.97	1694.73	420.18	9834.71	24810
14	Manipur	36	57.47	148.12	3.69	0.20	12.26	30
15	Meghalaya	36	36.34	74.73	3.20	0.43	0.68	4
16	Mizoram	0	0.13	0.23	0.01	0.00	0.11	0
17	Orissa	19976	19460.41	36237.95	907.12	89.89	3877.30	4409
18	Rajasthan	15059	31379.98	16203.09	457.54	7.38	2621.66	5201
19	Sikkim	2	1.45	3.52	0.08	0.01	0.01	0
20	Tamil Nadu	8309	10560.22	25845.58	672.89	333.68	3506.75	3260
21	Telangana	1335	1580.37	6791.60	194.09	15.89	299.00	452
22	Tripura	21	14.09	33.02	0.90	0.10	0.59	3
23	Uttar Pradesh	23426	31070.39	33537.82	684.82	52.19	1169.38	4518
24	Uttarakhand	399	372.51	870.98	19.78	1.79	41.88	119
25	West Bengal	15115	7428.04	21097.29	931.52	591.11	1725.68	3586
26	A & N Islands	5	7.15	23.00	0.64	0.60	1.16	1
27	Puducherry	43	59.99	116.70	2.28	0.91	3.17	7
28	Jammu and Kashmir	49	68.99	109.02	2.14	0.16	1.26	4
<b>Total</b>		<b>271231</b>	<b>391680.83</b>	<b>467413.75</b>	<b>13953.50</b>	<b>2117.55</b>	<b>56088.20</b>	<b>84797</b>

Source: Retrieved from [www.aicofindia.com](http://www.aicofindia.com), retrieved on 12.02.18

The scheme covered 27.12 crores farmers and the area under coverage was 39.16 crores hectares. Rs. 13953.50 crores premium were collected against claim of Rs. 56088.20 crores. 8.47 crores farmers were benefitted from the scheme.

The limitations of the scheme may be pointed out as under, which led to the discontinuation of the scheme:

- The scheme was dependent on government subsidization so it was not financially viable.
- The scheme protected farmers only against yield fluctuations; price fluctuation was not under the purview of the scheme.
- Delay in settlement of claims.

6.6 Pradhan Mantri Fasal Bima Yojana (PMFBY): Pradhan Mantri Fasal Bima Yojana (PMFBY) was introduced from Kharif 2016. The objectives of the new scheme are as follows:<sup>13</sup>

- Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events.
- Stabilizing the income of farmers to ensure their continuance in farming.
- Encouraging farmers to adopt innovative and modern agricultural practices.
- Ensuring flow of credit to the agriculture sector that will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

The scheme is compulsory for loanee farmers and voluntary for non-loanee farmers. The scheme covers food crops (cereals, millets and pulses), oilseeds and annual commercial/ annual horticultural crops. The risks covered under the scheme are yield losses (standing crops, on notified area basis), prevented sowing (on notified area basis), post-harvest losses (individual farm basis) and localized calamities (individual farm basis).The scheme operates on area approach. ‘The liability of the

<sup>13</sup> Source: [www.aicofindia.com](http://www.aicofindia.com)



Insurance companies in case of catastrophic losses computed at the National level for an agricultural crop season, shall be upto 350% of total premium collected (farmer share plus Govt. subsidy) or 35% of total Sum Insured (SI), of all the Insurance Companies combined, whichever is higher. The losses at the National level in a crop season beyond this ceiling shall be met by equal contribution (i.e. on 50:50 basis) from the Central Government and the concerned State Governments.' (AIC) So far the scheme has been taken up by 19 states and 1 union territory. But it has been implemented for two seasons only, so it is too early to comment on its performance.

*6.7 Few Other Crop Insurance Schemes:*

*6.7.1 Pilot Scheme on Seed Crop Insurance (PSSCI):* A Pilot Scheme on Seed Crop Insurance (PSSCI) was introduced by Government of India from Rabi 1999-2000 for strengthening confidence in the existing seed breeders/growers and for providing financial security to them in case of failure of seed crops. The identified crops under the scheme were paddy, wheat, maize, jowar, bajra, gram, red gram, groundnut, soyabean, sunflower and cotton. The scheme operated in the states of Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan and Uttar Pradesh.

*6.7.2 Farm Income Insurance Scheme (FIIS):* Farm Income Insurance Scheme (FIIS) was introduced on a pilot basis in Rabi season of 2003-04 in 18 districts of 12 states for wheat and paddy. The objectives of the scheme were to protect the income of the farmer, to reduce the government expenditure on procurement at Minimum Support Price (MSP)<sup>14</sup>, to encourage crop diversification and to give encouragement to private trade, etc. The scheme was based on homogeneous area approach and was compulsory for loanee farmers; however it was available to all the farmers of the states. The Government of India provided subsidy of 75 per cent of the premium for small/marginal farmers and 50 per cent of the premium for other farmers.

The Scheme was implemented during Rabi 2003-04 in 18 Districts of 11 States for wheat and / or rice and during Kharif 2004 season in 19 Districts of four States for rice. In all the scheme covered 4,15,032 farmers with 4,01,812 hectares for a sum insured (guaranteed income) of Rs. 4.20 billions, collecting a premium of Rs. 285 million and paid claims of Rs. 287.5 millions. (AIC) Though FIIS was discontinued in 2004 after two seasons, recently in 2014 introduction of FIIS was again being considered by the Government of India.

*6.7.3 Weather Based Crop Insurance Scheme (WBCIS):* Before Weather Based Crop Insurance Scheme (WBCIS) was implemented in all the states of India since Kharif 2007, it was piloted in few districts of Andhra Pradesh and Rajasthan in 2004 by ICICI Lombard. 'Weather Based Crop Insurance aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse conditions of weather parameters like rainfall, temperature, frost, humidity, etc.' (AIC).

The scheme was based on area approach and for calculation of compensation a Reference Unit Area (RUA) was deemed to be a homogeneous unit of insurance. Each RUA was linked to a Reference Weather Station (RWS) which if recorded any adverse weather incidence then the insured was eligible for a payout. The payout was assured within 45 days from the end of the insurance/risk period. The scheme was compulsory for loanee farmers however non-loanee farmers could also take up the scheme voluntarily. The premium rates were capped for the cultivator and beyond the cap the

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<sup>14</sup> Minimum Support Price (MSP) means the minimum price fixed by the Government of India or State Government for purchase of notified crops. This price is fixed by the Government to provide protection to the agricultural producers against any sharp drop in prices.

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premium was to be shared by central and state governments on 1:1 basis. Table 5 below shows a snapshot of the performance of WBCIS till it stopped operating in 2015-16:

**Table 5: All India Business Snapshot of WBCIS-Business Statistics from Kharif 2007 to Rabi 2015-16**

Sl. No.	States/UT	No. of Farmers Insured (000')	Area Insured (000' ha)	Amount in Rs. Crore				No. of Farmers benefitted (000')
				Sum Insured	Premium	Subsidy	Claims	
1	Andhra Pradesh	3618	5903.51	15127.91	1510.46	891.46	1080.07	2388
2	Andaman & Nicobar Islands	0	0.00	0.00	0.00	0.00	0.00	0
3	Arunachal Pradesh	0	0.00	0.00	0.00	0.00	0.00	0
4	Assam	13	7.46	46.65	4.79	2.40	4.63	8
5	Bihar	6471	6814.94	15630.51	1343.94	934.23	1089.02	5251
6	Chhattisgarh	453	809.63	1599.23	145.13	87.03	130.56	329
7	Dadra & Nagar Haveli	0	0.00	0.00	0.00	0	0	0
8	Daman & Diu	0	0.00	0.00	0.00	0	0	0
9	Goa	0	0.00	0.00	0.00	0	0	0
10	Gujarat	498	413.13	223.95	22.39	19.88	8.57	171
11	Haryana	70	119.82	440.88	38.42	29.69	33.88	40
12	Himachal Pradesh	165	65.84	886.62	97.08	47.88	81.25	133
13	Jammu & Kashmir	0	0.00	0.00	0.00	0	0	0
14	Jharkhand	225	168.92	318.31	29.59	22.01	18.01	190
15	Karnataka	736	865.54	1731.13	197.40	111.42	131.92	584
16	Kerala	163	119.92	369.82	36.17	23.61	33.19	129
17	Lakshadweep	0	0.00	0.00	0.00	0	0	0
18	Madhya Pradesh	429	843.12	1798.31	164.42	115.01	99.62	387
19	Maharashtra	2186	2466.09	6394.41	762.82	462.17	873.77	1887
20	Manipur	0	0.00	0.00	0.00	0	0	0
21	Meghalaya	0	0.00	0.00	0.00	0	0	0
22	Mizoram	0	0.00	0.00	0.00	0	0	0
23	Nagaland	0	0.00	0.00	0.00	0	0	0
24	Orissa	214	309.60	389.35	38.93	29.20	19.69	124
25	Puducherry	0	0.00	0.00	0.00	0	0	0
26	Punjab	0	0.10	0.19	0.02	0.01	0	0
27	Rajasthan	20863	29665.37	24261.73	2274.27	1563.05	1759.23	11311
28	Sikkim	0	0.00	0.00	0.00	0	0	0
29	Tamil Nadu	76	72.67	701.59	16.70	11.26	14.47	40
30	Telangana	167	174.24	530.89	52.60	26.30	124.70	158
31	Tripura	0	0.00	0.00	0.00	0	0	0
32	Uttar Pradesh	64	24.39	68.66	6.28	4.42	2.19	28
33	Uttarakhand	116	44.47	403.65	41.78	20.13	48.90	69
34	West Bengal	39	20.59	54.32	5.32	3.60	5.01	32
<b>Total</b>		<b>36567</b>	<b>48909.34</b>	<b>70978.11</b>	<b>6788.53</b>	<b>4404.78</b>	<b>5558.66</b>	<b>23258</b>

Source: Retrieved from [www.aicofindia.com](http://www.aicofindia.com), retrieved on 06.03.18

From the above table we can see that WBCIS was implemented in 19 states. 63.60 per cent farmers were benefitted of the total number of farmers who took insurance. The sum insured was Rs. 70978.11 crores and the amount of premium collected was Rs. 6788.53 crores against claims of Rs. 5558.66 crores. The overall claim to premium ratio was 81.88 per cent indicating that about 81.88 per cent of the total premiums collected were used in payment of claims or indemnities.

Though the level of transparency was higher in WBCIS yet it suffered from few shortcomings. The scheme did not cover any peril other than weather, the distance of the farm from the weather station, differences in soil types and management practices, shift in climatic and weather patterns, etc. led to weaker correlation between the yield and weather indices.

*6.7.4 Modified National Agricultural Insurance Scheme (MNAIS):* Modified National Agricultural Insurance Scheme (MNAIS) was launched by AIC as a modification over NAIS from 2010-11. 'MNAIS is an improvement over NAIS, and is based on actuarial premium rates. This scheme is expected to generate more benefits to farmers through coverage of prevented sowing/planting risk and post-harvest losses, higher indemnity level of minimum 70%, more precise calculation of threshold yield.' (AIC)

The scheme was compulsory for the loanee farmers. Only MNAIS was available to the farmers in the districts notified under MNAIS, they could not take other insurance schemes. However the states had an option of notifying a particular crop, or tehsil/block under MNAIS and for the other crops, tehsils/blocks other schemes could be operated. Premium subsidy was to be shared by the Central and state government on 50:50 basis. Table 6 below shows the performance of MNAIS over the years in which it was implemented:

**Table 6: All-India Business Snapshot MNAIS-Business Statistics from Rabi 2010-11 to Kharif 2014**

Sl. No.	States/ UT	No. of Farmers Insured (000')	Area Insured (000' ha)	Amount in Rs. Crores				No. of Farmers benefitted (000')
				Sum Insured	Premium	Subsidy	Claims	
1	Andhra Pradesh	1800	1881	8137.18	772.01	430.01	858.12	639
2	Andaman & Nicobar Islands	1	1	4.60	0.16	0.16	0.06	0
3	Assam	17	12	49.25	2.08	0.85	0.63	1
4	Bihar	1221	1370	2267.00	479.44	343.56	175.05	287
5	Chhattisgarh	0	0	0.05	0.00	0.00	0.00	0
6	Goa	0	0	0.78	0.02	0.00	0.14	0
7	Gujarat	17	1	2.61	0.28	0.17	0.00	0
8	Haryana	102	211	853.04	34.18	14.68	26.07	22
9	Jharkhand	12	6	14.61	1.32	0.73	0.05	0
10	Karnataka	1101	1705	2645.85	313.31	185.05	173.60	293
11	Kerala	47	64	238.94	12.07	6.95	5.67	4
12	Madhya Pradesh	79	151	197.23	7.60	2.99	0.78	2
13	Maharashtra	52	50	76.21	13.62	9.80	0.00	0
14	Mizoram	1	0	0.99	0.06	0.03	0.09	1
15	Orissa	120	87	297.07	11.00	4.11	65.10	56
16	Rajasthan	3661	4410	3760.89	373.96	203.82	269.40	893
17	Tamil Nadu	476	523	1349.36	140.41	83.32	267.98	244
18	Telangana	923	1258	5358.10	181.39	60.24	100.00	143

19	Tripura	0	0	0.00	0.00	0.00	0.00	0
20	Uttar Pradesh	1180	1161	3648.07	146.80	72.09	375.14	482
21	Uttarakhand	168	146	570.97	11.48	2.09	12.70	30
22	West Bengal	1150	487	3177.76	392.75	274.81	234.40	312
<b>Total</b>		<b>12128</b>	<b>13524</b>	<b>32651</b>	<b>2894</b>	<b>1695</b>	<b>2565</b>	<b>3408</b>

Source: Retrieved from [www.aicofindia.com](http://www.aicofindia.com), retrieved on 07.03.18

The scheme was implemented in 18 states and 1 union territory. 28.10 per cent farmers were benefitted of the total farmers who took up the scheme. The sum insured was Rs. 32651 crores and the amount of premium was Rs. 2894 crores against the claim amount of Rs. 2565 crores. The claim to premium ratio was 88.63 per cent.

## 7. Conclusion and Recommendations

The WBCIS has also been restructured and launched as Restructured Weather Based Crop Insurance Scheme (RWBCIS) which has made the previous WBCIS more farmer-friendly. And also recently during XII<sup>th</sup> plan National Crop Insurance Plan (NCIP) or Rashtriya Fasal Bima Karyakram (RFBK) has been formulated by merging MNAIS, WBCIS and Coconut Palm Insurance Scheme (CPIS). Currently AIC has varied insurance schemes like PMFBY, RWBCIS, Bio- fuel tree/ Plant insurance, Cardamom Plant and Yield Insurance, Potato Crop Insurance, CPIS, Rainfall Insurance Scheme for Coffee, Varsha Bima, etc. AIC also plans to launch Sugarcane Insurance, Tea Insurance, Basmati Rice Insurance, Aromatic & Medicinal Plant insurance and Contract Farming Insurance in the future.

From above discussion, we can conclude that the Central Government and AIC are taking ample measures to make crop insurance popular among the farmers. Yet, as pointed out by the ASSOCHAM-Skymet study report released in April 2015 the advantage of crop insurance is taken up by only 19% (approx.) of farmer families across India<sup>15</sup> out of 130-million farmer families<sup>16</sup>. On the brighter side, in January 2016, Government of India (GOI) announced the introduction of PMFBY from Kharif season 2016 which aims at increasing the penetration rate to 50 % of the farmer families<sup>17</sup>. Awareness among the farmers regarding crop insurance schemes needs to be increased, even after so many years of existence in the country many farmers still do not understand the importance of the scheme. Some nations use a public-private partnership model for crop insurance, our country can also use it to make the schemes more farmer-friendly and the spirit of competition would hasten the delivery procedure. The new scheme, PMFBY, is more market driven compared to the previous schemes. We have to wait for a few seasons before we can understand the increase in the penetration percentage of PMFBY.

<sup>15</sup> <http://www.assochem.org/newsdetail.php?id=4923>

<sup>16</sup> *Business Standard*, January 14, 2016

<sup>17</sup> *Business Standard*, January 14, 2016

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