



Performance of Weather Based Crop Insurance Scheme – Study on selected districts of Karnataka

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Abstract

Crop insurance is tool to protect the farmers from the financial losses caused due to the failure of crop. In other words Crop insurance is a means of protecting the farmers against financial losses due to uncertainties that may arise from named or unforeseen perils beyond their control (AIC). It is also a tool / arrangement where farmer can protect himself from losses raised due to adverse weather condition and low yield due to pest, diseases and other localized calamities. On the other hand, the financial institutions which are lending the loan to farmers can safeguard their loan against non payment by the farmer through using crop insurance. The present study has focus the overview of crop insurance of Karnataka . To make the research effective the secondary data has been obtained to know the performance WBCIS in selected districts of Karnataka .

Introduction

Agriculture sector is one of the larger sources of employment of the country which forced the government to concentrate more on agriculture since independence. Government of India has given top priority to agriculture sector in five year plans to increase the production of food grains to provide food security to country and also to support the farming community. Government also has taken various measures with the co-ordination of state and local Government for the development of agriculture which includes providing subsidy on agricultural inputs such as fertilizers and pesticides, free supply of power and reduction of land taxes etc. To reduce the burden of the farmer, the Central Government also financed large amount for extension of irrigation facility as well as to conduct research for the development of new variety of seeds and plants, for developing of new methods for controlling of insects and diseases and to innovate improved methods of farming for the

development of agriculture. It also introduced the concept of Minimum Support Price (MSP) for the reduction of price risk, however in most of the states and for most of the crops MSP has not implemented. The union Government also allocated huge amount of funds to provide institutional credit to the farmers through banks and financial institutions to implement modern agricultural practices and to encourage more people to engage in agricultural field, but all these measures have not contributed more towards the reduction of the agriculture risks of the farmer which affected the farming community negatively and resulted in farmers suicide in India. On other hand banks also faced the problem of non-payment of crop loan which resulted in increase of Non-Performing Assets of the bank. Therefore to provide financial security to the banks and to overcome from the problems of farmers, the Government of India has introduced the crop insurance in 1972. Initially, the general insurance section of Life Insurance Corporation has taken initiation of issuing crop insurance to protect the farmers from weather/yield risk. Later the responsibility has taken by the General Insurance Corporation.

Crop insurance is a means of protecting the farmers against uncertainties of crop yield arising out of practically all natural factors beyond their control (Sharma and Meena 2015). In other ways it is a tool which protects the farmers from losses of crop failure due to irregular rainfall, drought, flood, pests and diseases etc. The crop insurance has introduced with an objective of stabilizing the farmer's income with initiating them to farming activity even though they experienced an agriculture loss and now it has become important tool in protecting the farmer from agricultural risk.

Review of literature

Sinha and Tripathi (2016) conducted study in Thailand to assess the challenges in implementing crop insurance and also to know the extent of adaptation of crop insurance in the country through conducting interview with the insurance agents and farmers. The study revealed that even though rainfall index and weather based index insurance products has introduced in the country, the awareness of these products are limited and also lack of confidence, lack of technology are the key limiting factors for effective implementation of crop insurance in the country. Authors also stated that present compensation evaluation method followed and the compensation amount provided by the insurance companies was not satisfactory to the farmer. Therefore, the author suggested to increase the compensation amount and to concentrate on increasing of confidence among targeted group of farmers through creating awareness and also to adopt innovative technology to promote crop insurance.

Geetha and Thirumorthy (2018) conducted the study in the Erode and Namakkal Districts of Tamilnadu to analyze the farmer awareness level about crop insurance scheme were considering 100 farmers of the sample area and found that majority of the respondents were aware about the crop insurance, but they don't have knowledge about risk coverage as well as loss assessment method. The farmers came to know about crop insurance from friends and relatives which shown that the banks and other concerned agencies not given importance for creating awareness among farmers. Therefore, authors suggested to create more awareness and also recommended to provide credit facilities to all farmers to cover them under the scheme.

Hountoaji and et., all (2019) studied the perception and awareness level of rainfall index based programme among the maize farmer of Benin and found that majority of the respondents have not understood the concept of insurance. The farmers who have understood the concept expressed that the premium rate is very high. On the other hand the farmers who have educated and have high income are positively responded towards the scheme. Finally, the author suggested and concluded that the Government has to take necessary action to reduce the premium rate as well as to create awareness among the farmer.

Conceptual framework

Restructured Weather Based Crop Insurance Scheme (RWBCIS)

The Restructured Weather Based Crop Insurance Scheme was implemented in India since Kharif 2016 by the Government of India modifying the WBCIS with the objective of protecting the farmers from anticipated crop loss resulting from adverse weather condition related to rainfall, temperature and humidity. The present scheme operated on the basis of area approach and considers weather parameter as proxy indicator for yield comparison of the crops.

Objective of the Scheme

The Restructured Weather Based Crop Insurance Scheme (RWBCIS) aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from adverse weather conditions relating to rainfall, temperature, wind, humidity etc. WBCIS uses weather parameters as “proxy” for crop yields in compensating the cultivators for deemed crop losses. Payout structures are developed to the extent of losses deemed to have been suffered using the weather triggers.

Coverage of farmers

All the farmers including share croppers and tenant farmers who are cultivating notified crops in the notified area are eligible for the coverage. The farmers who are borrowed crop loan for notified crops in notified area are covered compulsorily and the farmers who are not availed any crop loan with the option of the farmer they are covered.

Coverage of crops

All the following crops are covered subjected to the availability of past yield data and notification of the respective State/UT's Government.

- Food crops (cereals, millets, Pulses)
- Oil seeds

- Annual commercial and Annual Horticulture crops

Coverage of Risk and Exclusion

All the risks caused by the weather condition and those are measurable and quantified in automatic weather station or automatic Rain gauge are covered under the scheme. The important weather perils covered are

- Rainfall – deficit Rainfall, excess rainfall, unseasonal rainfall, dry spells and dry days.
- Temperature - may high (heat) or low
- Relative humidity and wind speed
- Combination of all the above.

The scheme also made arrangement to cover risks arises due to hailstorm, cloud burst and predefined wind speed as add on coverage subjected to State implementation and also option of the farmer with applicable national level actual premium rate. The loss assessment under this method is completely left with insurance companies. Apart from the above perils State Government shall consider covering such perils which are capable of causing severe and quantifiable loss and can be induced directly or indirectly by change in measurable weather parameters to capture the losses during the adverse climatic conditions and have demonstrated correlation with quantifiable yield losses of crop due to such perils

Source of data

This study is based on the secondary data. The data obtained from the AIC of India ,Bangalore. For the study 5 districts of Karnataka viz Mysore, Hassan, Chamarajanagara, Mandya, Tumkur and data collected for the period of 2009-2014 of WBCIS for Kharif seasons

OBJECTIVE OF THE STUDY

The objective of the study are as follows:

- To evaluate the trend of farmers insured under WBCIS in south dry zone of Karnataka rea.

Table showing the trend of Farmers Insured under WBCIS for Kharif seasons from 2009 to 2013 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Farmers Insured	Trend (%)	Farmers Insured	Trend (%)
2009	4234	100	99068	100
2010	4642	109.63	37060	37.41

2011	1496	35.33	120567	121.70
2012	35744	844.21	118181	119.29
2013	-	0	108706	109.73
2014	109	2.57	136043	137.32

- **Source:** AIC of India, Bengaluru
- The above table represents the trend of farmers insured in Karnataka and south dry zone under WBCIS for Kharif seasons from 2009 to 2014. The trend of farmers insured in Karnataka has decreased to 37 percent in 2010, but it has increased from 2011 to 2014 and it was high at 137 percent in 2014. On the hand the farmers insured trend in south dry zone has increased to 110 percent compared to base year, but it falls to 35 percent in the next year. The trend has again increased to 844 percent in 2012 which was the highest growth in Karnataka, but in the following years again it was decreased to very low level. To conclude the farmers insured rate was high in Karnataka compared to south dry zone.

Table showing the trend of Area Insured under WBCIS for Kharif seasons from 2009 to 2013 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Area Insured (in Hectares)	Trend (%)	Area Insured (in Hectares)	Trend (%)
2009	3687	100	118299	100
2010	4475	121.37	38117	32.22
2011	1317	35.72	137058	115.86
2012	30009	813.91	130322	110.16
2013	-	0	147645	124.81
2014	87.8	2.38	139171	117.64

- **Source:** AIC of India, Bengaluru
- From the above table it can be stated that the trend of area insured under WBCIS for Kharif seasons in Karnataka has constant growth from 2009 to 2014 except in 2010 which was very low and decreased to 32 percent. The trend of Karnataka was high at 125 percent in 2013, whereas zero in south dry zone. The trend of area insured in south dry zone was increased to 121 percent in 2010 and further to 814

percent in 2012 has made high coverage of area compared to Karnataka, but it fall to 2 percent which was very low under WBCIS in 2014.

Table showing the trend of Sum Insured under WBCIS for Kharif seasons from 2009 to 2013 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Sum Insured (in lakh)	Trend (%)	Sum Insured (in lakh)	Trend (%)
2009	916.4	100	15203.7	100
2010	1115.6	121.73	5774.4	37.98
2011	330.04	36.01	16819.4	110.63
2012	7021.5	766.20	19759	129.96
2013	-	0	19294	126.90
2014	87.78	9.58	75844.5	498.85

- **Source:** AIC of India, Bengaluru
- The above table reveals that the trend of sum insured under WBCIS in Karnataka has reduced to 38 percent in 2010, but started to increase in 2011 and increased to 111 percent. The trend of sum insured has gradually increased and reached 499 percent in 2014. On the other hand the trend of sun insured in south dry zone has increased to 122 percent in 2010 compared to base year and further to 766 percent in 2012. To conclude the trend of south dry zone was very low in 2011 and 2014 compared to trend of Karnataka.

Table showing the trend of Claims Paid under WBCIS for Kharif seasons from 2009 to 2013 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Claims Paid (in lakh)	Trend (%)	Claims Paid (in lakh)	Trend (%)
2009	2.512	100	1593.05	100

2010	15.21	605.49	117.76	7.39
2011	3.18748	126.89	784.29	49.23
2012	493.34	19639.33	1777.5	111.58
2013	-	0	2240.7	140.65
2014	-	0	31.1	1.95

- **Source:** AIC of India, Bengaluru
- The above table stated that the trend of claims paid under WBCIS for Kharif seasons from 2009 to 2015 in south dry zone has a increasing trend and it has increased to 605 percent in 2010 and further increase of 19369 percent in 2013, whereas in Karnataka the trend has decreasing trend up to 2012 from 2009. It was started to increase and raised to 111 percent in 2012, but again it has fallen to 2 percent. From the above table we can express that the trend of claims paid in south dry zone has high and better than the Karnataka.

Table showing the trend of Farmers Benefited under WBCIS for Kharif seasons from 2009 to 2013 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Farmers Benefited	Trend (%)	Farmers Benefited	Trend (%)
2009	277	100	69877	100
2010	4187	1511.55	23720	33.95
2011	1107	399.64	105639	151.18
2012	35744	12903.97	116913	167.31
2013	-	0	99945	143.03
2014		0	1671	2.39

- **Source:** AIC of India, Bengaluru
- The above table reflects that the trend of farmers benefited under WBCIS in Karnataka has increasing trend except in 2010 and it was increased to 151 percent compared to base year and further increase of 167 percent and 143 percent in 2012 and 2013. On the other hand the trend of farmers benefited of south dry zone has also increased to 1512 percent in 2010 and further to 12904 percent in 2012, but the WBCIS

was not benefited to any farmers in 2013 and 2014 in south dry zone. The table also reveals that the trend of beneficiaries has high in south dry zone compared to Karnataka from 2009 to 2012.

Table showing the trend of Farmers Insured under WBCIS for Rabi seasons from 2008-09 to 2013-14 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Farmers Insured	Trend (%)	Farmers Insured	Trend (%)
2008-09	-	-	3621	100
2009-10	-	-	3037	83.87
2010-11	-	-	9594	264.95
2011-12	-	-	13295	367.16
2012-13	-	-	929	25.66
2013-14	-	-	3730	103.01

- **Source:** AIC of India, Bengaluru
- The above table belongs to trend of farmers insured in Karnataka under WBCIS for Rabi seasons from 2008-09 to 2013-14. The trend of farmers insured has decreased to 84 percent in 2009-10 compared to base year, but it has started to increase in 2010 and increased to 367 percent in 2011-12 and to 103 percent in 2013-14.

Table showing the trend of Area Insured under WBCIS for Rabi seasons from 2008-09 to 2013-14 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Area Insured (in Hectares)	Trend (%)	Area Insured (in Hectares)	Trend (%)
2008-09	-	-	6395	100
2009-10	-	-	8776	137.23
2010-11	-	-	18826	294.39
2011-12	-	-	20635	322.67

2012-13	-	-	1697	26.54
2013-14	-	-	4942	77.28

- **Source:** AIC of India, Bengaluru
- From the above table it can be stated that the trend of area insured under WBCIS for Rabi seasons has gradually increased and high at 333 percent in 2011-12, but it has decreased to 27 percent in 2012-13 and managed to increase to 77 percent in 2013-14.

Table showing the trend of Sum Insured under WBCIS for Rabi seasons from 2008-09 to 2013-14 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Sum Insured (in lakh)	Trend (%)	Sum Insured (in lakh)	Trend (%)
2008-09	-	-	1201	100
2009-10	-	-	907	75.52
2010-11	-	-	2428	202.16
2011-12	-	-	2398	199.67
2012-13	-	-	276	22.98
2013-14	-	-	826	68.78

- **Source:** AIC of India, Bengaluru
- The above table reflects that the trend of sum insured in Karnataka under WBCIS for Rabi seasons from 2008-09 to 2013-14 has fluctuating trend. The trend has decreased to 75 percent in 2009-10, but it has risen to around 200 percent in 2010-11 and 2011-12. Later the trend falls below the 100 percent mark from 2012-13 to 2013-14.

Table showing the trend of Claims Paid under WBCIS for Rabi seasons from 2008-09 to 2013-14 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Claims Paid (in lakh)	Trend (%)	Claims Paid (in lakh)	Trend (%)

2008-09	-	-	113.4	100
2009-10	-	-	38.77	34.19
2010-11	-	-	242	213.40
2011-12	-	-	97.45	85.93
2012-13	-	-	37.4	32.98
2013-14		-	139.4	122.93

- **Source:** AIC of India, Bengaluru
- The above table belongs to the trend of claims paid under WBCIS in Karnataka for Rabi seasons and stated that the trend has decreased the over years from 2008-09 to 2012-13 except in 2010-11 which has increase of 213 percent. The trend of claims paid has again increased to 123 percent in 2013-14.

Table showing the trend of Farmers Benefited under WBCIS for Rabi seasons from 2008-09 to 2013-14 in South Dry Zone and Karnataka

Year	South Dry Zone		Karnataka	
	Farmers Benefited	Trend (%)	Farmers Benefited	Trend (%)
2008-09	-	-	1632	100
2009-10	-	-	348	21.32
2010-11	-	-	2163	132.54
2011-12	-	-	4519	276.89
2012-13	-	-	486	29.78
2013-14		-	2282	139.83

- **Source:** AIC of India, Bengaluru
- The above table reflects the trend of farmers benefited in Karnataka for Rabi seasons from 2008-09 to 2013-14 under WBCIS. The trend of farmers benefited has an increasing trend except in 2009-10 and 2012-13 which were less than 30 percent. The trend was high at 277 percent compared to base year in 2011-12.

Findings related to performance of crop insurance scheme related to WBCIS

1. The trend of farmers insured, area insured and sum insured have constantly increased over the years from 2009 to 2014 in Karnataka for Kharif seasons but it has fluctuating trend in South Dry Zone.
2. WBCIS has not implemented in all the Rabi seasons in South Dry Zone
3. The trend of claims paid was high in South Dry Zone compared to Karnataka for Kharif 2010 to 2012 and it was nil in South Dry Zone in 2013 and 2014.
4. The trend of farmers insured and area insured has increased over the years except in 2012-13 Rabi seasons and trend of sum insured has decreased over the years except 2010-11 and 11-12 Rabi in Karnataka.
5. Claims paid in Karnataka has an increasing trend in all Rabi seasons except in 2010-11 and the trend of farmers benefited also increased except in 2009-10 and 2012-13 Rabi.
6. Only 46225 farmers were insured in South Dry Zone out of 653831 farmers of Karnataka and 41315 farmers were benefited in South Dry Zone against 429198 farmers of Karnataka for both Kharif and Rabi seasons respectively from 2008 Rabi to 2014 Kharif.

Conclusion

Insurance plays a crucial role in every economy by spreading the losses of an individual among the members of the group with similar exposure (Dolar 2008). In other words insurance is a mechanism where the losses of few people are met by the group of people through small contribution. Insurance plays a very important role in the economy through safeguarding the interest of the people through spreading the risk and motivates the people to engage in all the economic activities. Insurance sector was highly developed in western countries like USA and Europe where all the activities conducted with economic intention are covered under insurance and also people of those countries are aware about the concept of insurance and learnt how to use the insurance to reduce the risk involved in the economic activity, On the other hand, in developing countries like India the insurance sector is in developing stage and people think insurance as a additional cost instead of risk mechanism tool. To conclude government of Karnataka has to emphasis on south dry zones of Karnataka for the proper and efficient implementation of WBCIS.

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