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Problems and Progress in Agricultural Insurance in India

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Agricultural production and farm incomes in India are frequently affected by natural disasters such as droughts, floods, cyclones, storms, landslides and earthquakes. Susceptibility of agriculture to these disasters is compounded by the outbreak of epidemics and man-made disasters such as fire, sale of spurious seeds, fertilizers and pesticides, price crashes, etc. All these events severely affect farmers through loss in production and farm income, and are beyond the control of farmers. With growing commercialization of agriculture, the magnitude of loss due to unfavourable eventualities is increasing. The question is how to protect farmers by minimizing such losses. In recent times, mechanisms like contract farming and futures trading have been established which are expected to provide some insurance against price fluctuations directly or indirectly. But, agricultural insurance is considered an important mechanism to effectively address the risks to output and income resulting from various natural and manmade events. Unfortunately, agricultural insurance in the country has not made much headway even though the need to protect Indian farmers from agricultural variability has been a continuing concern of agriculture policy.

This brief discusses genesis of agricultural insurance in India and examines various agricultural insurance schemes launched in the country. Major issues and problems faced in implementing agricultural insurance in the country are also discussed in detail.

GENESIS OF AGRICULTURAL INSURANCE

The question of introducing an agricultural insurance scheme was examined soon after the independence in 1947. Following an assurance given in this regard by the then ministry of food and agriculture in the central legislature to introduce crop and cattle insurance, a special study was commissioned during 1947-48 to consider whether the insurance should follow an 'individual approach' or a 'homogenous area approach'. In 1965, the Government introduced a crop insurance bill and circulated a model scheme of crop insurance on a compulsory basis to state governments for their views. However, none of the states favoured the scheme because of the financial obligations involved in it (Dandekar, 1976). On receiving the reactions of different state governments, the subject was referred to an expert committee headed by the then chairman, Agricultural Prices Commission, in July, 1970 for full examination of the economic, administrative, financial and actuarial implications of the subject.

First Individual Approach Scheme 1972-1978

Different forms of experiments on agricultural insurance on a limited, ad-hoc and scattered scale were started from 1972-73 when the General Insurance Corporation (GIC) of India introduced a crop insurance scheme on H-4 cotton and later included groundnut, wheat and potato. The scheme was implemented in Andhra Pradesh, Gujarat, Karnataka,

Maharashtra, Tamil Nadu and West Bengal. It continued up to 1978-79 and covered only 3,110 farmers for a premium of Rs 4.54 lakh against claims of Rs 37.88 lakh. The claim premium ratio was 8.34, indicating that for every one rupee of premium collected, the scheme paid Rs 8.34 in claims. Mainly because of this reason, GIC of India found these schemes uneconomic and unsuitable for implementation on a large scale due to very high claim premium ratio.

Pilot Crop Insurance Scheme (PCIS) 1979-1984

In the background and experience of the aforesaid experimental scheme, a study was commissioned by GIC of India and entrusted it to Prof. V. M. Dandekar to suggest a suitable approach to be followed in the scheme. The recommendations of the study were accepted and a PCIS was launched by the GIC in 1979, which was based on the 'Area Approach' for providing insurance cover against a deficit in crop yield below the threshold level. The scheme covered cereals, millets, oilseeds, cotton, potato and chickpea and it was confined to loanee farmers of institutional sources on a voluntary basis. The premium paid was shared between the GIC and state governments in the ratio of 2:1. The maximum sum insured was 100% of the crop loan, which was later increased to 150%. The insurance premium ranged from 5% to 10% of the sum insured. Premium charges payable by small / marginal farmers were subsidized by 50% which was shared equally between the state and central governments. PCIS 1979 was implemented in 12 states till 1984-85 and covered 6.23 lakh farmers for a premium of Rs 195.01 lakh against claims of Rs 155.68 lakh during the entire period. Following were some of the shortcomings that impinged upon the coverage of the crop insurance scheme.

- Since crop insurance was linked to crop loans, many small and marginal farmers could not participate in this crop insurance scheme because a majority of these farmers have poor access to institutional credit.
- The unit of insurance was very large.
- Lack of awareness among farmers about the crop insurance scheme.
- Major commercial crops like cotton and sugarcane were excluded from this scheme.

Comprehensive Crop Insurance Scheme (CCIS) 1985-99

This scheme was linked to short-term credit and was based on the 'homogenous area approach'. The central government introduced the CCIS during the year 1985-86. Till *kharif* 1999, the scheme was adopted by 15 states and 2 union territories (UTs). Both, PCIS and CCIS were confined only to farmers who had borrowed seasonal agricultural loans from financial institutions. The main distinguishing feature of the two schemes was that PCIS was on voluntary basis, whereas CCIS was compulsory for loanee farmers

in the participating states / UTs. It covered farmers availing crop loans from financial institutions, for growing food crops and oilseeds, on a compulsory basis. The coverage was restricted up to 100% of crop loan, subject to a maximum of Rs 10,000 /- per farmer. The premium rates were 2% for cereals and millets and 1% for pulses and oilseeds. Half of the premium payable by small and marginal farmers was subsidized equally by central and state governments. The burden of premium and claims was shared by the central and state governments in a 2:1 ratio.

CCIS covered 763 lakh farmers for a premium of Rs 404 crore against claims of Rs 2303 crore. The benefits of CCIS were highly skewed towards Gujarat, as more than half (58%) of the total indemnities under CCIS were paid to groundnut farmers in this state alone. The other participating states which contributed 84% to the premium during 1985-99, received only 42% of total claims. The claim-premium ratio was nearly 20.74 for Gujarat, while it was only about 5.72 at the all-India level. Saurashtra experienced severe droughts during 1985, 1986 and 1987. The large-scale crop failures (especially groundnut in *kharif*) were reported during 1990, 1991 and 1993. This resulted in very high indemnity payments. There were reports indicating that the farmers used to pressurize village level officials conducting crop cutting experiments to underestimate the crop yields so that farmers in the area could get the indemnity payments.

The other major shortcomings of the scheme were area approach, coverage confined to loanee farmers, uniform premium rate for all the farmers and regions, coverage of few crops and time lag for indemnity payment (Jain, 2004) .

Initially, the premium in the case of small and marginal farmers was subsidized @ 50 %, which was shared equally by the Government of India and the concerned state/UT. The premium subsidy was to be phased out over a period of five years, at present 10 % subsidy is being provided on the premium payable by small and marginal farmers. At present, the NAIS is being implemented by all the states except Arunachal Pradesh, Manipur, Mizoram, Nagaland and Punjab. These 5 states did not join the NAIS and have extended different reasons for not joining the scheme. For example, North-East Hill (NEH) region states were interested in covering perennial horticultural crops under NAIS. Similarly, Punjab also was not interested in multi-peril crop insurance and wanted insurance cover against hailstorm only with higher indemnity limits.

During the past eight years of its implementation, the scheme covered 9-16% farmers, 8-16% crop area and 2.22 -3.74% of crop output in value terms in different years (Table 1). The amount of claims was much higher than the premium paid, indicating a loss in the operation of this scheme. During 2000-01 and 2002-03, the claims was more than five times of the premium paid. During 2003-04 to 2007-08, the amount of claims was more than double the amount of premium collected. As claims exceeded premiums, there was a net loss in the scheme, even without considering administrative cost. The magnitude of loss can also be seen by comparing the ratio of 'claims to sum assured' with ratio of 'premium to sum assured'. During the year 2007-08, claims constituted 7.17 % as against 2.79% premium

Table 1: Performance of National Agricultural Insurance Scheme

Year	Farmers covered (%)	Area covered (% GCA)	Sum assured as % of value of crop output	Claims ratio (Claims / Premium)	Premium / sum assured (%)	Claims / sum assured (%)
1999-00 (<i>rabi</i>)	0.50	0.41	0.09	1.60	1.40	2.25
2000-01	9.09	8.73	2.28	5.45	2.76	15.06
2001-02	9.23	8.42	2.22	1.91	3.24	6.20
2002-03	10.48	11.12	2.92	5.52	3.23	17.84
2003-04	10.73	9.88	2.46	3.29	3.11	10.22
2004-05	14.04	15.53	3.70	2.24	3.16	7.06
2005-06	14.45	14.56	3.55	2.53	2.97	7.52
2006-07	15.51	14.32	3.72	2.98	3.03	8.53
2007-08	15.95	14.58	3.74	2.57	2.79	7.17

Source : Authors' calculation based on data taken from Economic Survey 2008-09, National Accounts Statistics 2009 and AIC 2009.

National Agricultural Insurance Scheme (NAIS) : 1999 - date

The NAIS was introduced in the country from the 1999-2000 *rabi* season, replacing CCIS which had been in operation since 1985. This scheme is available to both borrowers and non-borrowers. It covers all food grains, oilseeds and annual horticultural / commercial crops for which past yield 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, banana and pineapple, are covered under the scheme. The scheme is operating on the basis of both 'area approach', for widespread calamities, and 'individual approach', for localized calamities such as hailstorms, landslides, cyclones and floods.

The premium rates applicable on the sum insured are:

Wheat 1.5 % Other *rabi* crops 2.0 %

Bajra and oilseeds: 3.5 % Other *kharif* crops: 2.5 %

Annual commercial / horticultural crops: Actuarial rate

on the sum assured. This implies a loss of 4.38% of the assured value of output. The scheme is not financially viable, as it depends on the government for subsidization. The claim to premium ratio is still very high. The question is posed that if disaster strikes how the government will manage the claims? Second, though the area yield approach minimizes or eliminates the problem of moral hazards, the problem of adverse selection seems to be affecting the existing NAIS, as indicated by higher claim ratio or loss ratio for non-loanee farmers. Third, there is inordinate delay in settling the claims in the event of crop failures.

Issues related to National Agricultural Insurance Scheme

The farming community at large does not seem to be satisfied with the partial expansion of scope and content of crop insurance scheme in the form of NAIS over Comprehensive Crop Insurance Scheme. There are issues relating to its operation, governance and financial sustainability. After extensive reviewing, gathering perceptions of the farming community and discussions with experts from Agricultural Insurance Corporation (AIC), agricultural departments, bankers, academicians and other

representatives in Andhra Pradesh on the performance of NAIS, some modifications have been suggested in its designing to make it more effective and farmer friendly.

(a) Reduction of insurance unit to the village panchayat level

As of now, the National Agricultural Insurance Scheme is implemented on the basis of 'homogeneous area' approach, and the area (insurance unit) at present is the Mandal / Taluk / Block or equivalent unit, in most instances. These are large administrative units with considerable variations in yields and impact of natural calamities. For the scheme to become more popular, the unit for determining claim should be reduced to the level of 'village' in the case of large villages and to 'cluster of villages' in the case of small villages. Ideally, an 'individual approach' would reflect crop losses on a realistic basis, and has been regarded most desirable. However, under the Indian conditions, implementing a crop insurance scheme at the 'individual farm unit level' is beset with the main problem of huge transaction cost (Planning Commission, 2007).

(b) Threshold yield / guaranteed yield

Presently, Guaranteed Yield, based on which indemnities are calculated, is the moving average yield of the preceding three years for rice and wheat, and preceding five years for other crops, multiplied by the level of indemnity. The concept does not provide for adequate protection to farmers, especially in areas with consecutive adverse seasonal conditions, pulling down the average yield. It is proposed to consider the best 5, out of the preceding 10 years' yield.

(c) Extending risk coverage to prevented sowing / planting in adverse seasonal conditions

The NAIS under the existing mode covers risk only from sowing to harvesting. Many a times, sowing / planting is prevented due to adverse seasonal conditions and the farmer not only loses his initial investment, but also loses the opportunity value of the crop. A situation where the farmer is prevented from even sowing the field, is a case of extreme hardship and this risk must be covered. Pre-sowing risk, particularly prevented / failed sowing / re-seeding on account of adverse seasonal conditions, should be covered, wherein up to 25% of sum insured could be paid as compensation, covering the input cost incurred till that stage.

(d) Coverage of post-harvest losses

In some states, crops like paddy, are left in the field for drying after harvesting. Quite often, this 'cut and spread' crop gets damaged by cyclones, floods, etc., especially in coastal areas. Since, the existing scheme covers risk only up to harvesting, these post-harvest risks are outside the purview of insurance cover. This issue was examined in the light of difficulties in assessing such losses at an individual level. One of the suggestions to address this, could be to extend the insurance cover for two weeks after harvest.

(e) On-account settlement of claims

The processing of claims in NAIS begins only after the harvesting of the crop. Further, claim payments have to wait for the results of Crop Cutting Experiments (CCEs) and also for the release of requisite funds from the central and state governments. Consequently, there is a gap of 8-10 months between the occurrence of loss and actual claim payment. To expedite the settlement of claims in the case of adverse seasonal conditions, and to ensure that atleast a part of the likely claims is paid to the farmer before the end of the season, it is suggested to introduce 'on-account' settlement of claims, without waiting for the receipt of yield data, to the extent of 50 % of likely claims, subject to adjustment against the claims assessed on the yield basis.

(f) Service to non-loanee farmers

The awareness about the scheme is poor, partly due to lack of adequate localized interactions and substantially due to the lack of effective image building and awareness generation campaigns. For loanee farmers, with premia being deducted at the time of loan disbursement and claim settlements being credited to the farmer's loan account, an illiterate or poorly educated farmer is hardly aware of the scheme's existence, let alone its benefits. The poor participation of non-loanee farmers is even worse. Hence, major pilot studies, to build some effective communication models in this regard, need to be conducted, as an integral aspect of policy planning.

Other Schemes in Operation

Agricultural insurance in India till recently has concentrated only on crop sector and confined to compensate yield loss. Recently, some other insurance schemes are in operation in the country which go beyond yield loss and also cover the non-crop sector. These include 'Farm Income Insurance Scheme' and 'Livestock Insurance scheme'. The Farm Income Insurance Scheme was started on a pilot basis during 2003-04 to provide income protection to the farmers by integrating the mechanism of insuring yield as well as market risks. In this scheme, the farmer's income is ensured by providing minimum guaranteed income.

Livestock Insurance is available for almost all livestock species. Normally, an animal is insured up to 100 % of its market value. The premium is 4 % of the sum insured for general public and 2.25 % for Integrated Rural Development Programme (IRDP) beneficiaries. The government subsidizes premium for IRDP beneficiaries. Progress in livestock insurance, has been slow. In 2004-05, about 32.18 million heads were insured which comprised 6.58 % of total livestock population. The implementation of livestock insurance in its present form, does not satisfy the farmers much. The procedure for verification of claims and their settlement is a source of constant irritation and subject of many jokes. This calls for a re-look.

Private Sector Initiatives

During the year 2003-04, the private sector came out with some insurance products in agriculture based on weather parameters. The insurance losses due to vagaries of weather, i.e. excess or deficit rainfall, aberrations in sunshine, temperature and humidity, etc. could be covered on the basis of weather index. If the actual index of a specific weather event is less than the threshold, the claim becomes payable as a percentage of deviation from actual index. One such product, namely, rainfall insurance was developed by ICICI-Lombard General Insurance Company and by IFFCO-Tokio General Insurance Company. Under the scheme, coverage for deviation in the rainfall index is extended and compensations for economic losses due to less or more than normal rainfall are paid. The advantages of rainfall insurance scheme are: (a) low or negligible administrative costs; (b) transparent and objective calculation of rainfall index; and (c) quick settlement of claims.

A brief account of all the crop insurance schemes launched in India is provided in Table 2.

ROLE OF GOVERNMENT IN AGRICULTURAL INSURANCE

If crop insurance is to be successful, it requires public support. This could be done by first, providing information on weather patterns and historical crop yields. Second, by meeting the costs of the research needed before any agricultural insurance programme can be started. Third, by subsidy on premium, meeting part of administrative expenditure, and reinsurance, etc. (Roberts, 2005).

Table 2 : Various Schemes Related to Crop Insurance in India and their Features

Insurance scheme	Period	Approach	Crops covered	Farmers covered (lakh)	Amount (in crore Rs)		Salient features
					Premium	Claims	
Crop Insurance Scheme	1972-78	Individual	H-4 Cotton, groundnut, wheat and potato	0.03	0.05	0.38	Voluntary. Implemented in 6 states
Pilot Crop Insurance Scheme	1979-84	Area	Cereals, millets, oilseeds, cotton, potato and chick pea	6.23	1.95	1.56	Confined to loanee farmers, voluntary, 50% subsidy on premium for small and marginal farmers
Comprehensive Crop Insurance Scheme	1985-99	Area	Food grains and oilseeds	763	404	2303	Compulsory for loanee farmers
National Agricultural Insurance Scheme	1999-Continuing	Area and Individual	Food crops, annual commercial and horticultural crops	1155	3626	11607	Available to all farmers. 10% premium subsidy for small and marginal farmers.
Farm Income Insurance Scheme	2003-04	Area	Wheat and rice	2.22	15.68	1.5	Insurance against production and market risks. Compulsory for loanee farmers
Weather Based Crop Insurance Scheme	2007-Continuing	Individual	Food crops, annual commercial and horticultural crops	1.40	3.50	N.A	Available to all farmers. Based on weather index

Note: NA- Not Available

Global experiences show that due to special nature of agricultural production, in several countries, premium payable by farmers is subsidized by the government. Subsidy on insurance premium in the recent years was estimated to be 60% in USA, 70 % in Canada, 50-60% in Philippines and 58 % in Spain. In case the farmers are asked to pay full premium themselves then chances of adoption of agricultural insurance are bleak. There is a need for some subsidization by government.

CONCLUSIONS AND POLICY SUGGESTIONS

Despite various schemes launched from time to time in the country, agricultural insurance has served very limited purposes. The coverage in terms of area, number of farmers and value of agricultural output is very small, payment of indemnity based on the 'area approach' misses the affected farmers outside the compensated area, and most of the schemes are not viable. This requires renewed efforts by government in terms of designing appropriate mechanisms and providing financial support for agricultural insurance. Providing similar help to private sector insurers would help in increasing insurance coverage and improving the viability of insurance schemes over time. With improved integration of the rural countryside and communication networks, the unit area of insurance could be brought down to the village panchayat level. Insurance products for the rural areas should be simple in design and presentation so that they are easily understood. With increased commercialization of agriculture, price fluctuations have become highly significant in affecting farmers' income. Accordingly, market risk is now quite important in affecting farmers' income. Implementation of market insurance to cover

price risk is much easier than yield insurance. This can be done by requiring the interested farmers to register their marketable surplus with insurance agency or market committee at the time of sowing of crop. The insurance agency should offer insurance cover to include price guarantee which could be the minimum support price in some cases or the market-based price from the past. Farmers should pay the premium for this kind of price insurance and initially the government should share some of the burden of the premium. During harvest, if the price in the notified market falls below the guaranteed price, then the insurance agency should pay indemnity. There is lot of interest in the private sector to invest in the general insurance business. This opportunity can be used to allot some targets to various general insurance companies to cover agriculture. To begin with, this target could be equal to the share of agriculture in national income.

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July 2009

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