# CHAPTER – VII

# SUMMARY AND RECOMMENDATIONS

## 7.1 FINDINGS OF THE STUDY

The study was carried out with a broad objective to analyse the growth and development of agricultural insurance in India as well as to assess the viability of existing agricultural insurance programmes by examining Portfolio Risk Management with a view to develop a sound risk retention and risk transfer strategy for the insurance company with special reference to Agricultural Insurance Company of India Ltd.

For the purpose of accomplishment of the above objective seven major analyses were conducted in this study. The findings of these analyses are as under.

### 7.1.1 An Analysis of CCIS and NAIS Programme

The analysis was conducted with 21 years of crop insurance data bases starting from Kharif 1985 to Rabi 2006 of the CCIS and NAIS Programme. Following are the major findings.

- Agricultural insurance in India has expanded its coverage significantly from 4 million insured farmers in 1985 to 17.2 million insured farmers in 2006 equivalent to a current uptake level of about 14.3% of all India's 120 million farmers.

- In comparison with CCIS, NAIS has provided greater coverage in terms of both farmers and crops as non-loanee farmers are made eligible to buy insurance cover. Moreover, insurance is now extended to commercial and horticultural crops.

- Insured Area has expanded from 7.69 million hectares in 1985 to 28.3 million hectares in 2006 or an increase of nearly 400%. The Total Sum Insured has increased from Rs. 7.8 billion in 1985 to Rs. 186 billion in 2006.

- Initially, crop insurance was implemented in only 9 states. Now the program has covered up to 23 states and 2 Union territories over the past 21 years. Among them the top 5 states are Andhra Pradesh, Gujarat, Maharastra, Madhya Pradesh and Karnataka. The top 10 states have accounted for 94% of total liability over this period and coverage in the remaining 15 states has been extremely low.

### 7.1.2 Analysis of Private Participations in Agricultural Insurance in India

To the extent of agricultural insurance in India are concerned only two private insurance companies viz., ICICI-Lombard and IFFCO-Tokio have entered in the arena of agricultural insurance in India. They have modified their offerings considerably by way of weather-indexed contracts. The study has been conducted on empirical basis and the major findings may be discussed as under.

- Risk costs for weather insurance is very high due to the extreme variations in weather conditions year after year. Hence, insurance companies need to charge risk premium adequately in order to cover their costs. In this process the potential customers may not find weather insurance as an attractive proposition.

- Adverse selection and moral hazard problems raise the cost and risks of introducing crop insurance products because obtaining information on clients is more difficult and monitoring client behavior is more costly. As a result of these two problems private insurance is generally not available, and if it is available, it is not affordable to the majority of farm operators.

- It is recognized by this analysis that there has been very insignificant development in the private agricultural insurance sector in India. Although various innovative crop insurance products have been initiated in the selected areas on pilot basis but the overall impact of liberalization in agricultural insurance is very much unfounded.

### 7.1.3 Analysis of Correlations among the States

Correlation analysis reveals that the performances of all the states are not evenly correlated. Only few states are significantly correlated with each other. Major findings of the crop level analysis are as under.

- The analysis suggests that a claim in Rajasthan is significantly correlated with Andhra Pradesh, Jharkhand, Karnataka, Maharashtra and Orissa at 99.9% confidence level.

- Actual correlation suggests that claims in Rajasthan have very high positive correlation with Andhra Pradesh and Jharkhand. It also has very high negative correlation with Karnataka, Maharashtra and Orissa.

- Similarly claims in Chhattisgarh are significantly correlated with claims in Gujarat, Jharkhand, Madhya Pradesh, Orissa, and Utar Pradesh.

### 7.1.4 Analysis of Correlations among the Crops

Correlation analysis suggests that some of the crops are performing at danger level and only few crops are significantly correlated with each other. Major findings of the crop level analysis are as under.

- Cluster Bean is highly correlated with almost all the crops. And correlation is negative in most of the cases. Underwriting result shows very high combined ratio for this crop.

- Black Gram shows opposite trend. Claim for this crop shows significantly positive correlation with some of the other crops (e.g., Jowar, Maiz, black Gram etc).

- Ground Nut is showing zero correlation with all other crops. This means claim profile for this crop is totally different from the other crops. Combined ratio and loss ratio for this crop suggests highly unprofitable underwriting. The same observation can be drawn for Green Gram.

### 7.1.5 State Level Capital Allocation Analysis

The total study signifies that the overall portfolio of AICI should be unevenly distributed to cope with the heavy claim loss burden that are distinctively varies from state to state. Findings of the analysis are stated below.

- The analysis suggests maximum capital allocation (to support losses) to Gujarat followed by Karnataka and Andhra Pradesh. High claims in these states are not adequately compensated by premium received.

- The Underwriting analysis shows loss-making underwriting in all the states. So it can be said that it is not profitable in general.

- A comparative analysis shows better underwriting performance for the states of Madhya Pradesh, West Bengal, Andhra Pradesh and Uttar Pradesh. These states give better return on investment.

### 7.1.6 Crop Level Capital Allocation Analysis

The analysis shows unprofitable underwriting in all the crops. It can be said that it is not profitable in general. The results of the analysis are summarized as follows:

- The analysis suggests maximum capital allocation to Ground Nut and Paddy followed by Cotton and Soyabean. Claim is very high for these crops.

- Paddy and Cotton are showing better return on investment in spite of having high claims.

- A comparative analysis shows better underwriting performance for Cotton, Sugarcane, Rape & Mustard, Bengal Gram, Castor etc. These crops give better return on investment

### 7.1.7 Underwriting Profitability Analysis and Impact of Reinsurance

Underwriting and financial analysis for the Kharif and Rabi portfolios show unprofitable underwriting. The study also reveals that Underwriting ratios (loss and combined) are showing significant improvement with the introduction of reinsurance treaties. The results are as under.

- The Ruin probabilities for these businesses are very high and Solvency margins are negative even after considering financial benefits such as surplus, govt. subsidy and investment. The Underwriting Profitability analysis reflects that AICI has been suffering from heavy losses in both form of business line.

- The analysis finds that the reinsurance treaties are able to enhance the performance.

- Financial results suggest good improvement in solvency margin and probability of ruin without considering government subsidy. In Stop loss and Quota share reinsurance, the results suggest significant improvement in the financial health of the business based on present underwriting practice.

- Underwriting results are improved further if Stop loss reinsurance is used along with Quota share reinsurance.

## 7.2 Results of Hypotheses Tested

1. The first hypothesis was that there is considerable degree of changes in the agricultural insurance scenario in India since the inception of Comprehensive Crop Insurance Scheme from the year 1985. The analysis recognizes that in spite of various drawbacks within the publicly administered system of CCIS and NAIS, the agricultural insurance in India has made big a stride so far as development of agricultural insurance in India is concerned. Therefore, the hypothesis is **accepted.**

2. The second hypothesis of the study was that the effect of liberalization on Indian agricultural insurance sector is positive. The study identifies that there has been very insignificant development in the private agricultural insurance sector in India and the overall impact of liberalization in agricultural insurance is very much unfounded. Under these circumstances the hypothesis is **rejected.**

3. The third hypothesis was that the degrees of correlation among the states are positive. The study reveals that the performances of all the states are not evenly correlated. Only few states are significantly correlated with each other. Therefore, the hypothesis is **rejected.**

4. The fourth hypothesis of the study was that the degrees of correlation among the crops are positive. The study shows that some of the crops are performing at danger level and only few crops are correlated with each other. So the hypothesis is **rejected.**

5. The fifth hypothesis was that there is equal quantum of risk associated with the portfolio of each state. The total study signifies that there exist heavy claim loss burden and they are distinctively varies from state to state. Therefore, the hypothesis is **rejected.**

6. The sixth hypothesis was that there is equal quantum of risk associated with the portfolio of each crop. The study concludes that like the state level analysis the crop portfolio should be distributed unevenly to cope with the claim loss burden of some specific crops. So the hypothesis is **rejected.**

7. The seventh and final hypothesis was that there is a tremendous impact on risk transfer strategy (Reinsurance) on the overall risk exposure of the Agricultural Insurance Company of India Ltd. The study reveals that both the Kharif and Rabi portfolios are unprofitable underwriting and underwriting ratios are showing significant improvement with the introduction of reinsurance treaties. Therefore, the hypothesis is **accepted.**

## 7.3 SUGGESTIONS AND RECOMMENDATIONS

### 7.3.1 Recommendations on the Analysis of CCIS and NAIS Programme

After extensive review the study recommends the following improvements in the product design so as to make crop insurance farmer friendly and meaningful:

1. **Reduction of insurance unit to the village panchayat level for major crops:** The National Agricultural Insurance Scheme is implemented on the basis of "Homogeneous area" approach and the area (insurance unit) at present is the Taluka/ Block or equivalent unit, in most instances. It is felt that lowering the Insurance Unit to Gram Panchayat will be a welcome move to reflect yield losses at a reasonable level.

2. **Fixation of premiums on actuarial basis:** There is a large element of subsidy with the prevailing premium rates. In order to make NAIS financially viable actuarial rates should be charged. Considering the current situation it can be said that the time is not yet ripe to charge actuarial rates from all sections for all crops. There is no denying the fact that eventually actuarial rates will have to be applied to most of the crops. However, a beginning can be made to charge such rates for non-food crops. The other debatable issue is the uniformity of premium rate for a given crop all over the country. As uncertainty and vulnerability varies from state to state and within the state. There is a scope for a risk weighted variable premium rate, especially for high value crops.

3. **Reassessment of Threshold Yield / Guaranteed Yield:** Presently Guaranteed Yield is the moving average yield of the preceding three years for rice and wheat, and five years for other crops, multiplied by the Level of Indemnity. The concept does not provide for adequate protection to farmers, especially in areas / crops with consecutive adverse seasonal conditions, pulling down the average yield. The study recommends a longer time series of 10 years in fixing Guaranteed Yield. This would reduce yearly coverage fluctuations, reduce the potential for adverse selection and avoid decline in farmers' satisfaction relating to inadequate coverage.

4. **Reconsideration of the role and allocation of Government subsidies:** Many industry representatives strongly claim that agricultural insurance can only be developed with government subsidies for premiums and operational expenses. Accordingly the Government plays three major roles through government subsidies viz., (a) Providing a premium subsidy directly to farmers, (b) Providing a subsidy to insurance companies to obtain reinsurance, and (c) Providing direct subsidies to insurance companies to settle the high claim costs. The India agricultural insurance markets as can be seen is burdened by inertia, lack of actuarial and agriculture specific knowledge, lack of information, and in some cases weak legal and regulatory frameworks. The present study recommends that government subsidy should be used in a systematic manner to develop a sustainable, broad-based and competitive agricultural insurance markets in India. Government subsidies and monies can and should be used to the following activities:

   - ❖ Promoting innovative products and their pilot testing
   - ❖ Training of staff in insurance companies (actuarial sciences, risk modeling, claim adjustments, analysis and familiarization with agricultural commodity markets)
   - ❖ Educating farmers on insurance products and contracts.
   - ❖ Purchasing, installing, and maintaining of weather stations
   - ❖ Hiring legal and financial sector consultants.
   - ❖ Providing assistance to the insurance industry to attract re-insurers.
   - ❖ Providing subsidies to insurance companies to purchase reinsurance
   - ❖ Acting as a co-reinsurer or direct reinsurer as a last resort

5. **Services to Non-Loanee farmers:** The awareness of the scheme is poor, partly due to lack of adequate localized servicing and substantially due to the lack of effective image building and awareness campaigns. For loanee farmers, with premium being deducted at the time of loan disbursement and claim settlements being credited to the farmer's loan account, the illiterate or poorly educated farmer is hardly aware of the scheme's existence, let alone its benefits. The poor and adverse participation of non loanee farmers is even worse. Hence, major pilot studies in this regard need to be conducted as an integral aspect of policy planning to ensure cost effectiveness and better penetration.

6. **On-account settlement of claims:** Claims' processing in NAIS begins only after the harvest of the crop. Further, claim payments have to wait for the results of CCEs and also for the release of requisite funds from the Centre and States. 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 case of adverse seasonal conditions, and to ensure that at least part of the likely claims receivable are paid to the farmer, before the end of the season, the study recommends that 'on-account' settlement of claims be done, without waiting for receipt of yield data, to an extent of 50 percent of likely claims, subject to adjustment against the claims assessed on a yield basis. This if implemented, would perhaps be a major benefit to farmers. Effectively, it would, make a scheme far more acceptable.

7. **Adoption of new Technologies:** The study proposes to extensive use of the following technologies that would make the design and monitoring of agricultural insurance contracts more cost effective and efficient.

   - ❖ Use of satellites, automatic weather stations, global positioning systems (GPS), would make the manual gathering and transcription of data less critical.
   - ❖ Remote Sensing Technology (RST) may provides insurers with tools like hazard mapping, crop health reports, acreage-sown confirmation, yield modeling etc.
   - ❖ Advance uses of optics and digital imaging may help to obtain processed, interpreted, and transmitted data with greater ease and speed.
   - ❖ Use of communication technology—the internet, broadband connections, wireless networks, etc.—may help to share the information more rapidly and easily.

8. **Scope for Outsourcing:** A related question is "outsourcing". It is important to move in this direction if the coverage has to be extended and costs have to be controlled. There are several organisations functioning at the district level which may qualify to undertake the "agency" function for AIC. There could be Krishi Vigyan Kendra, an agri clinic, a vibrant NGO or a private sector enterprise. Following LIC's example, AIC should also think in terms of involving private sector banks in the business of crop insurance.

### 7.3.2 Recommendations on Private Participations in Agricultural Insurance in India

The study identifies that there has been very insignificant development in the private agricultural insurance sector in India and the overall impact of liberalization in agricultural insurance is very much unfounded. Considering this problem the study proposes a Model of public and private participation in agricultural insurance in India. Important facets of the proposed model are as under.

- The study proposes modified USA Model of public and private participation. On the lines of USA model, the government through an exclusive technical agency, may get the premium rates worked out and offer the product to all insurers.

- Private Insurers should implement the product by enjoying the same level of support and subsidy from the Government.

- As a variation from the USA method, the Government should not provide reinsurance support and reimbursement of administrative and operating expenses, as these costs would be loaded in the actuarial rates.

- The model is suggested because the rating techniques and risk perceptions employed by each of the insurers could be different. Further, except AIC, no other insurer has access to yield database of all crops and areas, the main component for rating. The study further recommends for the creation of an exclusive technical agency with actuarial experts to generate premium rates.

- Banks and State machinery would have to continue their support in terms of delivery and yield estimation services, respectively. The multiple agencies based approach works efficiently at present.

- At the early stage private sector participation may be limited to certain crops/areas leaving major crops / states, with AIC. With experience and maturity in the market the entire program may be thrown open to all players.

### 7.3.3 Recommendations on State Correlation Analysis

Following are the recommendations on the State Correlation Analysis.

- As claims in Rajasthan has high positive correlation with Andhra Pradesh and Jharkhand so it is possible to formulate a claim reduction strategy which is common to Rajhasthan, Andhra Pradesh and Jharkhand.

- The above strategy is not expected to work very well for Karnataka and Orissa as claims in these two states are negatively correlated with Rajasthan.

- The insurance product designing team should keep this information in mind while designing products for individual states. States correlation analysis along with crops correlation analysis will help in creating less risky crop portfolio for a state.

### 7.3.4 Recommendations on Crop Correlation Analysis

The recommendations of crop correlation analysis are as under.

- Crop correlation analysis suggests that Cluster Bean is highly correlated with almost all the crops. And correlation is negative in most of the cases with very high combined ratio. This crop needs attention. Tailor made scheme should be offered for this crop.

- Black Gram shows opposite trend. Claim for this crop shows significantly positive correlation with Jowar, Maiz, Black Gram etc. So, similar products can be helpful.

- Ground Nut is showing zero correlation with all other crops. This means claim profile for this crop is totally different from the other crops. The same conclusion can be drawn for Green Gram. The combined ratio is very high for this crop. These crops need immediate attention. Present insurance schemes for these crops are not effective and profitable at all. AICI should carefully review the offering and come up with more profitable schemes.

### 7.3.5 Recommendations on State Level Capital Allocation Analysis

The study recommends the following modifications on the state level capital allocations of the AICI.

- ❖ The analysis suggests maximum capital allocation (to support losses) to Gujarat (about 45%) followed by Karnataka and Andhra Pradesh. High capital allocation to Gujarat is needed to support high claim in that State.

- ❖ Comparative analysis shows better underwriting performance for the states of Madhya Pradesh, West Bengal, Andhra Pradesh and Uttar Pradesh. These states give better return on investment. AICI should encourage underwriting in these states.

- ❖ Where as Jharkhand and Bihar can be tagged as high risk states. AICI should carefully review the offering and come up with more profitable schemes.

### 7.3.6 Recommendations on Crop Level Capital Allocation Analysis

The recommendations of crop level capital allocation analysis of the AICI are as under.

- ❖ The analysis suggests maximum capital allocation to Ground Nut and Paddy followed by Cotton and Soyabean. Claim is very high for these crops.

- ❖ A comparative analysis shows better underwriting performance for Cotton, Sugarcane, Rape & Mustard, Bengal Gram, Castor etc. AICI should explore these crops further. On the other hand Gram, Cluster bean, Black Gram, green gram, Groundnut etc can be tagged as high risk Crops.

- ❖ The Underwriting analysis shows unprofitable underwriting in all the crops. So it can be said that it is not profitable in general. AICI should immediately review and redesign the products and should be very careful while making underwriting decisions.

### 7.3.7 Recommendations on Profitability and Impact of Reinsurance Analysis

Underwriting and financial analysis for the Kharif and Rabi portfolios show unprofitable underwriting. The study also reveals that Underwriting ratios are showing significant improvement with the introduction of reinsurance treaties. The recommendations are as under.

- ❖ The study recommends that AICI should go for Stop loss and Quota share reinsurance together. It can help the AICI to reduce its probability of ruin and thus plays an important part in risk management and long term stability of financial systems.

- ❖ The study also recommends that AICI should consider catastrophe risks separately because AICI crop portfolio is very much vulnerable to event losses. This kind of losses can be reduced by purchasing Catastrophe bonds and Cat insurance. Catastrophe bonds are Risk-based securities that pay high interest rates and provide insurance companies with a form of reinsurance to pay losses from a catastrophe such as those caused by Flood, Draught etc.

### 7.3.8 General recommendations and suggestions for improvement.

Agricultural insurance schemes in India cover only about 10 per cent of sown area and have a high claims to premium ratio. The programme is also likely to suffer from problems of moral hazard because of inadequate monitoring and control. Agricultural insurance besides protecting farm income has a role to play in the development of the rural economy which will in turn strengthen the national economy. At the same time, it should be recognized that agriculture insurance is only one of several financial services. Insurance should not be seen or promoted as a solitary effort but as a component of services that need to be extended to the agricultural sector. General recommendations in this regards are suggested below.

1. **Establishment of Centre for Risk Management in Agriculture:** The study strongly recommends for creating integrated risk management systems that could help the farmers to manage the multiple risks in a coherent manner. To manage these risks it is required to develop a strong institutional system at community and local Government level. Tools and methods of integrated risk management should be mainstreamed into development planning through advocacy and capacity building programmes. To achieve these objectives, a uhique institution Center for Risk Management in Agriculture is proposed in public-private partnership. The Center should envision in playing a catalytic role to promote and deliver integrated risk management services to farming community.

2. **Adoption of improved agricultural extension service:** The cornerstone of an improved risk management strategy is the effective and improved agricultural extension service that helps farmers to educate themselves about risk management and to take individual on-farm actions to reduce vulnerability and mitigate risks. The study proposes for the adoption of following improved agricultural extension services.

   - ❖ Using of improved seed and animal breeds and planting on time.
   - ❖ Using of Integrated Pest Management whenever feasible.
   - ❖ Utilizing environmentally sound pesticides and herbicides.
   - ❖ Making greater use of drip irrigation.
   - ❖ Applying crop diversification and rotational cropping.

3. **Implementation of improved financial market instruments:** Farmers should be given following opportunities to avail formal financial instruments and marketing contracts that are within reach in order to reduce risk exposures.

   - ❖ Using of formal savings.
   - ❖ Using of futures, options, sales contracts, guaranteed marketing schemes.
   - ❖ Using of price support measures instruments like Minimum Support Price (MSP) and Market Intervention Scheme (MIS).
   - ❖ Using of Price Stabilization Fund.
   - ❖ Using of Credit Risk Fund.

4. **Creation of innovative Marketing & Distribution channels:** In addition to the existing distribution channels following approaches may be adopted to extend the agricultural insurance products to the small and marginal farmers of rural India more convenient and flexible manner.

   - ❖ Using the services of rural Post Offices.
   - ❖ Deploying existing network of Agents of General & Life Insurers.
   - ❖ Using a network of Agri-Input Suppliers

5. **Adoption of Improved Emergency Disaster Relief Systems:** For risks that are not covered by financial and market contracting instruments, such as severe earthquakes, massive volcanic eruptions, hurricanes or greater intensity, massive flooding etc, the farmer will need to depend on government emergency assistance. Following improved emergency disaster relief services may be extended to the farming community.

   - ❖ Using of Calamity Relief Fund
   - ❖ Non-reimbursable cash payments for immediate survival needs
   - ❖ Temporary housing and allowances for relocation if necessary
   - ❖ Distribution of in-kind materials
   - ❖ Refinancing of existing loans
   - ❖ Emergency low-interest loans for rebuilding and farm recovery

   The government, however, should condition the level of assistance on demonstrated prudence and diligence. The adoption of good management practices, avoidance of excessive risk, and the use of formal financial instruments whenever feasible should be implemented prior to the event.

6. **Implementation of an Integrated Risk Management Strategy:** An integrated risk management strategy should be followed wherein a series of coordinated and reinforcing activities are pursued. The government, international reinsurance companies, national insurance companies, insurance supervisors, and farmers have to work together. In fact, agricultural insurance can be most effective if it is conceived and implemented as a part of this broader framework.

## 7.4 CONCLUSIONS

Agriculture is directly linked to many facets of sustainable development including poverty eradication, sustainable consumption and production, management of natural resources, energy, freshwater, health, education, trade and market access, as well as technology transfer and capacity building. Agriculture is an integral part of the general development system, serving the system as a whole, and being served by it.

The present study shows that agricultural risks are exacerbated by a variety of factors. These factors not only endanger the farmer's livelihood and incomes but also undermine the viability of the agriculture sector and its potential to become a part of the solution to the problem of endemic poverty of the farmers and the agricultural labor. Risk management in agriculture is of crucial importance in the investment and financing decisions of farmers in developing countries and in transition economies.

More and more policymakers and farmers recognize the need for more modern risk management systems in order to stabilize incomes, prevent asset depletion, and to enhance competitiveness. Agricultural insurance is a complex and difficult product to deliver in a sustainable manner. There are some limitations and inherent constraints that prevent a rapid growth of agricultural insurance business. In India, the agricultural insurance market is still emerging but there are encouraging signs. Within a short period of its existence AICI has performed creditably in this difficult area. It has also shown dynamism in experimenting with new methods and new approaches. The rural markets are still virgin territories to a great extent and offer exciting opportunities for insurance companies. The surest path to success is to judge and measure the requirements of the people correctly and offer a scheme that they would be able to afford.

There is also an urgent need to enter into tie-ups or understandings with private agencies to ensure the success of the schemes. Agricultural insurance can be improved by transiting to actuarial rates and increasing the accuracy and timeliness of crop estimation methods, possibly through the use of new technologies. The need of the hour is to offer innovative policies that have explicit benefits for the people to observe, understand and measure. At the same time it should appear as an acceptable investment to the rural people.

It should be recognized that agricultural insurance itself cannot increase productivity or be a source of financing but it can certainly play a role in enhancing both. Agricultural insurance schemes are more complex than other types of insurance and should not be seen or promoted as a solitary effort but as a component of services that need to be extended to the agricultural sector.

Therefore to transform agricultural insurance business into a successful and fruitful business to insurers as well as to the farmers agricultural insurance in India should be considered as a multi-agency programme. The central government, state governments, National Bank for Agriculture and Rural Development (NABARD), General Insurance Corporation (GIC), Commercial Banks and Cooperative Banks all have some roles to play. If the objective of a significant increase in the coverage and hassle free implementation is to be achieved, the role and responsibility of each major stakeholder will have to be clarified, and wherever necessary, strengthened.

The action plan to strengthen agriculture in India needs to be on domestic reforms through reduction of government intervention in the market economy but playing major role as evaluator and implementation of the policies, increased investment and prioritizing the area to invest parallel action plans in this direction are needed in research to increase the trustworthiness of risk management in agriculture in India. Risk management in agriculture should address yield, price, credit, income or weather related uncertainties among others. Organizing farmers through a federation of self-help groups with government, banks and other stakeholders playing a pro-active role would be welcome. Besides, public institutions, there is need for a greater involvement from the civil society.

Risk management in agricultural is a must for the sustenance of agriculture in India irrespective of the nature and magnitude of the problems associated with it. Hence it is appropriate to conclude that risk management in agricultural in India should be considered as social obligation rather than business opportunity.