

Piloting Mutual Crop Income Insurance with Small Rainfed Farmers

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Introduction:

One cannot overstate the contribution of rainfed agriculture to the Indian economy. Within the agricultural sector, rainfed agriculture accounts for more than 60% of the total area cultivated and 40% of total production. In terms of output, 80 percent of the coarse cereals, 50 percent of maize, 65 percent of gram and tuar, 81 percent of groundnut, 88 percent of soyabean and more than half of the cotton output of the country, is accounted for by the rainfed districts. Nearly 50 percent of the total rural workforce and 60 percent of cattle heads of the country are located in the rainfed districts (Shah et al., 1998). As the growth of irrigated agriculture has reached a plateau and the ground water sources are dwindling very fast, future lies with rainfed agriculture. More significantly agricultural development in the rainfed areas is seen by a wide spectrum of people as the route for equitable development and as a solution to the current imbalance in development.

But the rainfed farmers face various kinds of risk in their livelihood. These risks can be categorized as human or personal risk, asset risk, production or yield risk, price risk, institutional risk and financial risk. Among these, the production risk is the predominant one and it includes loss due to weather risks, pest and diseases, animals and disasters like Tsunami. In rainfed agriculture weather risks play an important role, as more than 60 to 80% of the yield is decided by the adequate quantity and proper distribution of rainfall. Further the risk due to long dry spell and drought are recurrent. Hess estimated that 49 percent drop in rainfall levels for the month of July during the 2002/2003 growing season, caused a 3.1 percent decline in agricultural GDP of India (Hess 2003). The consequences of recurrent risks are having far reaching effects on the farming families like lack of credit availability, migration, compulsion to change their vocation and in extreme cases suicide.

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The traditional coping mechanisms used by farmers include accumulation of buffer stocks as precautionary savings, varying cropping practices (planting different crops and varieties, planting in different fields and staggered over time, intercropping and relying on low risk inputs), diversification of income sources/ enterprises, distress sale of farm assets, removing children from school, migration and borrowing. These measures are not sufficient to manage the various consequences of production risk and they are not available to all. As the State intervention in terms of crop insurance and disaster relief have run into various kinds of problems making them ineffective, this critical problem of rainfed farmers remains unaddressed to a large extent.

This article is written primarily to share DHAN Foundation's experience of piloting mutual crop income insurance, first of its kind in India, for addressing the production/yield and price risks of rainfed farmers. The following sessions cover the background of the pilot, process involved, outcome, learning, issues and concerns and the way forward.

Background:

Mutual Crop Income Insurance (MCII) for groundnut crop was piloted in Nattarampalli, a block in Vellore district of Tamil Nadu, India. DHAN Foundation has been implementing Rainfed Farming Development Theme in this location for the past five years and currently working with around 2500 farmers. These farmers are organized into 147 groups, ten Watershed Associations (WAs) and one Coordination Committee (CC). Deficit rainfall insurance, a kind of weather insurance, was piloted in this location for three years in collaboration with ICICI Lombard. Even after improving the product in many ways it was found unsatisfactory to the farmers as it was difficult to design a product that fully reflects the relationship between crop performance and rainfall. Besides the inadequacies of the weather insurance product, the other main problem faced was externalizing the issue of yield loss by the farmers and looking forward for some compensation irrespective of the crop loss situation, when insured through insurance company. This was mainly due to inadequate insurance education. Due to these issues other effective alternatives were sought for addressing yield and price risks. The search

was for an alternative insurance mechanism that not only manages risk but also result in motivating the farming community to look for all means of preventing the risks and lead to empowerment of local farmers in the long term. At that point in time Eureko Re, a Netherlands based reinsurance company came forward to support mutuality based crop income insurance. Netherlands is known for mutual insurance and mutual crop insurance products like AVIPOL, Potato Pol were in vogue there for more than a decade and found to be effective. Our earlier experience with mutual deficit rainfall insurance and mutual pest insurance at Thirumangalam taluk of Madurai district was also positive. So it was decided to pilot MCII. MCII is a product in which the farmers are indemnified based on actual losses, with loss assessment and price monitoring done by older and wiser farmers. As the participating farmers were organized into organisations of their own at various levels and have been involved in various farming related interventions for the past four years, they had the necessary social capital for piloting Mutual Crop Insurance (MCI). The spatial correlated nature of rainfed agriculture risk, which makes it difficult to insure, was addressed through pooling of risks related to mutual crop income insurance product at Nattarampalli, mutual rainfall insurance products at Thirumangalam and Mudukulathur and mutual pest insurance product at Thirumangalam at People Mutuals², all four having different risk profiles. Further this pilot has become feasible due to training and reinsurance³ support by People Mutuals, technical support given by Mutual Insurance Association of Netherlands (MIAN) and financial support and back up guarantee support given by Eureko Re.

Process followed:

A Mutual Insurance Committee (MIC) was formed by selecting two to three wiser farmers from each watershed. These farmers were selected based on their track record of involvement in community activities and knowledge of groundnut cultivation. They were exposed to the mutual life and mediclaim insurance products practiced by Kadamalai Kalanjia Vattara Sangam, a federation of women SHGs promoted by DHAN Foundation. A training was conducted by People Mutuals to orient them on the concept of mutual

² People Mutuals is an organization that supports insurance activities of various federations promoted by DHAN Foundation.

³ Twelve percent of total premium collected was remitted to People Mutuals for reinsurance

insurance. To design the MCII product, the data on past experience of rainfed groundnut cultivation in Nattarampalli was collected from a group of farmers. This included frequency, levels and causes of loss, variations across the location and cost of cultivation. The data revealed that individual farmers experience a loss on average twice in five years. Losses range between Rs. 525 and Rs. 2,500 per acre, with an average of Rs. 1,500 per acre. Usually once in five years a moderate loss is suffered, which means below average, and once in five years farmers are confronted with a severe loss, which is above average. Individual farmer's area of cultivation ranges from 0.25 to 4 acres, with an average of 1 acre per farmer. MIAN has developed a mutual insurance product using this data. This product was discussed in detail with the MIC and they customized the same product in terms of sum insured and premium per acre. It was decided to go for the groundnut mutual income insurance policy with Rs. 2000 as sum insured and Rs. 500 as premium per acre. Out of Rs. 500, the risk premium was Rs. 468 and the administrative cost was Rs. 32. The design of the product was such that cost of cultivation was considered as the bench mark for compensation and not the expected income, to make the product affordable to farmers. MIC also evolved the norms and methods for implementing this mutual insurance product for groundnut in three meetings. Concerted efforts were taken to avoid the conventional problems of crop insurance (i.e.) adverse selection, moral hazard and delayed compensation in MCI. Moral hazard risk was addressed by introducing retention, requiring farmers to pay a pre-determined percentage of their loss themselves. The extent of retention of losses by the farmer herself/himself was 35% (i.e.) Rs. 1000 out of total expected loss of Rs. 3000 per acre. Further, the organization of the claims assessment process was also designed in such a way to ensure a further reduction of moral hazard risk through abandoning fraudulent farmers and those who have not taken preventive measures. The insured farmers own the mutual pool and because of that they were very critical to what type of farmers was accepted as members of the insurance pool. This environment of social control and familiarity of colleague farmers with production circumstances have resulted in avoiding farms that repeatedly face loss thereby addressing adverse selection. Because each MIC member was responsible for assessing claim in his/her own area he/she would be aware of the production history of the insured person and plot and will therefore be able to provide a

good judgement of crop damage quickly. Further as the premium was with MIC they were favourably placed to give compensation at the earliest. The norm evolved for implementing MCII given in box no. 1 reflects this in detail. A total of 204 farmers were enrolled for the product, out of which 14 farmers were rejected based on the norms. A total area of 74.1 acres belonging to 190 farmers was insured and the total sum insured was Rs.148,260/-

Box No. 1: Norms evolved for Mutual Groundnut Insurance :

- All the farmers enrolling into the scheme have to specify the plot of land insured with survey number.
- The team of MIC member, professional and associate would visit each farm to identify the insured plot of land and to take basic details of the groundnut crop. A separate notebook would be used to record the particulars of crop.
- If the sowing is taken up in shaded area, such area to be deleted from total area covered.
- If low seed rate was practiced, seed rate based area to be taken for coverage.
- All insured farmers should inform the MIC before one week of intended harvest. The plot harvested without giving information would be removed from coverage.
- Just before harvest each farm would be visited by the same team to assess the yield. A sample from the farm would be taken to assess the yield of the insured plot of land.
- Compensation will not be given for human negligence, which will be identified during periodical visit.
 - If there is yield loss due to heavy weed infestation the plot will be removed from coverage.
 - If there is yield loss due to damage by wild animals the plot will be removed from coverage.
- Sample yield measurement would be taken in all plots of the insured land.
- Sample yield measurement would be done using cycle tyre. Sample yield measurement would be taken near four corners of the plot at a distance of 10 feet from each corner and also in the centre.
- Litre measure would be used to measure the sample harvest. Crown filling method to be followed for measurement.
- The conversion ratio is 12 litres = one vallam; 42 vallams = one putti.
- One eighth of volume of the fresh produce to be deducted for wages.
- Fifteen vallams to be deducted for half acre seed material.
- The value of groundnut plant residue will not be taken for calculating total income.
- Any one of the two MIC members who are considered as an expert on groundnut will also accompany the team for harvest measurement.
- So by the end of the season there will be information regarding the actual yield of each insured plot of land and the reasons for the same.
- The current year farm gate price will be used for calculating value of the produce. Average price for the season would be found after taking into account high and low prices in the season.
- If the quality of produce is poor, pertinent price would be used.

Outcome:

Out of the total 190 farmers selected for coverage, 68 farmers have sown in the early part of the season, 113 in the fag end of the season and 9 in both the seasons. The yield of early sown crop was good and it was considered the best in the last five years. The late sown crop has not fared well particularly due to 35 days dry spell during pod formation phase and the yield varied from bad to worst. The quality of harvest was also below the mark thereby fetching lower farm gate prices. At the end of the season, the MIC decided that the average price per *putti*⁴ of first season crop as Rs. 2250 and that of second season as Rs. 1400. Using the yield data arrived from harvest sample and the average price, compensation was arrived. Compensation below Rs. 100 was taken as Rs. 100 and all compensation figures were rounded to nearest multiple of ten. If a farmer has cultivated in two seasons, each crop was taken as a separate policy. Last year compensation was received by 64 farmers to the extent of Rs. 21250.

Learning from piloting MCII:

Piloting MCII has resulted in rich learning on designing and implementing mutual crop insurance and on various aspects of groundnut cultivation in Nattarampalli. They are listed below.

- The team came to know in person the various issues faced by groundnut farmers like late onset of monsoon, long dryspell within the crop period, wild animal attack, attack by rats, death of young plants, viral disease, stem rot and white grub menace. For the first time in the last five years, the team came to know that viral disease and white grub are causing significant damage to the crops.
- The yield varied widely even in the case of fields sown on the same week, mainly due to the attention given by the farmer in terms of number of ploughing (particularly summer ploughing), FYM application, fertilizer application, seed quality and sowing in time. This observation validates the idea that even if there is enough rain, what the rainfed farmer does before sowing decides the major portion of yield.

⁴ A *putti* is a local volume measure which is approximately equal to 120 kg of dried groundnut pods.

- Presence of *Bellari kuthi* variety, which is a semi spreading type, was found in the location. It has advantages like more ability to withstand drought, better palatability, the plant residue not wasted by incessant rains during harvesting and kernels will not germinate in the land itself if harvesting is delayed, over that of TMV 7, the ruling variety. The only problem is lower oil content. After due consultation with farmers, this variety can be promoted on a significant scale in the next year.
- Even though members were given training on the importance of earthing-up in the first two years of the theme, almost none of the insured members practiced earthing-up mainly because second weeding is not practiced. This could have significant negative influence on the yield.
- Participation in implementation and ownership of the product by the MIC members was remarkable. They were very instrumental in convincing and explaining to the insured members. The concept that this insurance product is based on actual losses and involving in this product is like doing saving, that will come handy when actual loss occurs, was well explained by the MIC members.
- The capacity of the MIC members to handle the issue of crop loss has significantly improved.
- The attention of the insured members on their crop has increased because of their participation in MCII, particularly due to the field visits by the MIC members and staffs. This increase in attention has potential to stimulate timely action and so better crop performance.
- This initiative has resulted in expansion of insurability in terms of size of farm. Even 0.12 acre farm was enrolled for MCII.
- The influence of season on yield was very much demonstrated in 2007 and so 15th Adi was kept as closing date for groundnut sowing season for the next year, so that the crops sown after that date will not be covered by MCII.

Issues and concerns:

- The administrative cost of MCII was substantially high ranging from 20 to 25 % of the sum insured. But this can be reduced to 10 to 12 %, if the area covered per farmer

can be increased by two to threefold. Even then the administrative cost would be substantially higher. Annexure 1 gives details of cost of implementing MCII.

- In farmers' opinion, the yield of early sown crop is always better than the late sown crop. If it is validated by large number of farmers, there is need to differentiation of premium based on sowing date. Or otherwise early sown farmers will be at a disadvantage when compared to the late sown peers.
- Even with in a single village there is variation across farmers in terms of sowing date. It is to be explored why certain farmers sow late when their neighbours are sowing in time and what can be done to make them capitalize rains in the early part of the season.
- There is lack of enabling environment for MCII, like reinsurance support.

Way forward:

- As field visits done as part of insurance work can result in production enhancement, part of the cost of implementing MCII can be seen as an investment for production improvement and can be funded through other means of public investment. This step would substantially reduce the actual premium.
- All measures need to be taken to reduce the administrative cost. Learning from existing practitioners and improving the capacity of MIC members can be of help in reducing the cost.
- The product can be revised after three years based on experience.
- As similar MCI products can be potential tool to address issues like drought and climate change in a proactive manner and as it is an obligation of the State to support families affected by these issues, State need to come forward to create necessary enabling environment. Creating necessary enabling environment includes supporting pilots for evolving product design for various crops in different regions, reinsurance and insurance literacy, promoting the evolved products and bringing in necessary regulations like that of Philippines.

References:

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Annexure 1 - Cost of implementation of MCI

Sl.No	Particulars	Amount (Rs.)
	For one unit of 200 farmers	
1	Field visit @ 1000 km two wheeler use in two months (8 to 10 farmers can be covered in a day and so 2 months needed for minimum of two visits) @ of Rs. 2.25 per km	4500
2	Honorarium to MCI memebtrs for crop assessment @ Rs. 100 per day for 50 days	5000
3	Cost of collecting premium, remitting to Coordination committee, maintenance of accounts - roughly	6000
4	Meeting cost @ Rs. 20 for each MCI member (one member for 20 insured farmers) and for 10 members for 4 meetings	800
5	Salary to Insurance associate @ 5000 per month for 3 months	15000
6	TA to insurance associate besides 4500 @ 300 per month	900
7	Professional cost - 4 days for 4 meetings and another 11 days- a total of 15 days @ 500 per day	7500
8	Photo copy @ Rs 5 per insured	1000
9	Other miscellaneous items	2500
	Total	43200
	Risk premium for 200 persons @ half acre for each insured @ 468 per acre	46800
	Share of premium to sum insured	0.45
	Share of management cost to sum insured	0.216
	This can change positively if each farmer is made to insure one acre; then the share of management cost to sum insured is	0.108