Government vs Weather
The True Story of Crop Insurance in India

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Abstract

The government of India started offering widespread crop in insurance in 1985, with the Comprehensive Crop Insurance Scheme. The CCIS has been replaced by the National Agriculture Insurance Scheme. The NAIS is considered to be an improvement over the CCIS, but it has simply replaced one flawed scheme with another slightly less flawed one. Government crop insurance has proved to be a failure worldwide, but India seems to have ignored both its own failure and the failure of other countries. The main flaws of the NAIS are the goal of financial viability, its mandatory nature, its failure to address adverse selection, arbitrary premiums, and the area approach. Internationally, private crop insurance is not highly developed but varied successful private programs do exist. Even if India withdrew from crop insurance schemes, it could still support farmers through an income guarantee or investment in infrastructure.

Farmers face floods, drought, pests, disease, and a plethora of other natural disasters. The weather is their greatest adversary, something that can never be controlled by man. Yet, farming has been in existence since the caveman turned his spear in for a hoe. Farming has come a long way since then; nevertheless; farmers are still at the mercy of the heavens. Crop insurance is a risk management tool that farmers can use in today's agricultural world. For a premium, farmers can pass their weather-related risk onto a third party. Farmers in India have been subjected to publicly administered insurance schemes since 1972. Every scheme has been flawed, yet the government of India is still attempting to strengthen agriculture by protecting its farmers from the weather.

India's failure at providing public crop insurance does not stand alone. In both the developing and developed world, governments' crop insurance schemes have run at huge losses while not delivering an effective product. The inadequacy of such schemes is a well-established fact. On the other hand, private insurance does exist in situations where it is feasible and no subsidized insurance is offered. The farmers stand to benefit even more from private insurance when there are several competitors.

The government's most current crop insurance scheme, the National Agriculture Insurance Scheme, has only been implemented since the Rabi season of 1999-2000. Within five years the NAIS is supposed to become financially sustainable, charging farmers premiums based on actuarial rates and administrative costs. A data based analysis of the NAIS is not possible, as data for only two seasons exists. However, shortcomings of previous crop insurance schemes, general trends of agricultural insurance in other countries, and inherent theoretical flaws in the NAIS all point towards disaster.

The main flaws of the NAIS can be summarized as follows:
- Lofty goal of financial viability
- Mandatory for loanee farmers
- Adverse selection, in the case of non-loanee farmers
- Premiums do not equal Risk level
- The area approach

Show me the money!

The Comprehensive Crop Insurance Scheme, predecessor to the NAIS, was implemented for 15 years, from Kharif 1985 to Kharif 1999. A Ministry of Agriculture Publication, *Background Note on Crop Insurance*, states that:

The Scheme had a positive and stabilizing influence on agricultural production and productivity in respect of crops insured and is a popular program particularly in those areas of certain States where the risk factor in agriculture is relatively higher. This "positive" and "stabilizing" influence came at a large cost. The claims percentage (percentage of claims to premiums) was 572%. The loss between premiums paid and insurance claims amounted to 184,446 lakhs, exclusive of administrative costs (five to seven percent typically). Only four of the 22 participating states had insurance charges greater than claims.

The CCIS only charged premiums of 1-2% percent, while claims made were approximately 9% of the sum insured. Factoring in administrative costs, participating farmers as a whole would have had to pay approximately 15% of the sum insured without the subsidy. The NAIS has premiums of 1.5 to 3.5, varying from crop to crop. Although premiums are higher than those of previous schemes, based on past experience, they are still not high enough to cover claims.

Farmers growing commercial or horticultural crops covered under the NAIS are supposed to pay actuarial rates. For all crops, the NAIS is supposed to become financially viable within five years, with yearly increases in premiums based on administrative costs and actuarial rates. If the NAIS becomes financially viable, private crop insurance would also be feasible. The effect of the opening of insurance markets in India is still to be seen. However, if the government stays in the crop insurance market private companies will be discouraged from entry, especially considering the state controls on almost every aspect of agriculture. Government controls range from setting input prices to output prices, all of which distort agricultural production. Therefore, any reform in crop insurance will be most effective when accompanied by overall reform in the agricultural sector.

Who is insured?

The CCIS was mandatory for loanee farmers growing covered crops and insured 100% of the crop loan. The NAIS is also mandatory for loanee farmers growing covered crops in implementing states. The indemnity is based upon the value of the threshold level for each crop grown in a set area. The threshold yield is based upon a moving average of the yield over past five years. Anyone remotely familiar with agriculture would understand that five years yield data does not accurately represent complex weather patterns. Additionally, non-loanee farmers are allowed to participate in the NAIS, but up to this point very few, except in Maharashtra, have chosen to do so.

The CCIS was often criticized as being "bank insurance," and the NAIS is no better on this count. Producers taking out loans have no choice--if the state authorities decide to implement the NAIS the producer must purchase insurance. Insurance is not the only risk-management tool available to farmers in India. Diversification, fragmented land holding, off-farm employment, and savings are just of few of the options. Requiring loanee farmers to prove their ability to manage risk is good business--forcing one option upon them is not. Farmers with adequate risk management capabilities should not be forced to purchase crop insurance in order to receive a loan.

Twenty-two states / union territories participated in the CCIS, while only 16 are participating in the NAIS. Punjab and Haryana are two of the leading agricultural states, but have yet to participate in the CCIS or NAIS. Agriculture in Punjab and Haryana is less risky than that of other states. However, one cannot assume that no demand exists for crop insurance in these states, as no cropping system is without risk. Three levels of indemnity do exist within the NAIS, but three risk levels can in no way address the diverse climate and agriculture in India. If premiums were based upon true risk levels, farmers in any agricultural system could avail of crop insurance if it fit their risk-management needs. If a farmer faces such high risks that he cannot survive without subsidized insurance the cropping system is not sustainable

Adverse selection can be observed when a group of farmers is offered crop insurance at the same premium, as is often the case in government administered / subsidized crop insurance. The worst farmers will avail of the insurance, making claims unreasonably high. Publicly administered crop insurance schemes worldwide have been largely unsuccessful partially due to adverse selection. In India adverse selection can clearly be seen at the state level, as Punjab and Haryana do not participate in the NAIS. If adverse selection were unavoidable, the entire insurance sector would not exist. History tells us that private insurance has been better able to address the problem of adverse selection. The NAIS makes insurance mandatory for loanee farmers, so adverse selection is more apparent at the state level. Non-loanee farmers have no obligation to purchase crop insurance and will most likely follow the pattern of adverse selection. If the NAIS can become financially viable, premiums would have to continually rise due to adverse selection.

A yield "guarantee"

Farmers insured under the NAIS are not guaranteed indemnity for their yield losses. The uncertainty that even insured farmers face is due to claims / indemnity being based upon the 'area approach.' The area approach was considered the only feasible way to administer the CCIS. As expressed in a Ministry of Agriculture publication an 'individual' crop insurance scheme is not possible in India for several reasons, including "prohibitive costs due to huge requirement of men and material" and "disputes over fixing guaranteed yield and loss assessment." The NAIS is being operated under the area-approach currently. In a few selected districts the “individual” approach is being implemented on an experimental basis. Considering past experience, the individual approach is not likely to suddenly become a feasible option.

The “area approach” is operated under the results of crop-cutting experiments. Each year a set number of plots with the insured crops for a certain “area” are used as the indicators of an individual farmer’s losses within that area. The unit area can be as large as a Block / Taluka or as small as 4-5 villages (Gram Panchayat level). The states implementing the NAIS are expected to reach the Gram Panchayat level of implementation within three years. Insured farmers receive indemnity based upon the difference between the threshold yield and the yield of the crop-cutting experiments in their area. Crop yields naturally vary even over small areas and very localized natural calamities could occur. Situations easily exist in which farmers would not be compensated for their loss under the NAIS or farmers without insurable losses would receive payments anyway. Loanee farmers forced to purchase crop insurance may not receive payments for crop losses. The only attractive feature of the area approach is that it reduces moral hazard. Moral hazard occurs when an individual farmer purposely allows his yield to be less in order to collect insurance premiums. The prevention of moral hazard does not redeem the area approach from its inefficiency.

The only way?

The NAIS has several shortcomings and its success is at best questionable. However, the government could easily argue that farmers would otherwise remain uninsured and that private insurance would not enter the market. Options to the NAIS do exist that would help farmers, especially in the long run.

The government has admitted that it lacks the resources to administer a proper insurance scheme at the individual level. For various reasons a second-rate scheme is deemed as necessary. A better option would be an income guarantee not based upon yield, crop grown, or farm size. Considering the various subsidies that are given to farmers through various means--fertilizers, seed, price supports, etc.--an income guarantee should not be an unfeasible option. Farmers need to be able to respond to market forces and develop their own risk-management tools.

History's lessons

Economists have proven that farmers stand to benefit from crop insurance, even unsubsidized crop insurance. However, private markets for crop insurance worldwide are not highly developed, except for in a few cases. Skees (2000) documents several reasons for the underdevelopment of private crop insurance. Subsidized crop insurance crowds out private insurers and stifles innovation.

Farmers are considered to know their risks better than the government or the private sector, so knowledge of agriculture is essential for insurers. The need for information increases the cost of insurance. Agricultural risk is unique--natural disasters can be widespread and are neither completely independent nor correlated. Studies have indicated that farmers / decision makers tend to underestimate the risk of damage by natural causes.

In the United States crop insurance is subsidized by the government but administered through private companies. Hail insurance is not subsidized, so most insurers offer hail insurance along with the subsidized government policies. Rates are based upon the history of crop losses due to hail in the county and competition also plays a factor in keeping rates low. Adverse selection is not an issue because companies set rates higher for high-risk areas. Moral hazard is also less of a problem, as hail is a natural event. The multiple-peril insurance subsidized by the government is considered to be too expensive if offered without subsidies. A crop insurance agent from Midwest estimated that over half of the farmers who purchase subsidized multi-peril crop insurance also purchase hail insurance. The model used for hail insurance can also be used for other natural disasters, like drought, flood, and wind. The current subsidized insurance program administered through private companies is relatively new. This program is considered to be a significant improvement over the previous unpopular programs administered by the government, although it is not flawless. An option for the Indian government is to administer its crop insurance program through private companies and gradually phase out the subsidy. This option could best be used for a “transition” period. Initially subsidizing premium rates for crop insurance offered through private companies would give the private sector incentive to enter the agricultural sector and time to gain experience before the withdrawal of subsidies.

Crop insurance in South Africa was started in 1929 when a group of farmers started a pool scheme. Subsidized multi-peril insurance was offered for some time, but for the past fifteen years no subsidies have been given. Hail is the main peril covered and many other perils are also covered. Historical data and past claims play a role in determining the premiums and damage assessment is the biggest challenge for crop insurers. Crops at different stages are affected differently by hail, making knowledge essential for insurers. There are several players and new ones are continuously targeting this market. Several crops are covered, including maize, wheat, sunflowers, and citrus fruits. The South Africa case illustrates how private individuals can offer crop insurance that is beneficial to farmers and how crop insurance can still exist after subsidies are withdrawn.

In Canada crop insurance was administered through an area approach, similar to that of India. Research from 1995 by Turvey and Islam indicated that the area approach was not only inequitable but also inefficient. The empirical research from 537 farms confirmed the belief that individual crop insurance is better in terms of risk reduction, but premiums would also be higher. The area approach in Canada was concluded to be inequitable, as benefits were not fairly distributed. The most benefits to be accrued would be by the farmers with yields closest to the average.

The crop insurance in Canada was voluntary at this time, unlike the NAIS. Adverse selection would be less of a problem at the individual level when insurance is mandatory. Cross-subsidization would be more of a problem, because the better farmers having to purchase insurance would indirectly subsidize the worse farmers.

A 1997 study by Sakurai and Reardon indicated that there was an unmet demand for formal drought insurance in Burkina Faso. Burkina Faso is a part of the West African Semi-Arid Tropics (WASAT) and experiences frequent drought. Much of the farmland in India is in the semi-arid tropics. The demand for drought insurance was found to decrease in households with higher overall incomes or more self-insurance. The authors suggest that crop insurance alone is not sufficient; that policy and programs that supports self-insurance, such as micro credit or increase of off-farm employment, are also important. Perhaps in India public funds and government policy would be better aimed at strengthening self-insurance mechanisms, while leaving crop insurance to the private sector.

Moving forward

The value of crop insurance, private or subsidized, is much debated by academics and policy makers. The concept of index-based contracts for natural disasters in place of crop insurance has been recently introduced. Farmers would purchase a contract and be compensated when a certain event or natural disaster occurs. Rainfall contracts are one example. Rain is relatively simple to monitor and the history of rainfall in most areas is well known. Farmers would be compensated if the rainfall in an area would go below a set level, with varying levels of payment depending upon the level of rainfall. The faults of this approach lie in its similarity to the area approach. However, the benefits are significant, including reduction of moral hazard, adverse selection, and transaction costs (Skees 2000). This alternate model could be adopted as an improvement over the NAIS but would still deter the private sector from entry into crop insurance.

Private crop insurance can be observed worldwide, even though it is not highly developed. Private crop insurance has tended to cover more specific risks and not cover management-related risks. These insurance policies offered must fit needs of farmers and be beneficial--otherwise they would not exist. This is not necessarily the case with government sponsored crop insurance. Private insurance works in a wide range of countries for a wide range of agricultural activities. Insurance programs vary from tropical plantation crops in Latin America to tree crops in the USA. (Gudger 1991)

The NAIS will not fix the ills of Indian agriculture, nor will any other grand insurance scheme planned by the authorities. Private crop insurance may or may not develop if all government crop insurance is abolished. Abandoning insurance schemes does not mean abandoning farmers. Farmers could be given an income guarantee not based on yield, price, or area planted. Even now an income insurance scheme is being considered in India. Investment in agricultural infrastructure/research would be more equitable as opposed to subsidies to crop insurance and may yield more long-term benefits. Farmers deserve the chance to farm on their own. They know the weather better than anyone—it is their greatest foe and their greatest friend. The government should stop trying to play God and help farmers help themselves.

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