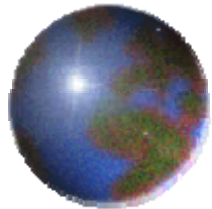




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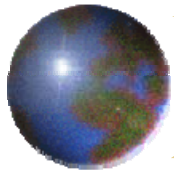
Necessary Conditions for Successful Crop Insurance in China

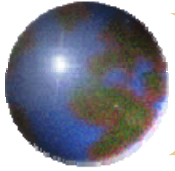
Beijing, China, June 22, 2009

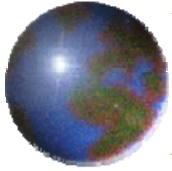
Dr. Milton Boyd, Professor & Economist

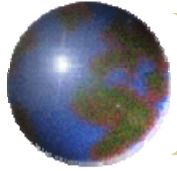
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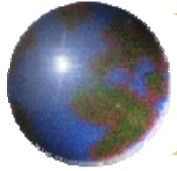






*Outline...for crop insurance to work,
the following conditions are needed:*

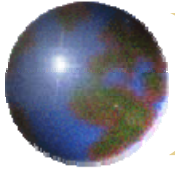
1. Enough Demand for Crop Insurance.
2. Ability and Willingness of Insurer to Pay Farmers for Claims (losses).
3. Ability to Meet Insurability Conditions (conditions needed by insurance firm to be willing to sell insurance to farmer).
4. Need Low Administration Costs.



1. Enough Demand for Crop Insurance

- i) *Farmers must be sufficiently risk averse. Otherwise they would not be interested in purchasing insurance.*

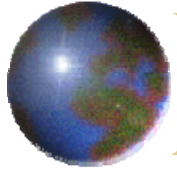
- ii) *The policy must have the desired features that farmers prefer. e.g. cover right crops, pay for claims/losses quickly. Otherwise farmers would use alternative risk management strategies.*



- iii) *Farmer losses must be of large enough size and variability* (yield variation) to be of concern. Otherwise farmers would have no need to address risk or insurance considerations.

- iv) *The insurance premium must be affordable.* Otherwise farmers would chose other risk management strategies.

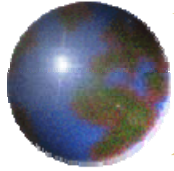
- v) *There must not be better risk management substitutes/strategies available e.g. other gov't programs* .Otherwise farmers would choose these substitutes instead of purchasing crop insurance.



2. Need Ability and Willingness of Insurer to Pay Customers (farmers) for Claims

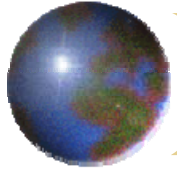
If the insurance company *cannot or will not* properly pay claims to the customer, the company would fail.

i) *Company Cannot Pay.* A large loss event (e.g. no rain, crop failure in many provinces) could cause the insurance firm to fail because it would not have sufficient reserves. The purchase of reinsurance by the firm may help avoid this problem.



- ii) *Unwilling to pay customers the full amount owed on their claims.* So customers may take their business elsewhere and refuse to deal with the firm, causing it to fail.

Note: In a few cases in China, crop insurers have charged premiums that were too low, and when faced with large claims, they were unable to pay the customers. *Need good regulation, strong company \$ reserves.*

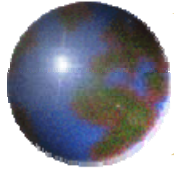


3. Need Ability to Meet Insurability Conditions

The insurability conditions, listed below, refer to conditions needed by an insurance firm in order for it to be *willing to sell crop insurance to a farmer*.

a) *Losses must be Random*. This is because if losses were predictable, then farmers would only buy insurance when a loss (e.g. frost) was expected, and the insurer would fail.

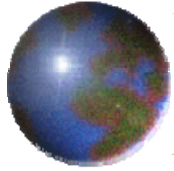
b) *Ability to Price Risks Correctly Among Customers*. The Insurer must be able to charge different premiums for different risk levels, e.g. charge higher premiums for higher risk crops, higher risk farmers. *No adverse selection*.



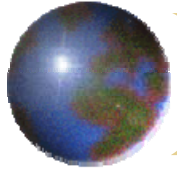
- c) *Ability to Compute Premiums.* To compute premiums, the insurer must know the approximate distribution of crop losses, and this requires past data. It requires being able to identify and measure risks, in terms of size and frequency of crop losses.

- d) *Limited Liability.* The insurer cannot accept unlimited liability (crop losses), as this could cause the firm to fail. Sometimes an insurer may purchase reinsurance to avoid this situation.

- e) *Economically Feasible Premiums.* The insurance premium charged to customers must be greater than the cost, e.g. profitable. In other words, the benefit of risk aversion to the customer must be greater than the cost of holding the risk (absorbing the losses).



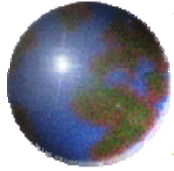
- f) *Ability to Prevent Carelessness and Fraud by Customers.* If customers are careless or dishonest (e.g. don't take proper care of crop), this may cause excessive losses for the insurance firm, and may cause it to fail. This problem, called moral hazard, may be dealt with by adding a surcharge on premiums for those customers who have high claims (losses).
- g) *Uncorrelated Losses Allowing Pooling of Risks.* If losses are highly correlated across individual customers, or geographic regions, the insurance company may be unable to properly diversify and pool the risks. So it cannot sufficiently reduce its risks. Reinsurance purchases by the company may help solve this problem.



4. Need Low Administration Costs

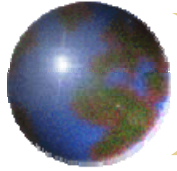
Low administration costs are needed in order to make premiums affordable. An administration cost of 10 -15 percent of premiums, or less, is likely considered cost efficient for crop insurance in countries with larger farm size such as Canada.

In contrast, an administration cost of 50 percent of premiums would be considered very high, and likely would be unsustainable in many cases.



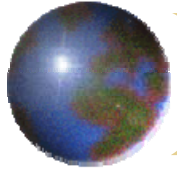
Administration Costs May be High for a Number of Reasons:

- a) *Poorly Defined Insurance Policy.* This could lead to many costly disputes over crop losses (insurance claims) between the farmer and the insurer. This could require considerable time and/or legal action costs by the insurer to resolve them. Need clear, understood insurance policy.
- b) *Low Participation Rate.* If few farmers are purchasing the insurance, this may be because the policy is poorly designed, and so this increases admin cost. Or may need gov't subsidy – the case in most countries.
- c) *Small Farm Size.* This means that premium collection and loss measurement could be expensive e.g. China, Japan, Korea. Could collect premiums from farmers as a group.



Summary...Crop insurance should work if:

- 1) Enough Demand by Farmers.
- 2) Ability and Willingness of Insurer to Pay Farmers for Claims (losses).
- 3) Ability to Meet Insurability Conditions.
- 4) Low Administration Costs.



.....*Thank you!* 谢谢!