PRESENT FRAMEWORK OF AGRICULTURAL INSURANCE

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Abstract: The international agricultural insurance market has an important dimension. The experience of economically developed countries revealed the fact that without a stable development of agricultural insurances, there is no chance for high performance agriculture. This will require the establishment of a framework for responding to severe systemic events affecting agricultural production, and establishing an appropriate regulatory environment to foster private sector innovation and investment in services for less catastrophic events. During the last few years, at the international level, a variety of new financial mechanisms present the capacity of solving many issues related to the traditional projection of agricultural insurances. New instruments operate based on the configuration of the insurance indemnity payment, thus it will be paid when it reaches a certain level determined by statistic calculations and designed as the “index”.

Key words: agricultural insurance, all-risk, multi-peril, weather-based index insurance, area-based index insurance

Risk is an unavoidable but manageable element in the business. Concern for risks that stifle investment and contribute to vulnerability of the rural poor is a driving force behind various types of agricultural insurance (typically “crop insurance”). Insuring small-scale farmers against crop losses to adverse weather or other hazards has attracted public sector involvement in the provision of agricultural insurance in many countries. With few exceptions, such interventions have encountered severe problems owing to high administrative costs, moral hazard, and adverse selection. Government interventions should be aimed at improving the accessibility and quality of private sector insurance. This will require the establishment of a framework for responding to severe systemic events affecting agricultural production, and establishing an appropriate regulatory environment to foster private sector innovation and investment in services for less catastrophic events.

Agricultural insurance is a financial tool to transfer production risk associated with farming to a third party via payment of a premium that reflects the true long-term cost of the insurer assuming those risks. Past public sector interventions to provide insurance and enable the poor to cope in times of hardship typically have failed. Government response in times of severe calamity has been ad hoc and has lacked precise criteria for what “triggers” an insurance payment, thus leading to high potential for political interference and reduced opportunity to obtain reinsurance. As a result, comprehensive publicly supported crop insurance programs have been disastrous, being both ineffective and fiscally burdensome. They have involved heavy subsidization of
premiums, large delivery and service costs, and high aggregate losses. To be profitable, the ratio of average administrative costs plus average insurance payouts to the average premiums paid must be less than one. However, for most countries the ratio has far exceeded one, indicating that the programs have been unsustainable without heavy subsidization.

Traditional publicly supported crop insurance is all-risk or multi-peril, covering either all the supposed production risks or a very broad spectrum of those risks. All-risk insurance usually involves payments to the grower as compensation for any shortfall when yield declines below a level set in the policy. In some instances, this has encouraged inappropriate use of insurance and has led to excessive risk taking or moral hazard, such as growing crops in high-risk regions, thus increasing farmers’ exposure to future losses. Assumption by the public sector of massive insurance losses in turn reduces opportunities to participate in broader reinsurance markets. The ad-hoc nature of government policy has frequently been coupled with an ineffective and uncertain regulatory framework that increases uncertainty for private sector providers.

**Policy and implementation issues**

Agricultural risks vary in terms of severity and frequency. For the more severe and less frequent events (for example, intense and widespread flooding, prolonged drought), markets typically fail to provide adequate insurance services because of limited credible long-term statistical information, an inability to reinsure on international markets, and the possibility of having to make large payments in years of catastrophic loss (especially in the early years of the program). Because of this market failure (undersupplied risk management services for catastrophic events), the private sector is also likely to fail to provide services for the less severe, more frequent disruptive events (such as localized drought, pest outbreak) that services would otherwise be provided for. When it does, services often bypass the poor or smaller farmers. Thus there is a role for the public sector to intervene (at least initially) in the area of catastrophic risk management, as well as facilitating private sector service provision for more frequent, statistically documented disasters that they are better able to insure against. The following characteristics distinguish these various kinds of risks, and potential problems:

**Distorted incentives.** When insurers know that government will automatically cover most losses, the incentive to pursue sound insurance practices when assessing losses is reduced. Insurers may even collude with farmers in filing exaggerated or falsified claims.

**Asymmetry of information.** Successful insurance programs require that the insurer has adequate information about the nature of risks being insured. However, this is very difficult for farm-level yield insurance where farmers will always know more about their potential crop yields than any insurer.

**Adverse selection.** Only those who are more prone to risk will purchase public crop insurance, posing a challenge to the viability of an insurer and initiating a cycle of losses. Conversely, the private sector could leave the “bad” risks to the government.

**Administrative costs.** Providing services to small-scale farmers can raise costs, as data for individual farm-yield based insurance are deficient, and monitoring and inspection costs are high.
Moral hazard. Insurance payout based on individual low crop yields as opposed to the causes of reduced crop yields leads to moral hazard - when a farmer’s own behavior or management negatively influences crop yield.

Recommendations for practitioners

The overall objective for agricultural insurance should be a private sector-led and demand-oriented system in which farmers (including smallholders and the landless) can access (1) services supplied by the private sector and (2) insurance products for mainly less systemic and more independent risks, at a premium that reflects the true long-term cost of assuming those risks. Given this, and given the market failure associated with private sector supply, public sector involvement is important but should be limited to establishing a favorable environment for private sector initiative, establishing mechanisms for management of catastrophic risk that the private sector is unable to offer insurance against, and building the capacity of the private sector. Good practice for establishing private sector-led insurance is still evolving, but important implementation issues include:

Public sector initiation of agriculture risk management services. A critical public sector priority is to address large systemic risks that affect agricultural production and allow the private sector to develop insurance products for less severe events and for individual, independent farm risks. Large systemic risks must then be identified, and appropriate insurance mechanisms to manage these risks where markets fail to do so must be developed. Essential to public intervention in this area is making the government’s role explicit and transparent. An unambiguous threshold to trigger government payout (identifying what will and will not be covered and to what degree) must be specified. This trigger must be quantifiable, and ideally it can be measured by an independent, competent, and credible third party. Farmers’ participation in publicly supported schemes should be voluntary, the service provider should purchase reinsurance on international markets where possible, and administrative costs must be controlled.

Data collection and actuarial modeling. In designing insurance products for any type of risk, insurers (both public and private) must understand the relevant statistical properties. This requires both credible long-term statistical information and actuarial models to define the relevant risk probabilities and to predict the likelihood of various events. Various indices (for example, area rainfall or soil moisture indexes) may be particularly attractive for their practicality and cost effectiveness.

Using weather-based index and area-based yield contracts to insure against natural disasters offers increased affordability and accessibility of insurance services for the rural poor. Because triggers can be verified independently, vulnerability to political interference and manipulation of farm losses is reduced. It is practical to implement and has low administrative and transaction costs, so the private sector can provide it with little or no government subsidies.

Weather-based index insurance makes payments proportional to the difference of a measurable weather event (rainfall, temperature) from a certain trigger, as measured at regional weather stations. Area-based index insurance makes payments proportional to the decline of area yields below a certain trigger at the county or district level. For each of these, contracts are written against specific perils/events (area-yield loss, drought, or flood) defined and recorded at a regional level (local weather station). Insurance is sold in standard units (for example, 10€ or 100 payouts), with a standard
contract or certificate for each unit purchased. The premium rate is the same for all buyers, who all receive the same indemnity if the insured event occurs. Buyers are free to purchase as many units of the insurance as they wish. The insurance is written against the average yield for a region (county/district), and a payment is made when the measured regional yield falls below a defined limit (say 80 percent of normal).

An important area of public sector support can be the development of information sources such as risk maps that improve the institutional capacity of both public and private sector providers to identify and analyze risk. This information can form a common foundation upon which the transparent identification and pricing of risk (premium rates) can be based. Donors can support both the development of information systems and of the capacity of institutions (such as the ministry of agriculture) to build databases that can overcome information-related constraints to private sector participation.

*Creating a favorable regulatory environment.* To encourage private sector initiative, the policy and regulatory environment must be deemed by all stakeholders as fair, credible, stable, and enforceable. Toward this end, donors can contribute useful policy advice and capacity building support.

*Educating stakeholders.* Education of stakeholders is important if farmers are to understand the benefits of insuring against certain events. Workshops, information packages, media, and other mechanisms are needed to explain the characteristics of insurance schemes and the different opportunities available. Further, technical assistance should be provided to both public and private sector suppliers to ensure that the needs of producers (particularly the most vulnerable) are met. Such assistance might be best provided through cofinancing for business service providers.

*Develop effective financial systems.* Generally, when the poor do not have access to credit, there is less incentive and capacity to secure insurance and pay up-front premiums. Development of financial markets should be promoted where possible to facilitate saving and borrowing and complement the insurance schemes that are established. The ability of resource-poor farmers to access these services should be at the forefront of public sector involvement. This will also contribute to improving access to funds required for making up-front margin deposits on futures and options contracts for managing price risk. Linking finance to index-based insurance is an innovative approach that has emerged from recent work.

**References**