The present technical brief summarizes some of FAO’s experience working with crop insurance during the past years. It targets development practitioners that are not specialized in the subject have a growing interest in it.

Crop insurance is one of the most often quoted tools for agricultural risk management. However, it is only one of several tools available to mitigate risks. It is almost invariably an adjunct to a whole set of risk management measures of which adequate farm management practices constitute an important element. And the sustained availability of crop insurance is based on cost-effectiveness for both the farmer and the potential insurance providers in addressing agricultural risk.

Disasters, which may cause heavy losses to farmers, cannot always be prevented, but losses can be mitigated. Crop insurance is geared to covering losses from adverse weather and similar events beyond the control of growers.
Insurance does not eliminate risk nor directly increase a grower’s income, but through better risk management, growers are better able to adopt more productive systems that can improve their welfare. Insurance providers spread the risk among all clients by using insurance premiums to compensate the alternating indemnities that occur over time. This allows risks to the grower’s income to be better managed. The risk can be spread across an industry or an economy through time, which, in the case of international reinsurance, is extended to the international sphere.

An insurance indemnity only becomes payable in the event of a claim covered by the policy in force. Premiums paid must cover several areas of cost in addition to that of paying indemnities. Most policies incorporate an element of risk sharing with the insurance buyer by means of a deductible, which amounts to the percentage of the loss borne entirely by the insured. Crop insurance programmes must lay the foundation for a sustainable risk management service.

The business of insurance

There are mainly three parameters that characterize the business of insurance. The first is that crop insurance is a marketable product. Users must find it economically feasible to pay for it, given their income, and suppliers will offer insurance only if they find a way to deliver the product at a price that covers their costs and obtain competitive returns.

The second parameter is that insurance plays a partial role in farm risk management. Agricultural risk has many dimensions and can be reduced in several ways, such as using sustainable farming practices and having access to other types of financial services such as credit and savings.

The third parameter is that effective insurance policies can change over time, given that those factors affecting farming systems are dynamic, such as climate and agricultural prices. Therefore, the design of insurance solutions is an equally dynamic field of research and development.

Innovations

From the many types of existing insurance products, two are showing a greater degree of innovation: those based on insuring a level of crop revenue, and those where insurable damage is determined on the basis of an index derived from data external to the insured farm.

Crop revenue insurance

This insurance product is designed to meet any remaining shortfall in revenue from a predefined level of crop sales. Crop revenue insurance products essentially combine production and price risk, which is a determinant of gross revenue from a given crop. Under normal supply/demand conditions, a production shortfall might be expected to result in a rise in price. To some extent, such a rise will cancel out the financial loss for the grower who suffers a production shortfall, but the reduction in overall supply implies a sufficient rise in price in the market.

The extent to which this type of insurance product could apply to developing countries will primarily depend on the development of local crop futures markets. Given the advantages to the grower and to the insurer, it is likely to grow in importance; however, for smaller crop areas, as with yield-based insurance, it will tend to have a high administrative cost per unit of value.

Index insurance

With an index policy, historical meteorological and production data are used to determine an index that serves to predict the timing and value of losses suffered by the insured client. Once the index surpasses a predefined threshold, it automatically triggers indemnity payments. This has the advantage of reducing delivery costs, because damage does not
need to be verified, and the index is neither controlled by the insurer nor the insured.

This innovation still depends on the availability of a reliable and frequent compilation of data, which is still a challenge in developing countries.

Despite the paucity of experience with index insurance, there is a high level of interest in both development and insurance circles in this product for developing countries. Significant efforts are being made to better adapt this insurance product to the local context and a changing climate patterns.

**Insurance administration**

There are several stages in insurance management. The overriding aim in the design of administrative structures and procedures is to lay a foundation for minimizing costs. Since the potential clientele comprises small-scale and often widely dispersed farmers, costs can easily escalate to the point of non-viability unless special care is taken. The new insurance products mentioned above offer much scope for further lowering the costs of administering a financial risk management mechanism.

**Market identification**

Buying insurance increases the upfront costs for a farmer. Therefore, its benefits must be clear, which constitutes the basis of a successful positioning of any insurance product. Insurance providers need to collect information about their potential farmer clients, not only to assess the expected level of indemnity payments, but also to assess whether premiums would be acceptable to them given their income opportunities. Also, an efficient distribution outlet for the insurance product is crucial to reduce delivery costs.

**Product development**

Once the administrative business structure is in place, attention must be given to developing a product or line of products to meet the identified demand. Here, it is necessary to determine the point at which insurance could have the most economic impact on and contribute to growers’ risk management strategies.

Product development is a highly skilled task, requiring detailed knowledge of farming and the principles and operational imperatives of insurance. Since it is an expensive process, international agencies can often assist through direct partnership in product design or in training existing insurance staff.

**Setting indemnity and premium levels: deductibles**

In standard, traditional insurance, the basic issue to be addressed is whether the insurance is meant to substitute for farm income in the event of a loss, or whether the indemnity would merely cover the cost of inputs lost due to crop damage. The second alternative is certainly the easier and least costly because the level of overall coverage would be significantly less. With index insurance, the choice would be more flexible, since an insured individual could choose the level of coverage based on the divergence with a predefined index value.

An actuarial balance is vital between premium and indemnity levels, which should be continually checked to ensure the financial sustainability of the insurance programme and its ability to meet commitments to insured growers. A key issue is the value of the deductible that applies. It is usually determined by how costly it is to verify the insured loss. Generally, the lower the deductible, the greater the premium.

Insurance products in agriculture are seldom launched on the basis of all the data that an insurer would wish to have in order to estimate premiums that meet expected indemnity liabilities. Experience must be gained during the early years of an insurance programme during which adjustments can be made to the indemnity and premium levels, and also to the percentage of deductible applied.

**Collecting premiums and handling claims**

Since the main objective is to keep costs as low as possible, there is a strong incentive to build linkages with providers of services to the farming sector. Perhaps the most obvious linkage is between the insurer and input service providers, processors or extension offices. A commercial agreement between the insurers and these service providers could enable farmers to pay premiums and file claims in the same place where they periodically buy inputs, sell their crops or request extension services. This reduces insurance delivery costs and farmers’ transactions costs.

**Reinsurance**

When the total exposure to risk presents a hazard beyond the prudent limit for an insurance company, this company may purchase insurance from another company. i.e. reinsurance. This has the advantage of protecting an insurance company from catastrophic events affecting its portfolio. The reinsurance company would have a widely diversified transnational portfolio and could pool the risk of several insurance companies.

**Government and private sector roles**

Governments have an important role to play in fostering greater availability of crop insurance, especially in the
developing world. Most governments have a strong interest in risk management in agriculture for reasons of productivity and the well-being of rural populations. Therefore, some governments are active not only in public policy design, but also in determining crop insurance product feasibility and possibly its promotion, even perhaps, participating financially.

This dual parentage of crop insurance can lead to tensions, especially concerning premium setting and claims handling, where experience has shown that undue and inappropriate political influence on an insurer can be highly damaging.

Strong linkages with international re-insurers at an early stage of the crop insurance development process can ensure not only technical advice, but also the necessary adherence to the correct application of premium-setting procedures and claims settlement.

**RECOMMENDED READINGS**

