



**AGRICULTURAL INSURANCE IN DEVELOPING COUNTRIES**

**A WAY FORWARD**

**BY.**

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Madrid (Spain) 13th & 14th May 2002



**International Conferencia**  
**"Agricultura Insurance and Revenue Coverage"**

**13 - 14 May 2002**

**Madrid, Spain**

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## AGRICULTURAL INSURANCE IN DEVELOPING COUNTRIES

### A WAY FORWARD

#### Background

Activities of the Food and Agriculture Organization of the United Nations (FAO) in agricultural insurance are the responsibility of the rural finance group in the Marketing and Rural Finance Service (AGSM). With the retirement of Richard Roberts, Chief of AGSM, remaining staff have no specific technical competence in agricultural insurance. Instead, it is envisaged to strengthen in the near future the overall risk management capabilities of the rural finance staff, as these skills are considered crucial elements for strengthening the investment decisions of farmers in developing countries and in transition economies and in selecting the most suitable way of financing different types of agricultural investments.

Considering the scarcity of viable agricultural insurance programmes in developing countries FAO has convened in the past three expert consultations on crop insurance in Rome. A first expert consultation on Crop Insurance: Its Place in Development, was held on 16-18 September 1986; a second consultation on: Crop Insurance Support to Primary Industry Development, from 18-20 April 1989; and a Third Expert Consultation on Crop Insurance, from 5-7 May, 1992. In addition to the consultation reports and specific regional, country and project reports on crop insurance the following bibliography, books and manuals have been published:

- Bibliography on Agricultural Insurance, 1989
- FAO Crop Insurance Compendium, 1991 (available in English and Spanish)
- Strategies for Crop Insurance Planning, FAO Agricultural Services Bulletin 86, Rome, 1991 (in English, French and Spanish)
- Glossary of Terms for Agricultural Insurance and Rural Finance, FAO Agricultural Services Bulletin 100, Rome, 1992 (in English, French and Spanish)
- FAO Loss Adjustment Training Modules Volumes 1 and 2, Rome, 1991 (available in English and Spanish).

Moreover through small Technical Cooperation Projects (TCP) financed by FAO amounting to a few hundred thousand dollars, AGSM has assisted a number of countries such as the Dominican Republic, Iran, Nigeria, Syria and Uruguay in the design, planning and initiation of actual agricultural insurance operations, preferably working together with existing insurance companies. Project activities are carried out normally by recruiting international insurance consultants for instance from AGROSEGURO of Spain and SOREMA of France who work closely together with local staff, the sponsoring of staff exchange visits (for instance, officers from Nigeria and Iran visited the United States and Australia) and the organization of specific



training activities, in particular, in the use of standardised loss adjustment procedures.

## **FAO Views on Agricultural Insurance**

The FAO position on agricultural insurance in developing countries, in particular, for small farmers is based on two considerations. These are:

1. *Limited role of agricultural insurance:* Agricultural insurance can play only a limited role in managing the risks related with farming, as basic risk management measures in agriculture rest with other disciplines such as plant and animal breeding, crop and animal husbandry practices, diversification of farm enterprises as well as taking precautionary prevention measures against adverse weather events such as using mulching and shelter belts and, perhaps most important of all, securing access to supplementary irrigation facilities.

2. *The applicability of agricultural insurance:* the applicability of insurance in any given situation is based on the consideration whether it is the most cost-effective means of addressing a given risk. In fact, although agricultural insurance, as in other productive sectors, is almost invariably a useful adjunct to a whole set of the risk management measures of which adequate farm management practices constitute an important element, the acid test of operating a viable insurance programme depends on the cost/benefit ratio.

It is worth at this point to introduce the example of drought. In recent years the El Niño effect has resulted in heavy losses from drought in many parts of the world. In these circumstances, there may be a high expectation on the part of policy makers to look for insurance as a remedy to resolve this serious problem. However, viable commercial insurance operates by means of the pooling independent risks ("the law of the large numbers") and insurance can only spread risk – geographically or over time. In the long run, however, paid insurance premiums must be able to cover the losses plus the administrative costs of the insurance programme. The problem of recent droughts is that they usually affect a wide area, while timewise they are often concentrated in one year after the other. This would make actuarially determined insurance premiums which aim to cover drought so expensive that this class of insurance product becomes futile for clients.

## **Design and Planning Issues of Agricultural Insurance in Developing Countries**

The FAO publication on "Strategies for Crop Insurance Planning" lists a number of crucial issues which need to be taken into consideration when designing and planning insurance activities in developing countries. These include:

1. *Public versus Private Sector:* Should agricultural insurance programmes be operated and insurance products be provided by governmental bodies or by the private sector (or by parastatal insurers who operate on private sector principles and



who are autonomous in their decision taking)? Empirical evidence is mixed on this issue, but most insurance expertise is found in the private sector and existing insurers have already in place the required infrastructure. Moreover, most governments with the notable exception of USA are not in a position to finance heavy subsidies for agricultural insurance.

2. *Yield Insurance versus Coverage against Specified Perils*: In case of crop yield or harvest insurance (multi-peril and all risk cover) a grower is indemnified, if his crop production falls below the equivalent of a certain guaranteed yield per unit area. This approach has often led to serious moral hazard problems, if the insured farmer does not act in good faith and fails to apply good crop husbandry and farm management practices. The alternative is coverage against actual damage caused by specific named perils such as fire, windstorm, excessive rain coupled with the inability to harvest (e.g. in the case of growing of tomatoes for industrial processing and vegetables for export), hail and frost (as exists in Syria). The emphasis in viable crop insurance programmes is on a limited range (4-6) of clearly-specified risks with the amount insured usually linked to the investments made in growing the crop. The covered perils should clearly address the main concerns of the growers, while as experience is gained it is always possible to expand the range of perils (and crops) involved in the programme.

3. *Voluntary versus compulsory farmer participation*: In order to avoid adverse selection of insured clients and to reduce high administration costs, an insurance scheme targeted at small farmers should be compulsory. At the same time, incentives should be built-in in order to counter moral hazard problems on the part of the clients. Above all, however, the "threshold of insurability" should be recognised, indicating the availability of a minimum required scale of operations, husbandry practices, management skills and own amounts of financial resources, below which no viable insurance contract can be administered. This means practically that crop insurance is really only appropriate for commercial farming rather than for subsistence farmers and food crops, while the administration costs of an insurance scheme can be reduced by linking insurance to bank lending and/or marketing services. On the other hand, it is possible to run a voluntary insurance scheme for larger farmers, but even then the coverage should be large enough to afford adequate field supervision in order to check adverse selection of clients.

4. *Procedures for setting indemnity and premium levels*: Reliance on meteorological data alone is insufficient, as the more needed information is actual crop losses following adverse weather events. Insurers must establish a means of collecting and analysing data of this type over a sufficient long period to permit the prediction of the likelihood of adverse events with a certain degree of certainty. This is essential in order to arrive at actuarially-determined insurance premiums and indemnities in the interests both of sound underwriting and good public relations with clients. Indemnity levels can be set at a level equal to but no more than the actual value of the insured object just before the loss. This means that for many crops an escalating indemnity is established as the growing season progresses.



5. *Collection of premiums and payment of indemnities*: establish, wherever possible, linkages with organisations which have already ongoing financial dealings with farmers such as agricultural development banks and other financial institutions or non-financial intermediaries like input dealers, traders, and agribusiness companies. In this way, the administration costs of insurance can be reduced.

6. *Use of adequate loss adjustment mechanisms*: There are no shortcuts in the use of sound loss adjustment practices and there must be available sufficient and good field staff. Possible linkages with agro-processors and other crop buyers can assist in achieving accuracy in crop loss assessment. The design of appropriate loss procedures and the training of field assessors is vital for viable crop insurance schemes. In case large numbers of small farmers are insured, loss assessment procedures need to be simplified, while due consideration should be given to the required skill levels of potentially large numbers of field assessors.

7. *Financing insurance programmes*: lack of adequate self-finance and continuing dependence on government funding can compromise a crop insurance programme to the point where its operational autonomy and effectiveness and financial sustainability are adversely affected. One method of ensuring that sufficient financial resources are built up is to design and initiate with a modest and carefully designed programme, relate it with the operations of an existing private insurer and to expand it gradually with the gaining of positive experiences. Moreover, a crop insurance programme which conveys clear risk management benefits to farmers is more likely to become self-funding than a programme which pays insufficient attention to this key factor.

8. *Reserves and Reinsurance*: The requirement for reserves and the difficulty of buying reinsurance mean that new crop insurance programmes normally have to start small, possibly with a government or parent insurance company providing the necessary reserve fund. Close contacts should be maintained with reinsurers in order to shape programmes in such a form that reinsurance, which is essential as the insurance portfolio grows, can be readily arranged. In the early stages of an insurance programme, reinsurance will tend towards a quota share with a gradual move to an excess of loss cover as experience is gained.

9. *Response to real risk management needs of farmers*: There is a close connection between effective public relations and a satisfactory feedback of information from insured farmers and other involved stakeholders. There must be clear evidence of the willingness of the insurer to take farmer interests fully into account on an ongoing basis. The inverse is also applicable: farmer clients should be made aware of the potential as well as the constraints of insurance and appropriate publicity material and client education programmes need to be available. This will help to avoid a situation where unrealistic expectations are nurtured by farmers regarding the benefits that an insurance programme can provide.



## **Agricultural Insurance: The Way Forward**

Related with the subject matter of this conference of "Agricultural Insurance and Revenue Coverage" and based on the importance that the Rural Finance Group of FAO attaches to both risk management and the access of rural people in developing countries to appropriate financial services at reduced costs, it is worthwhile:

- to examine what is the effective demand, in particular, among small farmers in developing countries for a combination of a safety net against yield risk and a price risk coverage. Such a type of revenue coverage, as is used in the USA, presents a type of product that is becoming increasingly popular in developed agricultural economies. The idea of assisting commodity producers in developing countries with market-based risk management instruments and the concept of protecting a floor price level through the purchase of put options is currently examined for a number of commodities by the International Task Force on Commodity Price Risk Management of which FAO is a member.
- to stress the potential for involving viable local agricultural and rural banks as well as other non-financial intermediaries like agricultural input suppliers, traders, agribusiness companies, farmer producers organizations and mutual insurance associations as local transmission mechanisms in a proposed revenue coverage system. FAO works already since long with regional networks of agricultural and rural financial institutions and they may act as intermediary organizations.

In the remaining part of this presentation concise information will be given on the International Task Force on commodity price risk management and on a case study carried out for small coffee farmers in Southern Mexico.

### **International Task Force on Commodity Risk Management**

International commodity prices are highly volatile and the inability to manage these risks in developing countries has serious impacts both at macro (destabilization of real exchange rates and an unstable economic environment and policies) and micro (affecting negatively farmers investment decisions leading to low farm productivity and incomes) level. There is an increasing recognition that large-scale direct government interventions in markets during past years have had adverse effects and, in any way, these interventions are usually financially not sustainable. With the adoption of liberalization policies over the past years the burden of price risks in many countries has been shifted from governments to producers and consumers and new approaches to market-based risk management mechanisms should be tried out and, if found positive, made widely known.

An International Task Force (ITF) on Commodity Risk Management in developing countries was convened by the World Bank in January 1999 with participation of both public and private sector institutions. Representatives are from international and bilateral development organizations and initiatives (UNCTAD, FAO, the Common Fund for Commodities, etc.), various international commodity bodies, commodity



traders, private sector insurance and risk management brokers, banks, universities and researchers and others. The staff of the Commodity Risk Management Group of the WB constitutes the Secretariat and funding has been received from the Government of the Netherlands, the European Union, other international organizations and governments as well as from private sector sources (Louis Dreyfus, Cargill, ACE). The ITF is keen to build partnerships with insurers, trading houses, national and regional development banks, International Commodity Bodies, the International Cooperative Alliance, NGOs, etc. ITF Quarterly Newsletters are published and periodic meetings are convened with a next one to be hosted by the African Development Bank in Abidjan, Côte d'Ivoire on 27-28 June, 2002.

The proposal of the ITF is to develop market-based instruments that can reduce price uncertainty and, in particular, consists of a market-based commodity price insurance mechanism, which in its simplest form provides a price floor for producers and exporters (buying a put option) and a price ceiling for consumers and importers (call option). The coverage refers primarily to agricultural commodities such as coffee, cocoa, cotton, palm oil, rubber and sugar, but it can include also other products as long as a clear link to poverty reduction can be demonstrated (e.g. mineral export commodities such as copper). During the first phase until December 2001 eight case studies have been carried out: Belize (sugar), Egypt (cotton), Fiji (sugar), Ghana (cocoa), Mexico (coffee), Nicaragua (coffee), Thailand (palm oil) and Uganda (coffee), while for the second phase studies are scheduled for El Salvador (coffee), Mongolia (copper), Tanzania (coffee) and Thailand (rubber). Phase 3 will lay the basis for implementing price insurance transactions.

The aims of the ITF are (i) to reduce the price uncertainty faced by smallholders and thus to increase their incomes and (ii) to provide capacity building and staff training to so-called "Local Transmission Mechanisms" (like banks, farmers organizations, mutual insurance associations). These LTMs are crucial, because they can aggregate/pool the price insurance demand of small farmers, they have better access to existing commodity risk management brokers and they are able to reduce the involved insurance transaction costs. Local agricultural and rural banks for instance which have provided credit to farmers will have a clear interest in supporting price insurance, as this may lead to better loan repayments.

### **Mexico Coffee Case Study**

Although coffee in Mexico accounts for only 0.2 percent of the GDP and 0.7 percent of total exports, after horticulture it constitutes the second largest share of agricultural exports (around 20% with US\$ 700-800 million annual export revenues) during most of the 1990s. Coffee is grown on about 760,000 hectares by some 282,000 producers (over 3 million people depend on coffee revenues), out of which an estimated 180,00 are indigenous small coffee farmers (with farms of 2-5 hectares) who grow coffee using mainly traditional technologies. Total coffee production has been relatively stable over the last 10 years and ranges between 4 and 6 million of 60 kg bags. Coffee is grown, in particular, in the four poorer southern states



(Chiapas, Oaxaca, Puebla and Veracruz which account for some 89% of the total coffee production) and where the per capita gross internal product ranges between 43 to 67% of Mexico's average income per capita.

Between May 2000 and November 2001 coffee prices have declined from US 94 to US 48 cents per lb. which is well below the costs of production for most Mexican coffee farmers and this is causing a crisis situation in the Mexican coffee sector. Recovery of 2000/01 farmer loans has drastically declined and banks have been unwilling to finance the 2001/02 coffee campaign. In 2001 the government has implemented a special programme to support the coffee sector by providing small farmer income support and creating a special fund to support the national coffee consumption in Mexico as well as through existing support programmes such as Alianza para el Campo with a focus on increasing the value added of coffee in the processing and marketing chain. For 2002 an allocation of total budget funds of some US\$ 270 million has been proposed to the Parliament to be used for various measures such as the creation of a stabilization fund (US\$ 150 million) for compensating coffee farmers when prices would fall below US\$ 70 per quintal (100lbs), improving the coffee production statistics by undertaking a new coffee census thus enabling a better targeting of coffee farmers who most need support, establishing an emergency programme for the harvesting of the 2001/02 coffee production, retaining low grade coffee, and starting a campaign to promote increased domestic coffee consumption.

Coffee farmers in Mexico face both production (yield) risks and price risks. According to information from AGROASEMEX, the state agricultural insurance company, the main cause of coffee yield risk is frost (in particular in Puebla) and, in addition, there is some damage due to excess humidity, strong winds and pest/diseases. Almost all crop insurance is linked to credit and the rural development bank, BANRURAL, has recently begun requiring crop insurance and also FIRA, the Trust Fund for Agriculture of the Bank of Mexico, provides strong incentives to retail banks for requiring crop insurance coverage from their clients. Crop insurance is sold directly by AGROASEMEX as well as through farmer mutual insurance funds ("fondos de aseguramiento). In Mexico there is thus some experience with coffee insurance (a total insured surface of about 20,000 ha. or less than 3% of the total coffee area), in particular among more commercially-oriented farmers who are paying premiums of around 4.5%. The premiums paid by individual farmers have covered the paid indemnities over the period 1994-2000. On the other hand, in the last two years mutual insurance funds are increasingly set up, particularly for smaller farmers with premiums as high as 8.5%. Loss ratios of the farmer mutual funds are almost down to zero, which indicates that they have had hardly any significant losses.

Following the liberalization of the coffee sector in Mexico in 1993 world coffee price fluctuations are transmitted directly to the farmers (producers usually receive around 80% of the FOB price) and price risk has become perhaps the most important income risk among coffee farmers. During a year farmers face two crucial periods of price fluctuation exposure i.e. during April/May when they have to decide to apply inputs



and invest in labour /machinery power and from harvesting time in November until they sell their coffee (most of it by March). Currently, the only two risk avoiding strategies that small coffee farmers in Mexico dispose of is not using inputs (leading to low yields) or diversifying into other crops (up to now small coffee farmers depend on coffee for some 60 to 70 percent of their income). Some alternatives which are only available on a very limited scale include growing organic coffee and dealings with European fair trade organisations and price hedging through the purchase of put options from ASERCA (Support Services for Agricultural Marketing). This programme which started in 1994 provides subsidies for 50% of the premiums of put options purchased from ASERCA for commodities like grains, oilseeds and cotton. Since 1999 coffee has been included, however, without premium subsidies. So far there have been very few transactions in coffee due to the low coffee prices, scarce marketing promotional efforts of ASERCA's services in coffee areas, and the higher degree of technical assistance which is required when working with small coffee farmers organizations. In particular, training is needed in assessing marketing requirements and carrying out market analysis, overall decision making, adequate accounting and financial management practices, assessment of farmer constraints and needs, good communication with farmers, farmer education and training, proper design of strategies and implementation of hedging transactions, negotiating insurance contracts on behalf of farmer members with brokers, and monitoring and carrying out an impact evaluation of price insurance contracts.

In order to increase future coffee price insurance transactions in Mexico the ITF has initiated a pilot coffee price risk management scheme by working together with ASERCA. At the same time, it is identifying, selecting, and providing training to staff of appropriate Local Transmission Mechanisms (LTMs) such coffee farmer organizations, mutual farmer insurance funds and agricultural lending institutions such as BANRURAL, FIRA and private banks. An important linkage between credit and risk management can be through so-called coffee clubs. These are organizations that consist of a private bank providing credit usually from FIRA, input suppliers, coffee processors and traders (which have coffee delivery contracts with farmers) and extension agents. The farmer loans carry a guarantee which is co-shared between FIRA (63%), producers (15-20%), the bank (7%) and other non-financial intermediaries.

The ITF has prepared a Training Guide in Commodity Price Risk Management for Producers and is currently preparing brochures for trainers as well as training handouts for farmers. The current activities of the WB Commodity Risk Management staff in Mexico include (i) collaboration since the summer of 2000 with AGROSEMEX in carrying out a feasibility study for a weather insurance and laying the basis for its implementation, (ii) work on catastrophic insurance with the Ministry of Finance and Planning (Direction of Insurance and Securities) within the context of a WB loan, and (iii) work with SAGARPA and ASERCA on organising training workshops for selected coffee farmer organizations in Southern Mexico who will act as LTMs. The rural finance group of FAO is discussing with the WB staff the scope for collaboration in activities in Mexico such as strengthening the linkages between



finance, risk management, crop and price insurance. Main emphasis will be given to improve capacity building and training efforts in these fields and they will be directed at the various involved stakeholders at policy making, LTM, and client level.