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CROP INSURANCE FOR DEVELOPING COUNTRIES

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Mr. Chairman, Ladies and Gentlemen. It is a distinct honor and pleasure to have been given the opportunity to address this distinguished audience this morning on the subject of crop insurance for developing countries. Though I do not claim a high degree of expertise in the technical aspects of this subject, it is nevertheless a topic about which I have done a good bit of reading and thinking during the past year as part of my work with UNCTAD, both in completing a research study and in directing a one-week seminar on crop insurance. Though few of the ideas I will present in this paper are original with me, I think they represent a synthesis of the thinking of a number of real crop insurance experts from all over the world. Hopefully they will be of some value in stimulating the thinking of this audience on this important subject.

Importance of the Agricultural Sector

Permit me to begin by excerpting from an article that appeared in a recent issue of The Economist magazine.

- Picture a village of 550 people, who live in 95 houses hidden in a coconut grove and surrounded by paddy fields. It is called Tubuan. It is in the Philippines, but it could be any one of countless villages in Asia, Latin America, or Africa. More than one billion people in the less developed among developing countries live in villages. Include China in this group and the figures is close to two billion.
- Tubuan revolves around rice. It accounts for over 80% of the village's output, and about 70% of the average household's income. The other main activities are also agricultural - notably rearing ducks and pigs and picking coconuts.

- More than 70% of the villagers' working days are spent preparing the paddy fields, and then planting, weeding and harvesting the two rice crops a year. But even with two harvests, underemployment is still pervasive : each worker works an average of only 160 days a year, barely a three-day week.
- The average annual income per head in Tubuan is about \$200. Large farmers (defined as those farming five acres or more) have an income of \$255 per head. Small farmers have income of \$165 per head; while landless workers get \$135 per head.
- Tubuan's housing is very mixed. Of the 95 houses, only 16 are classified as "permanent" (i.e., made of concrete, wood and sheet iron). The other 79 are made of materials like bamboo and leaves, with mud foundations.
- Consumer durables are rare. The reason is that, in Tubuan, food takes 65% of the average household's disposable income. Poor people have little money left over after buying food.
- Tubuan is only partly a cash economy but all the above income figures include the value of payments in kind. About 40% of the rice is sold for cash, another 40% used for payment in kind, 10% for consumption, and the rest stored or used as seeds.
- Debts are heavy, particularly for the landless and for the large farmers. The landless rely on private moneylenders for 95% of their credit. Others get 37% of their loans from financial institutions and another 44% from suppliers.
- Barter is commonplace, and all the villagers are very illiquid. Large and small farmers' debts exceed their financial assets by 6 to 1. For the landless the ratio is lower, but they typically have only about \$35 each in financial assets.
- Population in Tubuan is growing at a rate of 4.3% per year. But the area of cultivable paddy fields is growing hardly at all. The average farm size has fallen to 5.2 acres.

Well, enough about Tubuan. I suspect that Tubuan, though located in the Philippines, is not all that far away from Africa, that in many of the countries represented at this conference there are hundreds and thousands of Tubuan villages which, poor as they are, constitute a major portion of the national economic base. Indeed, one of the most obvious and

striking characteristics of most developing countries is the critical importance of the agricultural sector. Its output typically constitutes a large proportion of total gross domestic product. Agricultural employment tends to account for a very large percentage of the country's total employment. Export earnings of developing countries typically depend very heavily on the output of the agricultural sector of the economy.

Unfortunately, the agricultural sector, important as it is, also is exposed to an extremely high degree of risk. It is of course subject to risks arising from social and economic factors, as are many economic sectors. But agriculture also is exposed to a uniquely high degree of risk arising out of natural factors, principally weather conditions. The importance of this class of risks stems from the number of events which may cause agricultural output to drop (floods, drought, frost, hail, pests, diseases, etc.), the frequency with which these events actually occur, and the magnitude of the crop losses they may cause when they do occur. Moreover, these sources of loss are in large part beyond the capabilities of individuals or societies as a whole to control or prevent.

Therefore, it is important in any society which is heavily dependent upon agriculture that devices be employed for minimizing the adverse economic effects of these natural risks. Not only are the lives and well-being of so many individuals involved; the economic viability of the entire nation may well be at stake. Crop insurance is one of the most important available devices for minimizing these adverse effects.

#### Nature of Crop Insurance

Crop insurance is a social system for reducing the uncertainty of economic loss due to crop failure. It accomplishes this, as do all classes of insurance, through the basic technique of pooling. Whereas the frequency and severity of crop losses are largely unpredictable with respect to a particular individual farmer, predictability of loss frequency and severity is increased considerably when similar exposures of a large number of farmers are pooled. For example, though the likelihood of a loss or losses occurring through hail, and the size of the loss if one does occur, cannot be accurately predicted for

a single farmer, these factors can be predicted with some degree of accuracy with respect to a large number of farmers who are similarly exposed to the risk of hail damage. Moreover, although predictability of loss frequency and severity for a group of farmers may be low with respect to a single growing season, it rises considerably when several consecutive growing seasons are taken into account.

Through crop insurance known periodic small losses for large numbers of farmers, in the form of crop insurance premiums, are combined over a period of years to form a fund out of which those farmers who incur large losses through the occurrence of the insured event in a given year may be compensated. In effect, farmers who do not suffer losses from insured events in a given year and over a period of years each furnish a small amount to provide compensation for those who do.

#### Potential Benefits of Crop Insurance

Crop insurance is by no means a panacea. In some sets of circumstances in which developing countries may find themselves, crop insurance probably will not work well at all and is not to be recommended. I shall discuss these circumstances a bit later in my talk. Nevertheless, in many cases crop insurance can be a powerful economic tool for a developing country. I would like to describe at this point some of the potential benefits I believe crop insurance can bring to such a country if the right circumstances are present. The extent to which each of these benefits will in fact be realized depends on the priorities set by the country in the field of agriculture (e.g., expansion of agricultural production vs. maintenance of minimum farmer incomes); the way in which its specific crop insurance programme is designed and implemented; and the effectiveness of a variety of related governmental policies and programmes in the field of agriculture.

(a) Expanded Agricultural Output

One of the most fundamental potential benefits of crop insurance is that it can facilitate increased agricultural production. In a typical developing country most of the farmers operate on a scale of production and income barely above the subsistence level. They have little margin for error, for their survival is at stake. Consequently, even if they have heard of new and more productive agricultural technology, they may be reluctant to utilise it due to the uncertainties involved in taking on higher levels of debt and expenditure.

With crop insurance, a certain income is guaranteed to the farmer even if his crop fails. The farmer can more easily afford the risks that may be associated with some of the more intensive cultivation methods. He also can make his farming more extensive, planting more land than he might otherwise. He is likely to be more willing to borrow knowing that loss of his crops due to one of the insured perils will not leave him saddled with a debt he cannot repay. Also, with insurance proceeds to retire the outstanding loan, he will be a more credit-worthy risk. Thus he will be able to qualify for a loan to obtain the resources he needs in order to resume cultivation in the next growing season. In this way crop insurance helps provide greater stability to farm output over time.

Moreover, the insuring organization, in an attempt to minimise claim costs, probably will engage in research in a variety of loss prevention techniques. Results of this research can be used by the insurer to provide technical assistance and advice to farmers aimed at maximising their production. Improved farming practices, such as the use of improved seed and fertiliser varieties, more effective irrigation and drainage techniques, etc., may even be made requirements for eligibility for insurance coverage.

(b) Funds for Investment

The increased level of income of farmers due to increased productivity should, over a period of years, produce a significant volume of investible funds. Depending on their marginal propensity to save and the extent to which amounts saved are deposited in financial institutions, increased farm income may produce in a developing country a substantial increase in private domestic

investment for the benefit of the economy in general. Funds for investment also may be provided through the crop insurance programme itself in years where loss experience is favourable relative to premium collections.

(c) Benefits to Government

Crop insurance may be of direct benefit to the government of a developing country in a variety of ways. It may facilitate implementation of a consistent national agricultural policy by the government. The insurance may be used as a vehicle for more rational land use by placing emphasis on certain types of crops, certain farming practices, certain geographic areas of the country, etc. It can reduce the need for government to manage disruptive, ad hoc disaster relief programmes for farmers. With proper planning, it can assist in the development of more stable farm prices. The added agricultural production promoted by the crop insurance programme, if properly channeled, can improve the country's balance of payments position by increasing its exports or reducing its imports. It can be useful in providing a greater share of national income to the agricultural sector, principally by enhancing productivity there but also by providing government subsidies of crop insurance premium costs from general tax revenues. In all of this, crop insurance may prove to be less expensive to the government than the many explicit and hidden costs of not having such a programme, in that the farmers themselves are likely to pay a large share of the insurance costs.

(d) Stability of Farmer Income

Of course the principal direct beneficiaries of a crop insurance programme will be the farmers themselves. Their incomes will at least be more stable even if not larger than formerly. Furthermore, in the event of large crop losses this income will be theirs as a matter of earned right. It will not depend upon charity, political considerations, or the uncertain ability of the government to provide large amounts of disaster relief quickly enough to be beneficial. Further, farm incomes should rise over time with increased production if appropriate farm price stabilization policies are pursued by the government.

(e) Benefits to Rural Communities

The improved income position of farmers should also spill over into the rural communities of which they are a part. Income will flow through these communities even in lean crop years. Rural industry will <sup>be</sup> promoted. Adoption of more intensive and extensive farming techniques, particularly by small farmers, should lead to increased utilization of the available local labour force. For all these reasons, emigration from rural areas to the cities may be slowed.

(f) Benefits to Financial Institutions

Crop insurance can also be of significant benefit to financial institutions. One of the major difficulties facing agricultural lending institutions is the severe decapitalization they experience when crop losses render a large volume of their agricultural loans uncollectable. This risk is so great that in many cases private financial institutions are reluctant to make loans to farmers to finance crop production. Reliance on the pledging of the farm itself as collateral is often unsatisfactory because farmers in developing countries frequently do not have clear title to the land.

Crop insurance, however, can be utilized as an ideal form of collateral thus improving the credit-worthiness of the farmer. By requiring it, the lending institution can avoid large losses when farmers are unable to repay their loans due to crop failures. Under these conditions, private financial institutions may become more willing to engage in agricultural lending at reasonable rates of interest, thus freeing government resources for other uses.

Conditions Needed for a Successful Crop Insurance Programme

Well, all of this may sound great, and some may tend to want to get on the bandwagon and get a crop insurance programme under way immediately. However, a serious word of caution is in order. The benefits I have described are potential benefits, not automatic ones.

Crop insurance cannot operate successfully in a vacuum. In order for it to yield the kind of benefits described above, a number of very important conditions must exist, at least to a minimal degree. In some developing countries these conditions, or favourable environmental factors, are absent and a crop insurance programme is unlikely to be successful. On the other hand, where these favourable conditions are present, even if only to a modest degree, the chances of success are much better. Indeed, in such a situation, the development of a crop insurance programme probably will even contribute to the further improvement of these conditions. Before a decision to develop a crop insurance programme is made, therefore, it is very important to consider first the question of whether the particular country is ready for crop insurance.

Therefore I would like to take a few moments to identify the conditions which I think should be present in a developing country in order to serve as the environment within which crop insurance can be successful. Where these factors are present to less than an optimal degree, as is usually the case, I shall make some suggestions as to how the resulting problems might be dealt with. Where many of these factors are totally absent, probably consideration of crop insurance should be abandoned for the time being in favour of other options, such as disaster relief grants to needy farmers.

(a) Basic Farmer Understanding of Crop Insurance

Crop insurance, like other forms of insurance, is future-oriented. It provides no tangible benefit until some time in the future, if and when a covered loss occurs. Even if a covered loss should never occur to a particular farmer, the insurance has served its purpose for him by having provided him the intangible benefit of protection.

Such a programme is most likely to be understood and appreciated by farmers who are accustomed to thinking in terms of economic planning for the future. They should be well informed farmers who are familiar with basic business-like procedures. Yet in a typical developing country, literacy rates are low among the rural population. Communication networks often are of very limited effectiveness. Record keeping practices on such matters as time of



planting, farming practices followed, areas under cultivation, crop losses incurred, etc. often are virtually non-existent. Above all, the incomes of farmers are very low. Under such conditions, it is extremely difficult to develop farmer understanding and appreciation of a crop insurance programme promising possible future benefits in return for an immediate expenditure in the form of a premium and a commitment to adhere to a variety of procedures to which he is not accustomed.

It is likely, then, that considerable time and effort will have to be devoted to an educational campaign among the farmers to enlist their cooperation in a crop insurance programme. A variety of media must be used, including brochures, newspapers, radio, and public meetings at the local level. It will be particularly important to rely on prominent citizens and agricultural associations in the rural communities to serve as centres of influence on behalf of the crop insurance programme.

(b) Adequate Financial Capacity of Farmers and Government

Depending on the scope of the programme and the level of indemnities provided, crop insurance costs a substantial amount of money. It seems proper that insured farmers themselves bear a significant portion of these costs, inasmuch as they are the most direct beneficiaries of the programme.

Usually, however, farmers in developing countries have very limited capacity to pay crop insurance premiums. Thus, in all likelihood, the government of the country in question will be required to subsidize the programme heavily. For example, the initial capital to cover startup costs of the programme probably will have to be supplied by the government. In addition, governments usually find it necessary to bear all of the administrative costs and often even a portion of the pure premium or loss cost element of the total premium, in order to make the cost to the farmer feasible and attractive. Lastly, the government may have to stand ready to provide, in some fashion, a type of catastrophe reinsurance of the crop insurance fund in the event that loss experience is especially unfavourable. Thus it will undoubtedly be necessary to strike some sort of balance between the desire for high levels of benefits for broad categories of farmers, crops, and areas on the one hand, and the financial realities facing both the farmers and their government on the other.

(c) Statistical Base for Determining Anticipated Loss Costs

In order to be actuarially sound, a crop insurance programme must be based on a large volume of comparable statistical data regarding crop losses experienced in the past. Ideally, such data should have been gathered over a long period of time, showing crop yields and their variability from season to season.

Crop loss data should be classified as to the source of loss, e.g., between those attributable to the natural causes which the planned programme will cover and those attributable to other causes, including farmer neglect and poor farming practices. Moreover, these data should be classified both by crop and by agroclimatically homogeneous geographic areas.

Unfortunately, in most developing countries there is a paucity of the above types of statistical data. If the needed information is totally lacking, it probably would be best to delay implementation of a crop insurance programme until a reasonable volume of it can be accumulated over a period of a few years. On the other hand, several developing countries do have at least some data which, while less than completely satisfactory, can be used as the basis for initial tentative planning for a crop insurance programme.

Also, it should be recognized that no amount of elaborately classified statistics gathered prior to the adoption of a crop insurance programme is likely to be completely satisfactory. Actual experience after a programme is implemented may be substantially different from that of a period when no such programme existed. Experience developed under the plan itself is likely to provide the data which best indicate probable future experience. Experience will, in fact, be the best teacher, though the initial crop insurance programme should not operate on so large a scale or expand so rapidly as to make the cost of that instruction potentially exorbitant.

(d) Manageable Farm Sizes, Dispersion, and Land Tenure and Record Systems

A crop insurance programme is more likely to be successful where farm sizes are not extremely small and geographically scattered. Otherwise, the administrative effort and expenses of premium collection, record keeping,

claims settlement, etc. may be extremely high. Some also argue that both physical and moral hazards are increased when farms are very small, scattered, and segregated. For the same reasons, it is desirable that there be an adequate system of land survey and land records with only infrequent changes of actual cultivators of the land from season to season. This also will facilitate determination of insurable interest and responsibility for premium payment.

Again, many developing countries find themselves in considerably less than an ideal position with respect to the above characteristics. A large majority of the farms are very small, perhaps averaging one or two acres each, and widely scattered. Often there is a constantly changing array of individuals owning or cultivating particular plots of land, and the legal relationships among them often are not clearly defined.

Some of these difficulties can be reduced if the administrative organization underlying the crop insurance programme includes appropriate participation at the local level. Arrangements such as communal farms, farmers' mutual associations, co-operatives, and formalized sharecropping, if properly supported and supervised by government, may reduce the complexity of operating the programme and provide a measure of vigilance over the activities of insured farmers. Also, a system of premium rates geared to the claims experience of local areas may help in controlling moral hazard.

(e) Availability of Trained Personnel

Crop insurance is a very technical field. Its effective operation requires that most of the personnel involved have a considerable understanding of the complexities of efficient farming and the complexities of efficient insuring. When placed in the context of a developing country, with all of its own complexities, the problem of developing a cadre of trained personnel becomes extremely difficult.

Trained personnel are needed at the top administrative levels of the crop insurance programme, at the local level in which the scheme operates, and perhaps at intermediate levels as well. At the top administrative levels, there is a need for expertise especially in the overall design of the insurance

programme, in the establishment of terms and conditions of coverage, and in the actuarial aspects of the insurance. At the local level, the most important needs are for personnel who can effectively explain the crop insurance system to the farmers and for those skilled in the extremely complicated and important claims settlement function. Depending on the way in which the system is organized, there may be needs at intermediate levels (e.g., financial institutions or federations of local farm associations) to assist with such activities as premium collection, data gathering, loss prevention, and the like.

A variety of sources probably will have to be tapped in order to meet the needs for trained manpower. The domestic insurance industry may be one such source. The government's Ministry of Agriculture is likely to be another. Producer associations may be a third. Technical assistants from international organizations and from countries with well established crop insurance programmes may be called upon. Secondments and other special training activities for domestic personnel can also be initiated. Thus the problem of providing an adequate supply of capable personnel, though difficult, probably is not an insurmountable one.

(f) Complementary Agricultural Programmes

I mentioned earlier that the extent to which the potential benefits of crop insurance actually will be achieved depends in part on the effectiveness of a variety of related governmental policies and programmes. This is especially true if the major objective is substantial expansion of farm output. Crop insurance should be viewed as but one integral part of a comprehensive, coordinated, and mutually reinforcing set of activities aimed at development of the country's agricultural sector. To view it otherwise would be to ascribe to crop insurance too much credit for successes that may result (or too much blame for failures).

Among the important complementary programmes needed are those focused primarily on the supply side of agriculture, those designed to stimulate increased farm production. Substantially increased agricultural output in a developing country can come about only through the widespread use of reasonably modern and efficient farming techniques. Before a crop insurance programme is installed, therefore, the government should have instituted and achieved

some success with a variety of programmes designed to provide farmers with the basic technical know-how and capital essential to productive farming. Agricultural research, training, and technical assistance programmes should be operating. Disease and pest control techniques should have been developed. Systems for furnishing key agricultural inputs (e.g., improved seed varieties, chemical fertilizers, and farm implements) should be in place. Of great importance, formalized agricultural credit systems will be needed to finance the additional investment farmers will have to make.

A second set of important complementary programmes consists of those focused primarily on the demand side of agriculture, those designed to provide a healthy market for the increased agricultural output. A system of appropriate transportation, storage, and processing facilities may be needed. Marketing boards may have to be established. Price stabilization and support systems may be needed to keep prices at levels high enough to enable farmers to cover their increased costs (including that of the crop insurance) and to avoid undue depression of the prices they receive as farm output expands. Planning may be needed for additional exports or for added import substitution.

The recommendations I have made on the last few minutes constitute a rather formidable agenda for some developing countries considering the introduction of crop insurance. This is not to say that before crop insurance is feasible a country needs to wait until it has achieved a high degree of agricultural development and sophistication as was characteristic of, for example, Japan and the United States, whose programmes began only about forty years ago. Rather, it is to emphasise that for some of the least developed countries, the question of crop insurance may be premature and that they should begin by building a broad agricultural environment within which, in a few years, the potential benefits of crop insurance will be more easily realized.

#### Need for a Pilot Project

In any event, once a country has decided it is ready for crop insurance, the programme should be begun on a small scale as a carefully designed pilot project. There probably is no single best way to conduct this experiment and no standard period of time during which it should be conducted. Rather, it probably is best to run the experiment long enough to permit the drawing of

meaningful conclusions and to react to results of the experiment as they emerge, expanding it slowly if they are favourable and modifying it to overcome problems that become apparent.

The pilot project should be confined initially to just a few crops, those most important to the farmers' income and the national interests. Hopefully, these crops also will be those for which insurance is relatively simple and which involve fewest problems. Finally, the crops selected should be those for which there are reasonably good records concerning past production and damage.

It is also wise to conduct the experiment with only a limited number of farmers in concentrated groups operating under conditions as nearly homogeneous as possible. Although it might seem statistically preferable to have the covered farmers widely scattered over a large geographic area so that representative results from each region will be obtained, the operational difficulties of conducting the experiment for such a group are likely to be prohibitive.

Many advantages can be gained during the pilot stages of a crop insurance programme. More refined statistical data can be gathered to form a sounder actuarial base for an expanded programme. Different premium and indemnity systems can be tried. Farmer response can be tested with respect to different contract provisions. Several alternative systems for delivering the insurance services, administering them, collecting premiums, and settling claims can be tried and the costs associated with each can be estimated. Progress can be made in educating farmers, farm organizations, and other personnel who will play major roles in the expanded programme. Agricultural support programmes and services can be expanded gradually. The probable impact of the programme on farmers' behaviour, productivity, and income can be forecast. Though undoubtedly mistakes will be made, their costs will be controllable within affordable limits.

If a particular developing country decides it is ready for crop insurance, a series of important decisions will have to be made at the policy-making level about various features of the programme. Which perils will be covered? Shall a specified perils approach be used, with coverage restricted to only a few major sources of loss, or will a more comprehensive approach be taken?

Which crops will be covered, and in which geographic areas of the country? How shall the amount of insurance be fixed? On the basis of costs of producing the crop? Its market value? Shall some form of deductible or franchise be used? Shall the amount of indemnification to be paid be based on the amount lost by the individual farmer or shall it be based on the average amount lost by all the farmers in his geographic area? Which farmers will be covered, and how will they be induced to join? Will the system be compulsory? Voluntary? Semicompulsory? Who will pay the cost of the programme? The farmers alone? Or will it be subsidized by government? And if so, what will be the government's share? Shall reinsurance be used?

All of these are extremely complex questions, and time does not permit that I go into them here this morning. Suffice it to say that there are many advantages and disadvantages to be weighed in each of these decisions, and there is no one "right" way to formulate and operate a crop insurance programme. The choices must be made in light of the particular objectives and characteristics of the country in question.

There is one area of choice, however, on which I would like to spend a few moments this morning. That is the question of the rôle to be played by the insurance industry. Some may argue that crop insurance isn't really insurance at all, but only an organized system for providing relief to farmers facing impoverishment due to vagaries of weather conditions. But I disagree. If this is the only objective, I believe there are other ways - less complex and perhaps less expensive than insurance - for accomplishing it.

In my opinion, however, true crop insurance is in fact insurance, and the insurance industry can and should participate to a significant degree in the programme. Admittedly, crop insurance requires specialized expertise in the field of agriculture, but every class of insurance - marine, aviation, life, industrial fire - requires specialized expertise. Admittedly, crop insurance poses serious problems of possible catastrophe losses, but so do many other forms of insurance. Admittedly, it probably will require that government exert a major influence in the programme, but certainly this is nothing new to insurance men and women.

What role, then, might the insurance industry, whether governmentally or

privately owned, play? Let us first take the case where the country has privately owned insurers. It is conceivable that a privately owned insurance company, such as a large commercial company writing several classes of general insurance, might be entrusted with the crop insurance programme. Private insurers have been involved for several years in the United States, in some countries in Europe, and even here in Africa, namely in South Africa, in the provision of coverage for certain types of crop loss. Traditionally, however, the insurance has been limited to only a few perils, such as hail. Presently, legislation is under consideration in the United States to bringing the private sector into the system of providing comprehensive crop insurance, with the government to serve as a reinsurer for the private companies. A similar proposal is, as I understand it, being studied in Brazil. The availability of suitable reinsurance and/or emergency loans from government or other sources might provide sufficient incentive for private insurers to engage in broader types of crop insurance coverage than they have in the past.

To look at the other side of the coin, there are a few private insurers in London and elsewhere in Europe, as well as in North America, who are providing reinsurance to national crop insurance programmes. Though it is unlikely that an individual insurance company in a developing country would have the capacity to engage in this type of activity, perhaps regional pools or regional re-insurance companies would be able to do so.

Beyond these cases, however, as a practical matter the possibility of using private insurance companies in developing countries for the provision of broad scale crop insurance appears to me to be rather slim, for several reasons. First, of course, in many developing countries there is no private insurance industry and all insurance is provided through one or a few governmentally owned and operated companies. I shall return to these cases in a few moments. Second, as regards those developing countries where a private insurance industry does exist, the companies often are quite small, especially relative to the risk magnitudes involved in a national programme of crop insurance. Third, private companies by definition are oriented in the direction of the profit objective. In crop insurance the opportunities to earn any profits, much less a level of profits commensurate with the catastrophic risks involved, are rather remote. Fourth, it is unlikely that a private general insurance



company will have on its/<sup>staff</sup> several types of technical personnel needed to operate a crop insurance programme. Such a programme may require personnel with expertise in science, agriculture, meteorology, etc., as well as those in the more conventional insurance disciplines such as statistics, underwriting, and claims settlement. In the absence of favourable profit prospects, it is unlikely that a private insurance company would wish to acquire the additional skilled personnel needed for crop insurance.

If, as has been the usual case, the private insurance industry is unavailable or not interested in providing comprehensive crop insurance, the alternative is to designate a governmental unit as the insuring organization. It could be an existing unit within the Ministry of Agriculture or within the government owned insurance company, or it could be a newly established governmental unit created especially for this purpose. There appears to be ample precedent among existing crop insurance programmes for any of these approaches.

There is considerable justification for a governmental unit, whether it be the government operated insurance company or some other government agency, to be the insuring organization in crop insurance. Since the programme and its objectives are a matter of national interest, not affecting merely a restricted group or sector, it is only natural that the government intervene directly to see that the programme is run in accordance with that national interest. Among the reasons for direct state involvement in crop insurance, the following are of particular importance :

- (a) The crop insurance programme is usually intermingled with other aspects of national policy such as overall modernization and promotion of agricultural production, stability of supply of agricultural products, etc., which in many developing countries are considered to fall within the direct responsibility of the government.
- (b) The actuarial base of losses in crop insurance is not usually as reliable as in the case of, say, life or fire insurance. Mainly because of the catastrophic element they involve, claims in crop insurance are known to deviate frequently and significantly from reasonable expectations and, therefore, the safety margin that a profit-oriented private insurer would charge for the coverage is

likely to be high. This would be particularly true during the experimental and early stages of the programme. The state, on the contrary, probably can charge practically no safety loading, which makes the premiums under the programme lower than otherwise.

(c) Premiums paid by the farmers probably will not be enough to cover the costs of the programme. As has already been pointed out, it is likely that the programme will need subsidies in order to cope with indemnities and expenses of administration. Payment of subsidies almost inevitably involves major government participation which, for this reason, may be extended to the actual management of the programme.

(d) In general, in order for the crop insurance programme to be economically viable, it is necessary to coordinate its operation with that of governmental agencies such as the Ministry of Agriculture, the Bureau of Statistics, agricultural research centres, planning and price-regulating agencies, agricultural lending institutions, etc.

(e) Much of the work conducted on behalf of the crop insurance programme may be of substantial benefit to all farmers, even those who do not carry the insurance. Provision of externalities in this manner is commonly thought of as being more within the responsibility of governments than of private enterprise.

On the other hand, when crop insurance is entrusted to a governmental agency, special care must be exercised to assure that certain pitfalls are avoided. For example, a governmental organization may use less refined rating structures than a profit-oriented company in establishing premiums for different classes of farmers. Ex gratia claim payments based on non-technical considerations may creep into a governmental programme. Administrative costs may be unnecessarily high due to bureaucratic delays, red tape, and featherbedding frequently found in governmental organizations (though I am sure not in any represented at this conference). Special vigilance will be required in a governmentally operated crop insurance programme to assure that sound insurance principles and technical practices are adhered to in all facets of the programme.

If a country decides, that the crop insurance will be provided through a government organization which is not an insurer, I think it should investigate the possibility of utilizing some services which may be available in the insurance sector. For example, it may be possible for the established network of insurance companies and agents to cooperate with the crop insurance institution in matters such as the marketing of insurance policies, collection of premiums, and payment of indemnities, as well as in tasks relating to inspection and loss prevention, which could be coordinated with their own commercial activities and transactions in the rural areas.

Now in closing I should point out that the opinions I have expressed here are mine alone. They do not reflect any official position of UNCTAD or its secretariat. But I personally believe, to summarize, that crop insurance is needed in many developing countries. I believe that it can contribute in a powerful way to their further economic growth if the right circumstances are present. And finally, I believe that the insurance industry, whether privately owned or governmentally owned, can and should be one of the leaders in the examination of its feasibility in each developing country and in its implementation in those countries where it is feasible.

I am grateful for the time you have given me this morning to express these thoughts and for your very kind attention. Thank you.