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LIVESTOCK INSURANCE AND INSURANCE OF CROPS  
OTHER THAN PADDY (RICE) IN SRI LANKA

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Introduction

According to the Agricultural Insurance Law, the Agricultural Insurance Board (A.I.B.) has the responsibility to administer an insurance programme for crops and livestock in Sri Lanka.

The paddy insurance was introduced in 1958. However, it was implemented on an island basis with the establishment of the A.I.B. in 1965.

In 1976 a pilot scheme of livestock insurance started in the mid-country and the coconut triangle. The livestock insurance is still a pilot project. (1,700 of about 1,650,000 cattle are insured) but annually there is increase in the extending of the scheme.

Subsidiary food crops insurance is not yet introduced in the Sri Lanka Crop Insurance system. However, A.I.B. is seriously carrying out investigations for implementation of insurance principally for chillies,

soya-beans, green grams, Bombay onions and red onions.

Even a cotton and sugar cane insurance may be introduced in Sri Lanka in the near future.

Some of the theoretical as well as practical problems in the implementation of the above mentioned insurance schemes will be discussed in this paper.

#### Chapter 1. Livestock Insurance - Pilot Project

##### a) Basic Features

1. Insurance cover is confined to cattle financed with bank credit under the Sri Lanka/IDA Dairy Development Project.

2. Only dairy cattle and heifers aged 2-10 years are insured. The pilot project does not cover stud-bulls and calves.

3. A premium of 3 percent to indemnify the insured against loss through the death of the animal insured resulting from accident or disease and an additional premium of 0.5 percent to cover a loss against theft, are payable annually. The policy is subject to an excess of first 20 percent of each and every claim payable.

4. All animals to be insured must pass a veterinary examination without any remarks.

5. The policy is valid only for a period of 12 months. By paying 3.5 percent of the original value before the date of expiry the policy can be renewed and the cover combined.

6. Both death and its cause must occur during the period of insurance. There is no liability if the animal dies from an accident or disease originating before the commencement of the policy, and similarly a claim would not be entertained if the animal dies after the policy expires even though death is the result of an injury or disease

occurring during the currency of the policy.

b) Form of Proposal, Claim and Post-mortem Report

When a farmer wants to insure an animal the procedure is as follows:

The farmer requests a loan from the bank. After approval of the loan, proposal forms are sent from the bank to the farmer. With the assistance of a field officer, he completes the proposal. The officer also arranges to have the insurance proposal form certified by a Veterinary Surgeon. When the bank receives the complete proposal form, money is made available to the farmer for buying cattle. In accordance with an agreement between the bank, A.I.B. and IDA, cattle purchased through loans are automatically insured.

In the case of a claim, the procedure is as follows:

On the death of an insured animal, the farmer must within 12 hours give notice to A.I.B. and to the nearest veterinarian. A.I.B. notifies the bank and sends it the forms which must be completed by the farmer. The farmer must, within 14 days, return the completed form and a post-mortem from the veterinarian to the bank. These are then forwarded to A.I.B.

Having checked and approved the claim, A.I.B. makes the payment to the bank which sets off the balance against the loan.

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- References: 1. Report to Agricultural Insurance Board, Colombo, Sri Lanka and to SIDA, Stockholm, Sweden by G.H. Bergsten, D.V.M. PHD.  
2. D.S.C. Rupasinghe, Livestock Insurance, Pilot Project, December 1978.

c) Mortality and Premium Rate

When the pilot scheme started the mortality rate was estimated to 3.5 percent. The actual figures are as follows:

TABLE

Mortality in respect of origin of the cattle within the pilot project.

<u>Issued</u>	<u>Impor- ted</u>	<u>Local Breed</u>	<u>Govt. Farm Breed</u>	<u>All Herds</u>
Up to Sept. 1977	572	410	367	1349
Up to Sept. 1978	556	625	400	1681
<u>Dead Nos.</u>				
Up to Sept. 1977	134	16	16	166
Up to Sept. 1978	181	40	66	287
<u>Mortality, percent</u>				
Up to Sept. 1977	23.4	3.9	4.4	12.3
Up to Sept. 1978	27.6	6.4	16.5	17.1

The mortality rate, 17.1 percent of insured cattle in 1978, is proportionately high. The premium rate, however, is still 3.5 percent. Thus the balance between indemnity paid and premium has been taken as a loan from the paddy insurance fund.

Reason for high mortality.

The imported animals were on arrival mostly in late stage of pregnancy and with various sicknesses and injuries according to the post-mortem reports; the incidence of ~~septicaemia~~ septicaemia is remarkably high, about 24 percent, as well as incidence of pneumonia, about 20 percent.

d) Broadening of the Livestock Pilot Project

There is an interest in and a need for broadening the livestock insurance in Sri Lanka.

In spite of experienced imbalance between indemnity paid and premia collected, the A.I.B. will gradually expand the scheme in collaboration with veterinary services and field officers' advice, in accordance with animal husbandry practices. Thus, in December, 1978, the A.I.B. came to an agreement with the Ministry of Rural Industrial Development to participate in an insurance scheme up to 4000 cattle in the Nuwara Eliya district (a highland area).

A.I.B. has not made any changes in the insurance conditions compared with the IDA project owing to:

1. Each participant (plantation worker) will be entitled to a maximum of two cows.
2. In the area grass is available and the price of cattle concentrate feed is not too high.
3. A.I.B.'s opinion is that the animal husbandry scheme will work satisfactorily.

The insurance scheme will be reviewed at the end of nine months after implementation with a revision of the insurance premium either upwards or downwards, if found necessary.

## Chapter 2. Subsidiary Food Crops Insurance

### Introduction

The implementation of a Subsidiary Food Crop Insurance Programme (S.F.C.P.) under small holding management and poor agricultural economy will inevitably come across complicated situations. However, a preparatory work for implementation of the S.F.C.P. will be done in the following steps.

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Year 1 : Technical advice (already completed).

Years 2-4 : Surveys and collection of data, surveys on farmers'

opinion, calculating damage rate, provision of administrative organization, etc. (This step has just started).

Year 5 : Analysis of data and determination of rates for operation, publicity for the objectives of the S.F.C.P.

Year 6 : Actual operation.

#### Basic Principles of Work

##### a) Matters to be investigated.

An Agricultural Insurance Programme is required to stabilize farm incomes of the cultivators. The matters primarily to be investigated are:

- the crops to be included in the investigation
- areas coming under investigation
- the condition of agricultural productivity
- the condition of loss and damage rate within the specified studies
- the farmers' demand for insurance, etc.

##### b) Subjects for examination

After the investigation in selected districts, the following subjects have to be examined before the implementation:

- i) The object of insurance (crops to be insured), e.g. to limit to pulses only. Whether it should be individual crop insurance or consolidated crop insurance. The limitation of the loss covered by insurance and the extent of insurance coverage.

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Reference: Toshiaki Washida, Kinzo Uena, Shoji Kashimata and Takao Sato. Proposed Scheme for the Insurance of Subsidiary Food Crops and Suggestions for the Improvement of the Existing Agricultural Insurance Auditing and Accounting Systems. Colombo, September, 1977.

E.g. how to deal with a total damage, how to deal with poor germination or how to deal with an over 50 percent damage.

It can be mentioned that the Japanese experts have recommended to begin the insurance scheme with chillies, soya-beans, green grams, Bombay onions and red onions.

ii) Conditions required for participating in S.F.C.I., e.g. fixing of a general set of conditions or merely including such conditions as acreage to be covered, pattern of cultivation, experience in farming, membership in a farmer organization, etc.

iii) Method of underwriting.

Whether only single farm unit or even large area units consisting of several farms should be the insurance units and whether it should be compulsory participation or voluntary participation.

iv) Insurance period.

To separate Maha and Yala seasons or to cover only during Yala season and when to start underwriting (e.g. seeding stage, after germination, etc.)

v) Coverage (indemnity in case of full damage).

Fixing of coverage levels and decision if the coverage level should be based on production cost, amount of cash payment out of the production cost or average standard yield value for a longer period as in the paddy insurance.

~~The problem is the lack of data from earlier years.~~ Another condition for calculating the coverage is whether the coverage might be differentiated for rainfed land, irrigated land, fertile land, unfertile land, etc.

vi) Premium.

The lack of statistical figures of the yield and want of experience of S.F.C.I. involves a more serious problem in calculating the premium rate than in selecting the coverage.

Maybe the present system of calculating the premium for paddy insurance will apply as well to S.F.C.P.

vii) Loss assessment.

Loss assessment is the main problem in all insurance. The question for S.F.C.P. is to what extent the loss claims submitted by the farmers will be accepted and who will assess the damage at the initial stage, and how to check such assessment at the initial stage.

Or should objective crop surveys be introduced or would it be sufficient to have loss assessor's eye estimation.

viii) Payment of indemnity.

The rate of indemnity for losses must be fixed in relation to the premium rate, the risk for indemnity, eventual subsidies and administration cost.

Can the experience from paddy insurance be utilised in the absence of past experience?

c) Matters for Reference in Continued Surveys.

The Japanese experts observations of the pilot projects at Polwehera and Maha Illuppallama, 1972-1976, have in the report in extract been summarized as follows:

i) Cultivation of subsidiary food crops in Yala 1975 had been impossible due to drought. This indicates that the cultivation of subsidiary food crops in areas outside the Mahaweli Project irrigated area are subjected to greater risks.



ii) The annual yield fluctuations were high.

iii) Crop-wise yield differences were high.

iv) Location-wise yield differences were high.

There was a marked difference in the yields obtained at Pelvehera and Maha Illuppallama.

v) There was a marked yield difference among the individual farmers. The difference was very high in the case of onions. Further investigations are required to determine the cause for these differences. These may be due to the difference in field conditions (e.g. availability of water, soil texture, etc.) or due to the different technical standards of the farmers.

vi) The total annual acreage under cultivation indicates a high fluctuation.

d) General Impressions from Field Investigation.

According to the Japanese report, the following impressions should be taken into consideration specially, in the introduction of an S.F.C. scheme.

i) As chillies, soya-beans, green grams, Bombay onions and red onions are the main S.F.C. crops, preparatory work on these crops should have priority.

ii) Water management is one of the important factors controlling the growth of crops. As such it should be considered as one of the main conditions at the time of insurance underwriting. Therefore, observations of movements in the irrigation facilities are essential. Well established irrigation reduces the burdens of drought for the farmers and hence there can be a tendency for a

lesser demand for crop insurance.

iii) It is difficult to determine the yields of crops due to various differences and due to the long harvesting periods such as in the case of chillies. The cultivation calendar for green grams, chillies and onions will be seen as such. It is suggested to start with the payment of certain percentages of the indemnities for the relative percentages of damages that have occurred. (The cultivation calendar can be seen on the last page).

e) A.I.B.'s plan for Implementation of S.F.C. Insurance.

The work on implementation of S.F.C. insurance has started, based on the Japanese experts' recommendations. Some special problems of insurance techniques have been mentioned here. Other problems of improvements in existing environmental conditions, administration, and auditing have not been mentioned. In fact, the implementation of an S.F.C. system in Sri Lanka must take place successively.

### Chapter 3. Cotton Insurance - Suggestion of a Scheme

#### a) Introduction

The main purpose of the referenced study is to establish a basis for insurance of cotton in Sri Lanka. It will be seen that any such scheme has to be linked with a scheme of credit. Unlike the case of paddy cultivation, cotton is confined to specific areas and the acreage cultivated is limited. Damage due to unfavourable weather conditions, other than floods and severe drought, rarely occurs. Damage by wild animals is another factor to be considered. However, pest damage is the main problem.

The following initial steps are suggested to commence the operation of the scheme.

(i) A register of permit-holding cotton farmers to be obtained for

each cultivation officer's division.

(ii) Cultivation officers to personally certify the identity and ownership of land.

(iii) A premium and coverage to be fixed.

(iv) Methods to assess yield and loss.

(v) Train adequate personnel in field work.

b) Registration of permit-holding cotton farmers

The cotton production is concentrated in four districts, of which Hambantota district in the south contributes 70 - 75 percent of the rain-fed cotton area. Irrigated cotton production is a small amount.

The rainfed farming of cotton is often based on Chena. The farmers have the right to burn and cultivate a plot of Crown land. A plot is cultivated for one or two seasons and then the cultivation is shifted to another plot. As the farmers do not have enough private land, they have cultivated cotton in Crown lands. The government has decided to allow only five acres to be cultivated under the Crown land. To enable cotton insurance and maintain correct particulars in respect of acreages cultivated, the ownership of lands, identity of farmers, etc., it is necessary to have a record of such particulars.

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Reference: Report on the Feasibility of an Insurance Scheme for Cotton Cultivation in Sri Lanka, by Richard Balasuriya, Dep. Director, Insurance Operation of Agricultural Insurance Board.

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c) A premium and coverage to be fixed.

The coverage is defined as the indemnity paid in case of full damages. Unlike the case of paddy, statistical figures are not available to calculate a proper level of premium rate and of the coverage for different acres. Only total figures of cultivated and harvested areas and average yield are available. A rough estimation must be made at the beginning of the scheme. Therefore, to begin with the coverage may be limited to between Rs: 300 - 500 or 10 - 15 percent of the total production cost. The premium rate can be estimated on the basis of the paddy insurance scheme. The risk of cultivation of cotton is in all areas higher than the risk to cultivate paddy. This means relatively higher premium rates will apply for cotton per any given coverage compared to paddy. The risk factors are mainly drought, insect pests, and damage by wild animals. Insect pests are the hardest problem. The experience of the scheme must yearly be evaluated to examine the relation between premium rates and coverage.

d) Assessing yield and loss.

Unlike the case of paddy, assessing cotton yield and damage to crops requires a detailed survey and examination of the crops. Cotton bolls lie interspersed and hidden in the foliage and a glance survey does not provide a clear perspective for fair estimation of the crop. Further chena plantations which are found mostly in interior jungle areas are not easily accessible from the main roads. Under these conditions, it would be almost impracticable to do a crop survey as is being done in the case of paddy.

However, two suggestions can be proposed. One is the objective survey of the crop during the flowering and harvesting seasons. This can be done by participation with the farmers in the actual cultivation and harvesting processes. This participation study would enable one to ascertain the number of bolls in a plant and yield obtainable (and obtained during the previous seasons), etc. and will serve as a proper basis for an objective assessment.

The second is the statistical method by which the average weight from a fully planted acre could be arrived at on the basis of the average weight obtainable from a random selection of plants. The methods can be described as follows :

The number of plants in an acre varies according to the planting spaces adopted by farmers in different areas.

The following are some of the spacings adopted :

Space between rows	Space between plants in rows
a) 2 ft	1 ft
b) 3 ft	1 ft
c) 3 ft	2 ft

Thus the formula adopted for computing the number of plants on any given spacing will be :

Formula :

$$\frac{\text{Area space in an acre}}{\text{Space between rows}} \times \frac{\text{Space between plants in rows}}{\text{rows}} \times \text{Number of plants per hole}$$

On the basis of a random selection the actual average weight per acre would be ascertained in this manner. The final result arrived at by adopting this method is far more accurate than the previously mentioned objective method, but it is more difficult to implement.

Going on the statistical method, the number of bolls per plant taken from the random selection represents an equivalent number of hundred weight per acre, and is the final analysis. It is a method by which the number of hundred weight per acre would be determined by the number of bolls in any one plant.