

**AGRARIAN RESEARCH & TRAINING INSTITUTE**

**COLOMBO**



**SMALLHOLDINGS OF  
THE COCONUT TRIANGLE**

**A CASE STUDY OF THE HUSBANDRY OF 245  
SMALLHOLDINGS (BELOW 10 ACRES) IN COLOMBO  
KURUNEGALA AND PUTTALAM DISTRICTS**

**SRI LANKA 1973**

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The Occasional Publication Series issued by this Institute-- unlike the Research Study Series may not always deal with agrarian problems in depth and detail. But they contain useful information relevant to those engaged in the implementation of development programmes in the agrarian sector. The speed with which these studies are undertaken does not sometimes enable the Research Staff to adhere to all the principles of Research methodology and may, therefore, have their limitations. However, these studies identify certain problem areas and point to subjects of further research and investigation.

## PREFACE

It is generally held in Sri Lanka that the husbandry of existing coconut small-holdings is well below the optimum in terms of productivity. In order to gain first hand experience of the cultivation practices and general level of management of these lands it was decided to embark on the study which follows. Holdings of three size categories below ten acres (the maximum unit considered possible in distribution of alienated lands)<sup>1/</sup> were looked at to see if cultivation and management practices were in fact different and related to size at this level.

Acknowledgement is made to the research staff and graduate trainees who assisted the Institute to gather data as quickly as possible. Some of the processed data was rejected after checking as there were doubts of its veracity, leaving obvious gaps in information. The study is published for wider circulation, with recognition of its limitations, as it is believed that the problems discussed are worthy of further thought and investigation.

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<sup>1/</sup> i.e. as individual holdings under Land Reform.

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(BELOW 10 ACRES) IN THE COCONUT TRIANGLE OF  
SRI LANKA, 1972**

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I INTRODUCTION

- 1.1 Coconuts occupy more than one million acres of agricultural land in Sri Lanka, being concentrated particularly in the well known 'Coconut Triangle' contained in the districts of Kurunegala, Puttalam and Colombo. Much of this area receives rainfall from both monsoons and is densely populated. Agricultural economists suggest that much of the coconut land is not fully utilised for production. Certain progressive estate managers have demonstrated that many of these coconut lands respond to high standards of management including associated selective intercropping and grass for livestock under coconut palms.
- 1.2 As contrasted with tea, coconut is primarily grown on small holdings, approximately three-quarters of the acreage being in holdings of less than 50 acres. 1/ It is known that about 20% of coconut lands are in holdings of above 100 acres and as these are held largely by individuals or private companies, it is expected that a substantial area of coconut land will be alienated under the provisions of the Land Ceiling Act. 2/
- 1.3 It is anticipated that at least part of this land will be allocated in the form of small-holdings and the following study was designed to look at a selection of existing small holdings in three categories, i.e. 1-2½ acres, 2½-5 acres, and 5-10 acres to seek information on current management practices in such holdings and to note any significant difficulties appearing to be related to size. Preliminary observations indicate that general standards of management and land utilisation are relatively low and it is hoped to discover some of the reasons during the course of the study.

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1/ Ceylon. Agricultural Section Survey, IBRD 1972

2/ Register of Department of Coconut Rehabilitation, May 1971.

## II METHODOLOGY

- 2.1 Sri Lanka is administered in twenty two districts. The greatest concentration of coconut land is in the three districts, Kurunegala, Puttalam and Colombo and these have been chosen for the study. Each district is further sub-divided into Divisional Revenue Officer's Divisions (DRO). Using the Register of participants under the Fertiliser subsidy scheme maintained by the Coconut Rehabilitation Department <sup>1/</sup> a stratified random sample of four small-holdings out of every five hundred in the categories 1-2½, 2½-5 and 5-10 acres was selected.

Table I: Distribution of Small-Holdings in  
Divisional Revenue Officer's Divisions  
(Complete Schedules)

| District   | DRO's Division                   | 1-2½<br>acres | 2½-5<br>acres | 5-10<br>acres |
|------------|----------------------------------|---------------|---------------|---------------|
| Kurunegala | Katugampola Hatpattu             | 12            | 16            | 12            |
|            | Dambadeni Hatpattu               |               | 4             |               |
| Puttalam   | Pitigal Korale South             | 12            | 12            | 4             |
|            | Pitigal Korale North             | 4             | 3             | 4             |
| Colombo    | Hapitigama Korale                | 4             | 4             |               |
|            | Alutkuru Korale South            | 12            | 8             |               |
|            | Alutkuru Korale North 'A'        | 12            | 8             | 4             |
|            | Alutkuru Korale North 'B'        | 12            | 8             | 4             |
|            | Siyane Korale (Meda<br>Pattu)    | 12            | 12            | 4             |
|            | Siyane Korale (Adikari<br>Pattu) | 12            | 7             |               |
|            | Siyane Korale East               | 8             | 8             | 4             |
|            | Hevagam Korale                   | 12            | 4             |               |
|            | Salpiti Korale                   | 3             |               |               |
| Total      |                                  | 115           | 94            | 36            |

<sup>1/</sup> See para 3.2.1 regarding bias of sample. Exact data is not available, but from Census figures it is estimated that the Register contains approximately 35% of all Coconut small-holdings from 1-10 acres in these three districts. The use of this Register eliminates coconut lands owned solely for pleasure or prestige purposes but completely neglected in respect of husbandry. The management of holdings outside the Register may be assumed to be at a lower level than the sample.

- 2.2 After the elimination of inadequately completed schedules (three) 245 cases remained for analysis. The distribution of these small-holdings is shown in Table I (13 of the 34 DRO Divisions in the three Districts are included). It is appreciated that the sample is too small to draw general conclusions. The study is therefore presented as a Case Study with this limitation understood. It was undertaken in order to collect background information quickly with minimum resources. It is anticipated that the information will be useful in association with the Land Ceiling and Agricultural Productivity Laws and the study will identify priorities for further research in some depth when resources are available.
- 2.3 The study attempts to summarise some of the features of coconut small-holdings in the coconut triangle and identifies problems for further investigation. Within the limitation of the sample, it indicates the need for urgent attention to this sector if the social and economic aims of the Land Ceiling and Agricultural Productivity Laws are to be achieved.
- 2.4 By means of a questionnaire data was gathered 1/ as arranged under the following headings:
1. Cultivation Practices
  2. Fertilisers
  3. Intercropping
  4. Animal Husbandry
  5. Use of By-Products
  6. Credit
  7. Agricultural Extension
  8. Employment and Income
  9. Ownership

### III ANALYSIS

#### 3.1 Cultivation Practices:

- 3.1.1 A number of cultivation practices are required of the growers if efficient coconut production is to be achieved.

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1/ The questionnaire was prepared in May 1972, and the data was gathered during the following May - August, by a team of graduate investigators. A considerable amount of additional information was collected, but in certain cases, e.g. on incomes, was rejected as being unreliable.

Table II: Cultivation Practices of  
Small-Holdings

| Details          | Total    | 1 - 2½   | 2½ - 5   | 5 - 10   |
|------------------|----------|----------|----------|----------|
| Regular planting | 23 ( 9%) | 6 ( 5%)  | 14 (14%) | 3 ( 8%)  |
| Contour draining | 65 (26%) | 28 (24%) | 28 (29%) | 9 (25%)  |
| Stone terracing  | 55 (22%) | 23 (20%) | 21 (22%) | 11 (30%) |
| Husk mulching    | 59 (24%) | 26 (22%) | 24 (25%) | 9 (25%)  |
| Husk burying     | 51 (20%) | 22 (19%) | 21 (22%) | 8 (22%)  |
| Harrowing        | 29 (11%) | 17 (14%) | 10 (10%) | 2 ( 5%)  |
| Ploughing        | 29 (11%) | 17 (14%) | 10 (10%) | 2 ( 5%)  |
| Weeding          | 21 ( 8%) | 16 (13%) | 12 (12%) | 3 ( 8%)  |
| Fencing          | 13 ( 5%) | 5 ( 4%)  | 7 ( 7%)  | 1 ( 2%)  |

3.1.2 Table II indicates that most small-holders do not carry out adequately the generally recommended practices for coconut cultivation. It will be noted that for such practices as harrowing, ploughing and weeding the percentage is highest in the smallest category 1 - 2½ acres. Stone terracing is practised mostly in the larger holding category of 5 - 10 acres. This is also true for organic manuring, accomplished by mulching with leaves or tying cattle round the palms, but only 44% of the total of small-holders engaged in the first practice and 34% in the second. Both practices are commoner by almost 50% in the holdings of 5-10 acres compared with the 1-2½ acre holdings, with the intermediate size holdings falling between.

3.1.3 The spacing of palms in the initial planting and subsequent uprooting of barren palms and filling of vacancies, affect yields. The optimum number of palms per acre varies according to such physical conditions as soil type and management practices like intercropping. There is a tendency to exceed the number of palms per acre recommended by the Coconut Research Institute rather than to plant too few. This affects the light intensity beneath the mature palms and restricts the range of crops available for successful intercropping. Only about a quarter of small-holders intercrop. Various reasons are given for the latter, the principle restrictions being joint ownership and shortage of time.

3.1.4 Although the presence of weeds is widespread, control measures are not appreciably adopted by any one group more than another.

Table III: Weeds, Pests and Control Measures

| Details           | Total     | 1 - 2½<br>acres | 2½ - 5<br>acres | 5 - 10<br>acres |
|-------------------|-----------|-----------------|-----------------|-----------------|
| Affected by Pests | 154 (62%) | 69 (60%)        | 59 (62%)        | 26 (72%)        |
| Control Measures  |           |                 |                 |                 |
| Adopted           | 75 (30%)  | 34 (29%)        | 28 (29%)        | 13 (36%)        |
| Affected by Weeds | 204 (83%) | 94 (81%)        | 78 (82%)        | 32 (88%)        |
| Control Measures  |           |                 |                 |                 |
| Adopted           | 195 (79%) | 89 (77%)        | 76 (80%)        | 30 (83%)        |

- 3.1.5 The incidence of pests has been fairly widely observed; relatively little importance is attached to their control. In view of the concentration of coconut in these districts it is unlikely that the proportion affected by pests actually varies much from one size of holding to another. Reasons given for non-adoption of pest control measures were varied: there was little knowledge of the basic science of pests and their control and the need for guidance was expressed. This is particularly relevant in the case of coconut where palms are commonly affected by pests or diseases to a *minor degree* (e.g. Leaf Blight) when the economic importance of such an attack may be slight. Ignorance or indifference may however lead to the neglect of significant pest or disease attack until control becomes increasingly difficult. 1/ Fortunately quick scavenging of dead leaves and palms for fuel ensures the necessary plant hygiene methods for the prevention of major pest and disease outbreaks.

*There is traditional knowledge of coconut cultivation, but its disciplines and science are matters for farmer education.*

### 3.2 Fertiliser:

- 3.2.1 The Register of the Coconut Rehabilitation Department from which the Study sample was selected was prepared originally for fertiliser permit purposes and there is no significance in the fact that most small-holders (89%) in the sample claimed to use fertilisers. 2/

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1/ As in the case of the suburbs of Colombo where a Leaf Miner, a pest new to Sri Lanka (*Promecotheca Cumingii*) reached epidemic proportions in 1972.

2/ In 1972 permits issued to small-holdings under 20 acres total 15,744, covering 91613 acres and authorising 29921 tons of fertiliser of which 22762 tons were drawn. Letter: Senior Assistant Secretary, Ministry of Plantation Industries, 1973.

- 3.2.2 On the question of cost of fertiliser to small-holders, the scheme for subsidised fertiliser is intended to make it available at a reasonable and uniform cost. A few small-holders reported paying higher prices than the subsidised rate and in some cases the unsubsidised price was reported. On the whole it appears that small-holders paid for the actual fertiliser as given in Table IV.

Table IV: Range of Fertilisers Available to Small-Holders

| Type of Fertiliser                                                                              | Composition                                                                      | lbs Fertiliser per palm per annum | Controlled price (including 50% subsidy) CWT. |
|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------|
| CRI Compound 'A'<br>(For laterite soils in the Wet Zone and sands)                              | N. 10.3 % )<br>P <sub>2</sub> O <sub>5</sub> 6.85% )<br>K <sub>2</sub> O 15% )   | 10                                | Rs. 12.33                                     |
| CRI Compound 'B'<br>(For laterite soils of the Intermediate Zone)                               | N. 10.3 % )<br>P <sub>2</sub> O <sub>5</sub> 6.1 % )<br>K <sub>2</sub> O 16.6% ) | 9                                 | Rs. 12.45                                     |
| CRI Compound 'C'<br>(For red, brown & alluvial loams & clay; mainly Dry and Intermediate Zones) | N. 10.3 % )<br>P <sub>2</sub> O <sub>5</sub> 5.5% )<br>K <sub>2</sub> O 18 % )   | 8                                 | Rs. 12.55                                     |

- 3.2.3 A well organised system of transportation for fertiliser should show only minor differences in cost; in this study variation was found to be substantial. For small-holders in the category 1-2½ acres, transport is from Rs. 0.50 to Rs. 9.00. In the category 2½-5 acres from Rs. 0.30 to Rs. 7.50 and in the category 5-10 acres from Rs. 0.50 to Rs. 3.00. It was only in one DRO's Division that a price of Rs. 0.30 was charged. (Alutkuru Korale North 'B'). Other than this exceptional case the minimum was Rs. 0.50. The smaller the holding group, the higher the amount paid; this indicates a transport problem for small-holders in the category 1-2½ acres as the actual cost price of fertiliser at the Central Stores is controlled. Large farms may be charged the same transport cost for a full load of fertiliser as small farms for a half-load or less, thus increasing substantially the cost per cwt.

Table V: Distance from Fertiliser Source  
to Small-Holdings

| Details            | 1 - 2½<br>acres | 2½ - 5<br>acres | 5 - 10<br>acres |
|--------------------|-----------------|-----------------|-----------------|
| Less than 5 miles  | 20 (21%)        | 14 (20%)        | 4 (11%)         |
| Between 5-40 miles | 62 (67%)        | 40 (57%)        | 15 (44%)        |
| More than 40 miles | 10 (10%)        | 16 (22%)        | 14 (44%)        |
| Total              | 92(100%)        | 70(100%)        | 34(100%)        |

3.2.4 Table V shows that the distance from the fertiliser source to the small-holding is in the majority of cases between 5 and 40 miles; only in a relatively small number of cases is the distance less than 5 miles. For a large number of holdings in the category 5-10 acres (44%) the distance is more than 40 miles.

3.2.5 The figures indicate that the smaller farmers rely on sources of supply closer to their land whilst the larger ones go much further for their fertiliser. This is borne out by Table VI which shows that the Central Stores, Colombo, is by far the most important source of fertiliser, especially for the category 5-10 acres (81%). It is noteworthy that for 'Central Stores, Colombo', the lowest percentage (60%) is recorded in the category 1-2½ and the highest (81%) in the category 5-10 acres.

Table VI: Sources of Supply of Fertilisers  
to Small-Holders

| Details                         | 1 - 2½<br>acres | 2½ - 5<br>acres | 5 - 10<br>acres |
|---------------------------------|-----------------|-----------------|-----------------|
| Central Stores, Colombo         | 59 (60%)        | 48 (62%)        | 27 (81%)        |
| Co-operative Society            | 18 (18%)        | 13 (16%)        | 6 (18%)         |
| Village Trader                  | 4 (4%)          | 4 (5%)          | -               |
| In cooperation with a neighbour | 2 (2%)          | 3 (3%)          | -               |
| Other sources                   | 15 (15%)        | 9 (11%)         | -               |
| Total                           | 98              | 77              | 33              |

- 3.2.6 The reluctance of cultivators to obtain their requirements of fertiliser from the Co-operative Society - very often the nearest source - was due to many reasons: 'inability to get the fertiliser at the required time' was the most common. From the number of cultivators who gave 'convenience' as a reason for the choice of their supplier (in most cases the Central Stores, Colombo) it would appear that to obtain fertiliser requirements through the co-operatives would be the most convenient if timely supplies are readily available.

*The variation in cost of fertiliser by the time the farmer takes delivery and the reluctance or inability of small-holders to obtain fertiliser from local cooperatives are factors worthy of future study.*

### 3.3 Intercropping:

- 3.3.1 Intercropping or the cultivation of additional crops (including forage grasses) between rows of palms is a recommended practice to increase both productivity per acre and employment. About 40% of small-holders of the three size categories practice some kind of intercropping although in some cases this was observed to be little more than a few banana plants for family food consumption and local sales, which is not strictly intercropping.
- 3.3.2 The commonest crop is plantain (banana) and almost all the holdings which grew other crops under coconut utilised this crop to some extent: in most cases only part of the coconut area was intercropped. 6% of the holdings grew pineapples and 5% passion fruit and virtually none of the farmers knew what income was, or could be gained from these two crops (although the profitability and marketability of these two fruits has been widely reported in the Press.) Few farmers had any accurate idea of the costs (including labour) of producing intercrops - the proportion in the intermediate size category 2½ - 5 acres being about as much as the other two categories combined.
- 3.3.3 It is generally agreed (by 60% of the small-holders evenly distributed) that sufficient water is available for intercropping. It is doubtful however that actual water requirements, storage, lifting techniques and management throughout the year are known to farmers, as the relatively limited degree of intercropping puts such knowledge outside their experience.
- 3.3.4 Reasons given by small-holders for failing to practice intercropping:
- a) shortage of available labour when required.
  - b) lack of interest in tenanted holdings.

- c) distance of lands from house.
- d) physical problems such as infertile soil, excessive shade, poor drainage, difficulties in maintenance and management, water shortage, close proximity to sea, animal damage due to lack of fencing, difficulty of obtaining plants, lack of know-how.

*Again, in the matters of intercropping the need emerges for an effective extension service to small-holders of coconut lands.*

### 3.4 Animal Husbandry:

- 3.4.1 Table VII indicates that with regard to buffaloes and cattle the lowest percentages ( 6 and 29) are in the category 1-2½ and the highest (16 and 58) in the category 5-10 acres. It reveals however that with regard to pigs and poultry the lowest percentages (2 and 13) are in the category 5-10 acres and the highest (7 and 16) in the category 1-2½ acres

Table VII: Animal Husbandry Associated with  
Small-Holdings in the Coconut  
Triangle, 1972

| Details                         | Total    | 1 - 2½<br>acres | 2½ - 5<br>acres | 5 - 10<br>acres |
|---------------------------------|----------|-----------------|-----------------|-----------------|
| Buffaloes                       | 24 ( 9%) | 7 ( 6%)         | 11 (11%)        | 6 (16%)         |
| Cattle (excluding<br>buffaloes) | 98 (40%) | 34 (29%)        | 43 (45%)        | 21 (58%)        |
| Pigs                            | 13 ( 5%) | 9 ( 7%)         | 3 ( 3%)         | 1 ( 2%)         |
| Poultry                         | 38 (15%) | 19 (14%)        | 14 (14%)        | 5 (13%)         |

- 3.4.2 Besides buffaloes, cattle, pigs and poultry, smallholders sometimes have goats. The object of collecting data on a holding basis to ascertain habitude in keeping various form of livestock and as an indication of the amount of interest which might be anticipated for a policy to encourage animal husbandry in association with coconut. (it is not intended to ascertain the livestock population).
- 3.4.3 The reasons given for not keeping livestock are varied:
- a) It is stated that plots are very small and therefore animals cannot be kept on any scale.
  - b) Sometimes a man is too old and has no one to look after the livestock as it is difficult to find labourers; also it is troublesome and there is no time.

A few of them said, that cattle might damage their plantation. Others stated that the climate was not suitable, that there was no good grass available, that the land was barren and the water supply insufficient or that there was difficulty in getting animal feed. There was also the question of ownership: one said that as the land was leased he was not interested. Another stated that it was temple land. Finally, there were people who said that they were not interested or their land is away from their house.

3.4.4 Small-holders feed livestock with grass, straw, poonac, poultry food and leaves. They do not grow grass for the following reasons:

- a) Labour - they have no one to grow the grass.
- b) Size of the plot is too small.
- c) Physical factors and management - the land cannot be spared for growing grass; there should be sufficient 'natural grass' available, dry weather and insufficient water supply. Other people gave as reasons: the land is barren, and the land is dry. Finally some people said that they did not have much knowledge of growing grass.

3.4.5 Some of the small-holders were of the opinion that it was not necessary to manure the grass; they stated that it was not the habit to manure; others said that manure was not available. (The low incidence of fencing noted in Table II may also be recalled here as a major factor).

3.4.6 Income derived from the sale of livestock was given only in a few cases. It ranged last year in Kurunegala from Rs.200/- to Rs.300/- (2 cases), in Puttalam from Rs.150/- to Rs.1,050/- (6 cases) and in Colombo from Rs. 60/- to Rs. 900/- (8 cases).

3.4.7 Hired labour to look after animal husbandry is an exceptional case. In Kurunegala 3 cases, in Puttalam 1, and in Colombo 9. (Livestock numbers on individual holdings are relatively small).

3.4.8 Finally, some information was sought about visits of extension officers to assist with animal husbandry. One Small-holder claimed a visit of an extension officer in 1971 and in two cases the answer was "I cannot remember".

*The general concensus was a complete lack of communication and advice on the subject of animal husbandry.*

### 3.5 Use of By-Products:

- 3.5.1 Only a small minority of the small-holders in the study derived any income from the sale of coconut by-products. Of the relatively small number (45) more were in the intermediate holding groups of 2½-5 acres than in the other two categories combined. Numbers are too small to draw conclusions but coupled with the similar situation in intercropping, the question may be asked whether the holdings of the 2½-5 acre groups are more actively searching for additional income *from their land* than the larger or smaller category?
- 3.5.2 The records also show that a slightly bigger population of large small-holdings sell their nuts with husks, i.e. one by-product goes off with the nuts, and this group also urges most strongly the reason 'that they have no one to attend to the preparation of by-products' or again 'not interested'.
- 3.5.3 The sale of husks and cadjan (palm roofing) together represent two-thirds of the by-products sold. Next come the alcoholic beverage 'toddy' and isolated examples of charcoal, shell, copra, coir and coir string and honey.

*Compared with Kerala in South India, home-industries associated with the coconut and its by-products are relatively undeveloped. There would appear to be scope for cooperative action in making and marketing facilities, as well as training, in this field.*

### 3.6 Credit:

- 3.6.1 Only 38 small-holders (15% of the sample) admitted receiving advances on the sale of nuts. The highest percentage of small-holders receiving advances of the three size categories, is 22% in the 5-10 acre groups compared with 19% in the 2½-5 acre groups and 15% in the 1-2½ acre groups.

Table VIII: Sources of Advances Received  
by Small-Holders

| Details                           | 1 - 2½<br>acre | 2½ - 5<br>acre | 5 - 10<br>acre |
|-----------------------------------|----------------|----------------|----------------|
| Multi-purpose Cooperative Society | 2              | 3              | 12             |
| Mill                              | 2              | 5              | 2              |
| Estate                            | 2              | 1              | 1              |
| Private traders                   | 97             | 81             | 19             |
| Total                             | 103            | 90             | 34             |

As seen in Table VIII most of the advances are made by private traders; there is usually a commitment for the small-holder to sell his nuts to the same dealer in return. It is noteworthy that 96% of the 1-2½ acre and 90% of the 2½-5 acre small-holders take loans from private traders but only 55% of the 5-10 acre holdings do the same. The latter group however take more loans from the Multi-Purpose Cooperative Society (35%) than the other two where the number of such loans is negligible. The reason for this is most probably the greater security for loan of the large holding groups. Only three cases of mortgage were notified (all below 5 acres); this indicates a reluctance to mortgage land for loans or a lack of serious financial need.

- 3.6.2 The terms on which credit is given will certainly be more favourable from the cooperative society than from the private trader. As the latter is in a strong bargaining position when he buys the nuts, the borrower from this source is at a disadvantage in respect of both interest rate and market price.

*Satisfactory Cooperative arrangements for credit and marketing, linked to the timely availability and delivery of the necessary inputs would assist small-holders, particularly those with under 5 acres.*

### 3.7 Agricultural Extension:

References have been made in almost all sections of the study to the need for agricultural extension, both in respect of efficient coconut production and for the introduction of other crops and livestock. Table IX records the number of extension visits to coconut small-holders in the sample.

Table IX: Visits of Extension Officers  
to Small-Holdings

| Detail                                 | Total     | 1-2½      | 2½-5     | 5-10     |
|----------------------------------------|-----------|-----------|----------|----------|
| No visit from Extension Officer at all | 178 (72%) | 79 (68%)  | 72 (76%) | 27 (75%) |
| No visit in previous 3 years           | 222 (90%) | 103 (89%) | 87 (92%) | 32 (88%) |

*The apparent neglect of the Coconut Small-holding Section of the agricultural community indicates the need for co-ordination between the extension agencies. 1/ Small-holders fall between the attentions of the Department of Agriculture and the Coconut Research Institute.*

*Virtually 90% of these small-holders had not been visited in past three years and 72% did not recall a visit at any time.*

### 3.8 Employment and Income:

It was hoped to obtain data on the employment and income situation in the three categories of holdings. In the case of employment it is certain that the national situation of large scale unemployment and under-employment is also reflected in these coconut small-holding families. The data collected indicated that 45-46% of the males, 15-60 years of age (excluding school boys) had no employment at all - the figure in the 1-2½ acre category was 30%. There are a large number of small-holders who combine their role on the holdings with other forms of employment and it became evident during this study that a much more detailed survey than the current one is required to ascertain accurately the employment situation. The same may be said for incomes; in respect of farm income the lack of accurate data on crop yields and production costs obtainable from most of the small-holdings in the sample indicates the necessity for record keeping comparable to that used for the Agrarian Research and Training Institute 'Cost of Production Study' 2/. This is beyond the scope of the present study.

### 3.9 Ownership:

- 3.9.1 Table X reveals that there is quite a lot of joint ownership in coconut lands. In the category 2½-5 acres, it is as high as 29%. Although the numbers and percentages give an impression of exactness it was not always crystal-clear. For example, an answer like this was not an exceptional case: 'There is a land case proceeding.... the number of owners cannot be stated'. It is significant that the highest percentage sole owners (80%) is in the category 1-2½ acres and the lowest percentage (66%) in the category 5-10 acres.

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1/ A Coconut Cultivation Board with an extension ~~area~~ has been established under the Coconut Development Act, 1972 and this, it is hoped, will lead to an improvement in the situation.

2/ Cost of Production of Paddy, Yala 1972 (A study based on record keeping farmers in five selected districts). K. Izumi; A.S. Ranatunge: Agrarian Research and Training Institute, 1973.

Table X: Ownership and Lease

| Details      | Total    | 1-2½<br>acres | 2½-5<br>acres | 5-10<br>acres |
|--------------|----------|---------------|---------------|---------------|
| Sole owners  | 183(74%) | 92(80%)       | 67(71%)       | 24(66%)       |
| Joint owners | 58(23%)  | 23(20%)       | 27(29%)       | 8(22%)        |
| Lessees      | 4(.1%)   | -             | -             | -             |

Table XI: Detail of Joint Ownership

|            | Number of Joint Owners per Holding |   |   |   |   |   |    |    | Total Out of a<br>Sample |     |
|------------|------------------------------------|---|---|---|---|---|----|----|--------------------------|-----|
|            | 2                                  | 3 | 4 | 5 | 6 | 8 | 13 | 16 |                          |     |
| Kurunegala | 4                                  | 1 | 2 | 2 | 1 |   |    |    | 10                       | 44  |
| Puttalam   | 5                                  | 1 | 2 | 1 | 2 |   |    |    | 11                       | 39  |
| Colombo*   | 15                                 | 7 | 2 | 5 | 1 | 2 | 1  | 1  | 34                       | 162 |
| Total      | 24                                 | 9 | 6 | 8 | 4 | 2 | 1  | 1  | 55                       | 245 |

\* There are 2 further cases in Colombo where the number of owners is unspecified.

3.9.2 More than twenty percent of holdings in all three categories are characterised by joint ownership. In some cases ownership is accompanied by leasing. In Kurunegala there is a case in which one acre of land is owned and another acre is Crown Land; this case comes within the limits of the category 1-2½ acres. Also in Kurunegala seven acres is leased in for Rs. 500.00; the landlord is a cultivator and his residence is in another DRO's Division.

In Puttalam there is a case in which the land was leased out by the wife to the husband for a period of eighteen years. No payment in cash or kind was involved! Thirty palms are leased out for one year in one instance for Rs. 210.00, in another instance forty palms are leased out for two years for toddy tapping for Rs.600.00. A further ten acres is leased in for Rs. 1,200.00 in one case and Rs. 1,000.00 in another. In still another instance the land is leased in for kind but the amount could not be ascertained. In Colombo there is a case where the land is leased out for Rs.300.00 per annum. In another instance it was stated : "sometimes the land is leased out".

- 3.9.3 Before the current survey the extent of the occurrence of joint ownership in coconut lands has seldom been highlighted although there are many references to the complex patterns of joint ownership in paddy lands. In the latter case there have been many suggestions that inefficiency is related to unsatisfactory conditions of land tenure (including joint ownership).

*It is reasonable to suggest that the same may be true in coconut lands but not to the same extent as in paddy lands.*

#### IV. COMMENTARY

To summarise briefly the findings on coconut small-holdings in the sample under the headings used in the analysis and to add observations made during the study of the area:

##### 1. Cultivation Practices:

The general level of cultivation practices in all the categories of small-holdings sampled confirms that many recommended practices are adopted only by a limited number of cultivators. While it is true that all practices may not be applied at all times, the efficiency of the practice actually carried out could also not be assessed in this study for obvious practical reasons. The wide presence of weeds, pests and disease is supported by field observations, but in the case of pests a general investigation like the present one can do more than point to the need for farmer education in pest recognition and control techniques. Although the inherent knowledge of many small-holders on coconut cultivations gained from long experience is accepted, there appears to be a lack of motivation and discipline for optimum cultivations, associated also with a lack of extension services. It may be concluded that if national needs for maximum productivity per acre are to be achieved, management and cultivation practices need considerable upgrading.

##### 2. Fertilisers:

Due to the nature of the register from which the samples were selected, 1/ no valid comment can be made on the general use of fertilisers. The wide range in the prices paid by farmers for transport indicates an unsatisfactory distribution situation.

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1/ Explained in 3.2.1

3. Intercropping:

Although about 40% of the total small-holders claim some degree of intercropping it is mostly confined to the growing of plantains for home and local consumption and on a limited scale, hardly justifying the title 'intercropping'. The involvement in growing of other crops and forage is small and there is enough evidence to indicate that much more intercropping should be done to increase the productivity of coconut lands. In this connection surplus labour is available although the capability and willingness of labour to undertake such work is not known.

4. Animal Husbandry:

Livestock of one kind or another is fairly well distributed among small-holders although actual numbers on each holding were not collected and in many cases these are observed to be small. From the replies to the questions in this section a certain ignorance of the practical science of livestock feeding and management is apparent; the need for advice through extension is evident and was expressed.

5. Use of By-Products:

The marketing of by-products and associated home industries which are associated with coconut growing elsewhere are singularly undeveloped. In view of the unsatisfactory employment situation the opportunity to increase family incomes in this way should not be neglected. As previously mentioned, co-operative action for training in new skills and for marketing would assist.

6. Credit:

The majority of loans are still taken from private traders - particularly in the smallest category of holdings, little credit being taken from cooperatives. Larger holdings however take more loans from the Multi-Purpose Cooperative Societies than the other two. The disadvantages of depending for credit on private traders are pointed out, and satisfactory cooperative arrangements for credit and marketing, linked to the timely availability and delivery of the necessary inputs would assist small-holders, particularly those with under 5 acres.

7. **Agricultural Extension:**

One of the principal factors emerging from this study is the lack of an effective extension service for coconut small-holdings. Other sections of this commentary express at a number of points the urgent need for farmer education resources for small-holders on coconut lands. The co-ordination of the various extension services to ensure the inclusion of the small-holders - in some ways the 'neediest' group - is obviously indicated.

8. **Employment and Income:**

Data on employment and incomes collected in this study agrees with others to confirm a high degree of unemployment and under-employment. In view of the critical nature of the employment situation and the growing disparities in farm incomes following the introduction of new varieties and new crops (some of which can be used to intercrop coconut), strenuous attempts should be made to gather research data at the micro-level.

9. **Ownership:**

The incidence of joint ownership, sometimes involving a group of persons, is recorded; in the case of coconut lands it is a relatively common occurrence. In a larger sample it would be interesting to explore the correlation between efficiency of holding management and ownership.

V. **CONCLUSION:**

In conclusion it may be said that if this study achieves a purpose it serves to highlight certain problems requiring speedy resolution, if estate lands are to be alienated as small-holdings under the Land Ceiling Law:

- a) Small-holdings on coconut lands display poor standards of husbandry; they can be improved by enlightened management, efficient cultivation practices, diversification, intercropping and livestock keeping.
- b) The present heavy reliance on private traders for credit, particularly on smaller holdings, indicates the need for ready access to credit from non-private sources on reasonable terms, to provide the required inputs for greater productivity.

- c) This in turn depends on a stronger institutional framework with cooperative action to obtain and distribute inputs, assist marketing and provide training.
- d) Farmer education is almost completely lacking in this sector and the productive use of coconut lands depends on a co-ordinated extension programme to assist with farm planning, scientific coconut culture, diversification and intercropping, as well as livestock keeping and improved use of by-products.
- e) Further research is indicated into the employment situation and the possibilities of crop and stock intensification and use of by-products, in providing more jobs and improving incomes.
- f) Further research is also indicated into the situation arising from joint-ownership of coconut lands and the resolution of associated problems.

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