

**REPORT
ON AN ANALYSIS OF RURAL LIVELIHOODS
AND POVERTY
IN TWO VILLAGES IN SRI LANKA**

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Map of Gamgavatta - part of Ihala Bopae GS Division

EXECUTIVE SUMMARY

1. This report presents the results of a study to examine the potential for smallholders to take up intensified intercropping of banana with immature rubber in Sri Lanka and the impact on poverty. A survey of current practices and attitudes to intercropping was conducted in two villages, with contrasting results.

2. In one of the two villages studied, Illukgoda, there is a high level of intercropping of banana with immature rubber, together with a positive interest in experimentation with intensified systems of intercropping and some evidence of green manuring of intercropped banana.

3. In the other village, Ihala Bopae, there is a low level of any intercropping of banana with immature rubber. The reasons for the lack of interest in intercropping in Ihala Bopae were not fully apparent during the study, but may be related to agronomic factors or to social and economic factors associated with the proximity of Colombo and of employment outside agriculture (see section 5).

4. The poor in the two villages studied include many of those households owning only a homestead plot which includes some rubber, and which have very minimal access to paddy land through time-sharing or tenancy. Such households rely heavily on unskilled labour on the part of the male household head, whether within the village (in Illukgoda) or outside the village (in Ihala Bopae). They represent about half the population in both villages and can largely be classed as below the poverty line or hovering around it.

5. Whether a household falls below the poverty line is affected by the size of their homestead plot and consequently of their home garden and rubber holding, and also their access to paddy land. The poverty line is estimated to be around 2000 - 3000 rupees per month if no income in kind is received (see section 6).

6. The very poorest households, which represent about 10% of the population in both villages and whose members in many cases probably belong to the lower castes, have minimal homestead plots and access to paddy land. Such households are often marginalised within the village, something which is associated particularly with lack of access to paddy land.

7. Not only the better off, but the poor who grow rubber on homestead plots are intercropping banana in Illukgoda (see section 7). This is being done without high capital costs; no chemical fertiliser is being applied and the major cost is the purchase of banana plants. Consequently, there seems to be potential for banana intercropping to benefit the poor who have large enough homestead plots to grow rubber.

8. The very poorest households, without access to land on which to grow rubber, may benefit from intensified intercropping of banana with rubber in two ways: the possibility of increased access to labouring work, and in some cases the possibility of contracting other households' immature rubber land for intercropping banana. The latter possibility was found to have lifted some households out of poverty in Illukgoda.

RECOMMENDATIONS

1. **This project seems to be a viable one in terms of potential uptake among smallholders, including the poorest smallholders.** However, the potential impact on the poorest, who have no agricultural land at all, is limited to availability of extra labouring work and the possibility, for some, of taking on immature rubber land on contract for growing banana. For this group, it is likely that provision of assistance with initial capital would be very helpful to enable them to take up this opportunity; it is possible that the new samurdhi banking association may be of some relevance here. Consideration should be given to how the project can encourage possible financial assistance through this route.
2. Since this project has the explicit aim of ensuring uptake (in contrast to the earlier project on which it builds), **it is strongly recommended that farmer participatory research be incorporated into the project**, in order to ensure that the agronomic research is designed, both initially and through the life of the project, in such a way as to ensure that its results are useable by smallholders, and particularly by the resource-poor. This is particularly relevant to the research into use of fertiliser and green manure; chemical fertilisers are likely to be unaffordable by poorer households.
3. Adopting a farmer participatory research approach will also make it more likely that there will be **a multiplying effect through neighbouring farmers replicating the systems developed through the project.** This is the optimal initial uptake pathway, and can provide lessons which can be utilised in designing other uptake pathways including demonstrations and seminars. There are grounds for believing, from the data collected in Illukgoda, that farmers are able and willing to carry out experimentation on systems of banana intercropping in their own fields, and into green manuring.
4. It is recommended **that farmer participatory research be carried out, ideally, in two or three sites, chosen to reflect differences in agronomic conditions and in social and economic context.** Criteria used might include differences in soils, access to towns, caste composition, and in level of interest in banana intercropping. Within each village, smallholding families should be chosen from among those with very small, homestead plot-based, rubber plots, and also those with larger, separate rubber plots, to take into account differences in social and economic levels, their significance for attitudes and decision-making style and also differences in management of the two types of rubber plot. Those who have taken on immature rubber land to grow banana under contract could also be included. Ideally, in order to ensure that there is a focus on the needs and criteria related to the majority who have plots smaller than five acres, it is not recommended that families with plots larger than this be included, although for reasons of local politics this may be inevitable.
5. **Farmer participatory research needs to be accompanied, in the same villages, with in-depth social anthropological analysis** of the social and economic context, in order to contextualise the attitudes and decisions made by smallholders and to predict how to proceed with the study, redesigning aspects of it as necessary. This analysis would ideally be done through long-term residence in the villages concerned, perhaps by a student registered for a Ph.D. in Social Anthropology, but might alternatively be done through occasional visits on the part of the UK-based person responsible for social aspects of the project, together with regular data-gathering under guidance from the UK on the part of RRI staff (who would not be social scientists) involved in the project.

1. INTRODUCTION

1.1 The intention of this study was to look at the potential for smallholders to take up intensified intercropping of banana with immature rubber in Sri Lanka and to consider the extent to which the impact of such uptake would be poverty alleviating. This is part of and preparatory to a project to be funded under the Plant Sciences Research Programme which is intended to identify agronomic practices suitable for adoption by low-resource farmers and aimed at improving income generation. This project builds on an earlier project, also funded by the Plant Sciences Research Programme, which showed that high density intercropping of immature rubber and banana can increase profits by more than 350% over the present system of rubber/banana intercropping in Sri Lanka, currently recommended by the Rubber Research Institute and Rubber Development Department of the country.

1.2. Methodology

1.2.1 It was decided that the study should take the form of a survey of current practices and attitudes to intercropping in two villages, one of which is in Colombo district and the other in Kegalle District, both rubber-growing areas. The villages studied were Ihala Bopae near Padukka in Colombo District and Illukgoda near Mawanella in Kegalle District. Both were entirely Sinhala villages. These villages were chosen because they are in two of the four major rubber growing districts and because the rubber development (i.e. extension) officers responsible for the areas in which they fall, were known by Dr. Rodrigo to be particularly competent.

1.2.2 The rubber development officers assisted the team during fieldwork, introducing them to rubber-growing families and setting up meetings with rubber growers. I had, before the study began, asked Dr. Rodrigo to arrange for some basic data on each household in the villages to be collected, and the rubber development officers took this task on. It was completed in Illukgoda, although unfortunately not in Ihala Bopae.

1.2.3 Before going out to Colombo, a week was spent in the UK reading anthropological and other literature on human geography, land tenure and social organisation in Sri Lanka. The study itself was undertaken between 1st and 18th October 1997. The team spent six days working in each of the two villages studied. The fieldwork included interviews with individual informants representing households at different income levels (around 15 in each village) and meetings with focus groups of rubber growers and with poorer people who receive assistance under the Samurdhi programme (a poverty alleviation programme targeted at households below the poverty line). Maps of the villages were made with participants in the meetings.

1.2.4 In addition, an interview was carried out in Colombo with Professor Marcus Karunanayake, Professor of Human Geography at the University of Sri Jayewardenepura.

1.2.5 Some of the fieldwork in one of the villages was carried out together with Ann Gray of NRI, who was carrying out a study of marketing of banana for this project during a period which overlapped with the period of this study.

1.3. The study area

1.3.1 Although the rubber-growing districts are in the Sinhala part of Sri Lanka, it is true that the large estates in that part of the country have, since the 19th century, employed Tamil labourers imported from southern India. These people are among the very poorest

of the rural poor. However, they will not be affected by banana intercropping by smallholders in Sinhala villages in the area. They do not have access to land appropriate for banana intercropping, and they are not involved as labourers on small holder plots. Therefore, despite their poverty, there was no rationale within the present project, for making a study of their situation. The statement must simply be made that these poor people will not benefit from the impacts of this project.

1.3.2 Ihala Bopae is a Grama Sevaka (G.S.) Division, and contains three sections, Vevilkatiya, Gamagevatta and Ihala Bopae. It is within an hour and a half's drive of Colombo. Gamagevatta and Vevilkatiya may have originally been separate villages, but Ihala Bopae is really just a hillside of poor quality land which has been recently settled by in-migrants to the area. The three sections of the G.S. Division are not clearly delineated, and settlement is, nowadays, more or less continuous, interspersed with paddy and highland.

1.3.3 The information we received with regard to the number of households in Ihala Bopae G.S. Division was contradictory. One source estimated 30 households in Gamagevatta, 50 in Vevilkatiya and about 80 in Ihala Bopae; a total of about 160 households, while a different source estimated a total of 270 households. It would seem from data collected during mapping sessions that the first estimate is more accurate.

1.3.4 Illukgoda consists of 134 households. By contrast to Ihala Bopae, it is surrounded by agricultural lands and is clearly separated from neighbouring villages. It is part of the G.S. Division of Vegantale, together with the neighbouring village of Vegantale and three newer settlements. In addition to Illukgoda itself, some fieldwork was carried out in one of these new settlements, Renuketugama.

1.3.5 Whilst livelihoods in Illukgoda are very largely agricultural in some way, many people in Ihala Bopae have employment in non-agricultural sectors such as factories, although few travel very far from the village for employment. While 75% of farmers in Illukgoda were estimated by the rubber extension officer to be full-time farmers, the samurdhi organiser in Ihala Bopae said that most of the people in that area are part-time farmers. Thus the two villages provided a useful contrast in terms of the relevance of agriculture to livelihoods.

1.3.6 The two villages also provided a contrast, as it turned out, in terms of the relative significance of banana intercropping. While there is very little intercropping of banana with immature rubber in Ihala Bopae, it is more or less universal at the moment in Illukgoda. This meant that it was possible to look at reasons for and against intercropping banana and at the social and economic implications of intercropping. It was also possible, in Illukgoda, to look at current levels of intensification of banana growing and at patterns of intercropping; and to ask farmers their opinions regarding intensification of intercropping in a context where they were already practising it.

1.4 Limitations of the study

1.4.1 Because of the short time period involved, the data gathered are necessarily based on a rapid assessment of the social and economic factors operating within the villages concerned. For in-depth knowledge, longer-term fieldwork, either carried out through a number of shorter visits or through a longer period of continual residence, would be necessary in order to fully understand the subtleties of social and economic interactions.

In this type of short-term study, there is a tendency on the part of villagers and administrators to project the ideal. Hidden factors which may be influencing people's attitudes and decisions are not easily discovered using techniques of direct interviewing or group discussion. Certain areas, such as caste and its relevance to land tenure and innovativeness, are particularly difficult to get data on in this manner.

1.4.2 Also, because of the short period of the study, qualitative data, which are quite properly gathered first of all in order to enable a general understanding of the context to be achieved, have not been followed up by quantitative data-gathering, which can usefully be carried out in longer periods of fieldwork in order to confirm qualitative data.

1.5 The Maps

1.5.1 Maps were made at one session in Ihala Bopae - a meeting of samurdhi (poverty relief) recipients convened by the samurdhi organiser for the G.S. Division. In Illukgoda, there was a series of map-making sessions: meetings with rubber growers convened by the rubber research officer and later assistance from one of the samurdhi organisers for the village.

1.5.2 In Ihala Bopae, participants at the meeting were split up into three groups, resident respectively in Gamagevatta, Vevelkatiya and Ihala Bopae (the area of Ihala Bopae G.S. Division which is called Ihala Bopae). Each made a separate map of their area, which varied a good deal in quality. The three maps have been amalgamated for presentation here, but that for Gamagevatta, which was the most detailed (although it is in many places not to scale) is also included.

1.5.3 The maps of Ihala Bopae G.S. Division show two main things: the concentration of settlement in the Ihala Bopae area, where settlers from outside have come in to join already poor people living on a hillside of poor land; and, in the map for the Gamagevatta area, the fact that practically all homestead plots incorporate some rubber. The proportions of land devoted to rubber and to paddy are also evident, with rubber covering perhaps two-thirds of the land area. The actual levels of ownership of paddy and rubber land are not, unfortunately, very evident from the maps, although closer attention does reveal some of this for the Gamagevatta map. The map of Gamagevatta shows, in some cases, whether rubber is mature or immature, but this was added following the transect walk through the village, and was not put in at the mapping session.

1.5.4 Two transect walks were carried out in the Ihala Bopae G.S. Division, one beginning at the far western side or Vevelkatiya, following the road for a distance and then climbing the hill above it and finally down the other side of the hill through Ihala Bopae; and the other beginning at the top of the Janusavi road, following the Janusavi road southwards, then turning left at the bottom along the Bopewatta Road and finishing at the Ingirinya-Colombo road. These walks have not been drawn separately as transect walks, however, because they were not in straight lines and the altitudes are therefore somewhat confusing. They are shown on the map, however. They did enable a clearer picture of the structure of the area to be achieved on the part of the study team, and revealed some details which had not come out at the mapping, including the use of Crown land at the top of the hill for earlier cassava growing.

1.5.5 Just one map was made of Illukgoda, and it is reproduced exactly as it was made; in the last session it was copied out on to another sheet, so it has come out reasonably tidy.

The samurdhi organiser who assisted in the final stages, together with Dr. Rodrigo, transcribed the Sinhala which was on the original, into English.

1.5.6 The map of Illukgoda was made in conjunction with a household list giving the size of homestead plots and the use to which they are being put. The households are numbered (unfortunately with limited legibility) on the map and the numbers correspond with the numbers on the household list (see appendix). It is clear from this list that many households here, as in Ihala Bopae, plant rubber on their homestead sites, particularly if they are larger than about half an acre.

1.5.7 There appears to be proportionally rather more paddy land in Illukgoda than in Ihala Bopae. For this map, the immature and mature rubber land are shown, although the planting of rubber on homestead sites is only apparent in the household list; all immature rubber land is said to be intercropped with banana, although this is not evident from the household list for homestead sites where rubber is grown.

1.5.8 One transect walk was made in Illukgoda, which began at the eastern side of the village on the road and went north, climbing a hill which forms the northern border of the village, and coming down the other side into paddy land behind the temple. This walk, like those in Ihala Bopae, was not in a straight line so it has not been drawn separately as a transect walk, although it is shown on the map.

1.5.9 Houses where informants were interviewed are numbered on the map of Ihala Bopae; for Illukgoda, they are noted on the household list.

2. BACKGROUND

2.1 The cultural significance of crops

2.1.1 In order to understand the significance of intercropping of banana with rubber in the villages studied, it is important to consider the historical and current significance of rubber growing and of other agriculture, including banana growing and paddy cultivation. Livelihood choices made with regard to rubber and banana are not made in isolation, but in this broader context. To understand these choices in the two villages chosen for the study, and by implication in other villages as well, all options available to villagers need to be taken into account, and cultural as well as purely economic reasons for choices need to be considered.

2.1.2 In this context, paddy cultivation is of significance because of its focal cultural position. Paddy cultivation has a special cultural significance in Sri Lanka, because rice is the ideal staple food and it is given particular attention both by the government and by villagers themselves. Although it is not, we found, regarded as being a sensible economic choice by villagers themselves, it is nevertheless a choice which villagers regularly make, and is one which affects their economic position, possibly even adversely, but improves their social position.

2.1.3 It is important to understand the significance of access to paddy land as a factor in the generation of poverty. The ownership of paddy land, which was traditionally, and still is to a large extent, associated with high (*goigama*) caste, may be seen as conferring full

membership of the village community, and is for this reason closely linked to the maintenance of the status and self-confidence which staves off poverty.

2.1.4 Although in economic terms it is the ownership of rubber land which is most significant in maintaining the standard of living of a household, few respected families are without paddy land and most invest their own labour in these fields, thus diverting it from the more lucrative rubber. Families which are involved in the hand-to-mouth, downward spiral of extreme poverty rarely have any paddy land, depending entirely on casual labour, and this seems to be associated with the fact that they are regarded by other villagers as feckless and unable to plan for the future.

2.2 The inheritance and ownership of land

2.2.1 There are two broad categories of agricultural land in Sri Lanka; paddy land and 'highland'. The latter is used for cash crops; the former, on which rice is grown, is used for subsistence, since most households, except in irrigation schemes like the Mahaweli scheme, do not sell rice in any significant quantities, but consume it within the household.

2.2.2 It has been argued (Obeyesekere 1967) that originally the inheritance of paddy land (the only land which was actually owned until the 19th century) was patrilineal, with women marrying out of the village and not receiving land. However, bilateral inheritance has become the partial norm for both paddy land and highland, and technically women now receive shares of the land owned by their parents, equal to those of their brothers. However, this can be altered by wills. In the villages studied, we found that there is still a clear moral norm to allow brothers to inherit land over and above sisters, particularly where the sisters have married out of the village. This mitigates somewhat the fragmentation of land.

2.2.3 In the past, before the latter part of the 19th century certainly, highland was not owned or inherited. It was used for swidden cultivation of food crops, mainly of millet, and was a free good. Only paddy land was subject to ownership and inheritance. Nowadays, highland too is owned and transmitted through inheritance.

2.2.4 Paddy land was, until the 1960s, held universally under a system called *tattumaru*. This involved the ownership not of specific pieces of land but of shares (*pangu*) in an 'estate' (*gama*, the same word used for 'village'). The system was based on the rotation of the parts of a field between different share-owners so that all have equal access to good and bad land.

2.2.5 Although the system has partially broken down with the partitioning of land since the 1960s, we found that perhaps a third of land in Ihala Bopae and most land in Illukgoda is still held under a slightly altered system of *tattumaru*. The system ties the owners of shares together quite closely on a social as well as an economic level and was the basis of the coherence of the village. Owners of shares would have belonged originally to one of the cultivating castes, mainly the *goigama* caste, and the system would have reinforced and justified the caste system and differentiation. Even nowadays, it is likely that there is a considerable coincidence between membership of cultivating castes and land ownership.

2.2.6 Under the feudal system which existed in the interior of Ceylon around Kandy until the British finally conquered that area in the 19th century, paddy land was either owned outright, under the *tattumaru* system, by villagers, or was granted to lords - the

radala class (of *goigama* caste, like the villagers themselves). The lords received part of the crop and were also entitled to have certain of their paddy lands cultivated for free by their share-cropping tenants. In other parts of Sri Lanka, however, where the feudal system did not exist, all paddy lands were owned by villagers. In Illukgoda we found no evidence that paddy lands were held in large blocs under the feudal system, although this village belongs to the Kandyan lands.

2.2.7 Highland, on which cash crops including rubber are grown, is now almost universally owned by someone. The process through which highland has been converted from a free good to Crown land, to individual ownership is discussed below (4.1). It has, through the process of distribution of homestead plots as well as through purchase from the Crown, come into the possession of smallholders. Although it is not owned through *tattumaru* as is paddy land, it too is subject to being held through shares - this can apparently be registered in the deed to the land.

2.2.8 Share-holding in highland comes about when a group of siblings do not wish to divide the highland belonging to their parents and agree to share the proceeds of its exploitation. We came across a number of cases where highland is being held in common by a group of siblings or even by a group of grandchildren, who have not yet been able to come to an agreement to divide it. Siblings may decide to live together on undivided land and use different bits of the plot for their homesteads and rubber lands; there are cases of this kind in Illukgoda and Ihala Bopae. Or one or more siblings may stay on the land but give some of the proceeds of the crop to non-resident siblings. Disputes are not uncommon related to division of highland, particularly, it would seem from our data, between grandchildren of the original owners of a plot. In a number of cases we found that this has led to delays in replanting rubber land.

2.2.9 Highland is nowadays much more valuable than paddy land, and it is this land which forms the bulk of large estates in the rubber growing areas. Large estates have different histories: some were British owned, some were owned by *radala* families, some were built up by commoners who were successful enough to buy large amounts of land. The Land Reform of 1972 established a ceiling of 100 acres per person for privately owned estates. However, this was per person and thus allowed a good deal of land to be retained by big landowners.

2.2.10 Since Independence, most large estates, particularly those which were foreign owned, have been taken over by the government of Sri Lanka. However with current liberalisation policies, these are being re-privatised. In both Ihala Bopae and Illukgoda there are medium sized estates of between 40 and 100 acres. In Illukgoda there is an estate held by a *radala* family (the Beligamana family) and evidence of other estates which have recently been broken up, either following the Land Reform Act or through sale for reasons which were not established. These estates are looked after by managers who employ tappers and labourers to weed etc. from neighbouring villages or using labour accommodated on 'lines' of houses on the estate itself. Although the largest estates, particularly those which used to be British-owned, use Tamil labour, the one 'line' which we saw, in the Henvarella estate in Illukgoda, was inhabited by Sinhala from neighbouring villages. Its inhabitants are, in fact, economically active outside the estate as well as on it.

2.3 The gender division of labour in Sri Lanka

2.3.1 In a general sense, men work outside the household more than women in Sri Lanka, and this particularly applies to work outside of household land. It seems to be seen as something regrettable, and of low status, if women have to work as wage labourers outside their own household land, whether this is owned or rented (for paddy land). A number of women belonging to landless households in Ihala Bopae village, expressed a desire to work outside the household, but said that their husbands would not permit it. It is clear that some poorer women do actually work outside the household; this was discussed at the meeting of samurdhi holders which we attended in Illukgoda. This work includes tapping and some labouring work, for example weeding and fertiliser application in banana plantations.

2.3.2 However, both men and women do work in agriculture within their own household land, although they appear generally to work separately and often at different tasks considered appropriate for their gender. Men do heavy work, both in paddy cultivation and in cash crop cultivation, more than women, although examples were quoted to me - with some admiration - of women doing all the work in a rubber plantation which they had established themselves.

2.3.3 In paddy cultivation, both men and women have their roles, although it would appear that in the past, and to some extent nowadays as well, men are more closely associated symbolically with the paddy. Even in the sixties, the threshing operation, which is considered particularly significant on a spiritual and quasi-magical level, was restricted to men, and women could not even enter the threshing floor.

3. THE SOCIAL AND ECONOMIC SIGNIFICANCE OF PADDY GROWING

3.1 Paddy land only represents about a third of the total land area belonging to the two villages studied and they are probably typical in this respect. However, Sri Lankan agriculture is focused, symbolically and to a large degree in practice, on the cultivation of rice in wet paddy fields. This is true in both the Wet and the Dry Zones of the country. The government of Sri Lanka is concerned that the country should be self-sufficient in rice and it encourages paddy cultivation. It is, in theory, required that a farmer get permission to turn paddy fields into something else. In fact, we saw some paddy fields which are being used for the cultivation of bananas (a crop which is said by farmers to give a much better economic return for labour and money invested than rice), but these are at the tops of irrigation systems where the land tends to be driest and most difficult to cultivate with paddy. Although clearly the limitations placed by the government's emphasis on rice on the conversion of paddy fields must have some impact, it did not appear that farmers who had begun growing banana had received permission and it is probable that more paddy could be used for banana without problems from the government side.

3.2 Both the government and the village attitude to the growing of rice may be said to illustrate the importance, socially and symbolically, of rice; after all, from the government's point of view, if cash crops were grown instead of rice in paddy fields these crops could potentially be sold on the export market and rice bought with the proceeds, without affecting the balance of payments. Rice is the ideal staple food, and to a large extent really is the staple food nowadays; in the past, when swidden fields ('chenas') were a significant source of food, millet was also of considerable significance, but swidden has

been discouraged by the colonial British government and by the post-Independence government and is of negligible significance in the Wet Zone now, although it is of some importance still in some parts of the Dry Zone.

3.3 In the past, villages were settled around an area where paddy fields could be made. It is around the wet paddy fields of a village that it coheres, and ownership of wet paddy fields is still associated with proper 'citizenship' of a village community. Near Illukgoda there is a new settlement, Renuketugama, of families who originally squatted the land of a dispossessed *radala* (aristocrat) family in the 1970s, following the 1972 Land Reform Act, and have now been granted possession of the land. These settlers have created paddy fields from a stream which runs through their area, and there is the sense that this has made the settlement into a proper village. They could have used the land for the cultivation of cash crops; but they chose to create paddy fields instead.

3.4 We were explicitly told by many informants in both of the villages studied that the cultivation of wet paddy fields is not a sensible economic proposition, and that they would prefer to invest, on an economic level, in highland where they can grow cash crops. However, despite such statements, people still retain ownership of paddy land and also buy paddy land. A number of informants told us that they would 'never ever' sell their paddy land. There is still the sense that without any paddy land a family are not quite proper citizens of their village. It is prestigious to be able to eat rice which your household has grown.

3.5 Ownership of even a little paddy land is associated with higher status and with belonging to higher, agricultural castes (especially the *goigama* caste) rather than lower, service castes, and for this reason it has a social significance out of proportion to its economic significance. Immigrants to a village under the government resettlement schemes which have existed since the early part of this century are often of lower caste, and they do not own paddy land (Spencer 1990). They do not, consequently, participate in the exchanges of work between families through which paddy cultivation is organised, and which are based on neighbourhood and kin ties.

3.6 The size of paddy holdings

3.6.1 With increasing bilateral inheritance of land since the 19th century (Obeyesekere 1967), shares have become so small that they have become time-shares as well as shares which are rotated around a field; families may own a share which entitles them to use a certain size of holding every so many years. There is no doubt that paddy cultivation has diminished in economic importance in most areas with the fragmentation of shares. Shares are frequently less than an acre, and if they are also held on a time-share basis they do not provide more than a small proportion of the total requirements in terms of rice for a family.

3.6.2 In both Illukgoda and Ihala Bopae, there is extreme fragmentation of paddy lands, due to population increase and bilateral inheritance. About half of the paddy in Ihala Bopae, and 80% in Illukgoda is, we were told, still held under *tattumaru* and a large proportion of these are held under time-shares. The tenure of paddy, given the system of *tattumaru*, is extremely complex, and no effort was made to try to untangle it because this would have required much more time. It was clear, however, that it is a minority of households which have as much as an acre of paddy land available to them to cultivate every season, and a more usual plot is about a quarter of an acre every few years.

3.7 Tenancy of paddy lands

3.7.1 A certain amount, and in some areas possibly a large amount, of paddy land, is cultivated by tenants under arrangements which are, even now, often exploitative (Karunanayake, personal communication). This is despite the law which, since the 1970s, lays down rules which are supposed to establish the rights of the tenant. Traditionally, tenancy was based on a sharecropping arrangement where the tenant gave half of the crop to the landlord and the landlord provided the seed; half-and-half sharecropping was reported by informants in both the villages investigated, but it was not clear which side provided the cost of the seed and the (now not inconsiderable) cost of the fertiliser and other chemicals. It is possible that more exploitative arrangements existed and were not reported, or that such arrangements prevail in more remote areas than Kegalle and Colombo.

3.7.2 The extent of paddy holdings and of tenancy in the country as a whole is difficult to ascertain, since it is likely that even where data are gathered on this issue they will not be accurate because of *tattumaru* and because of the non-reporting of tenancies. Some literature reports large holdings of paddy by small, presumably in-marrying kin groups in some villages in the 1960s (Ryan 1953), and it is clear that in the 1960s, at least, there was keen interest on the part of such kin groups, which Obeyesekere calls *pelantiya*, to gain control of large proportions of the shares in village paddy lands (*gama*) (Obeyesekere 1967).

3.7.3 We were told by Prof. Karunanayake that tenancy is very widespread. However, it would seem likely that there are localised differences. In the villages which we investigated, we did not encounter what appeared to be large holdings, but in the short space of time involved we were not able to establish what kin groupings of the *pelantiya* type might have existed and might have implied the effective concentration of blocs of paddy land in a limited number of households.

3.7.4 In Illukgoda, it was estimated to us by one informant that about half of all paddy land is held under tenancy. Despite this, none of the informants interviewed told us that they were tenants, although some told us that they had tenants. This is an area where it is difficult to obtain data by direct questioning because of the probable lack of desire to admit to being a tenant. In Ihala Bopae, no informant gave us an estimate of tenancy and it may well be less common than in Illukgoda because of the availability of more lucrative outside work. However, it must be emphasised that there is a preference, among the rural Sri Lankan population, for eating rice grown by one's own household, and this is likely to mean that people take on tenancies where this might not seem sensible economically.

3.7.5 Before Independence, tenants of paddy land often held the land on a long term basis (unless of course the land concerned was held on a time-share basis by the owner, which would not have been as common at that time). However, Acts passed since then, and in particular the 1958 Paddy Lands Act, have attempted to strengthen the lot of the tenant, establishing the right of the tenant to take over the land as owner if the land is tenanted for a substantial period of time. However, the result of this is that nowadays tenants are only taken on for a year at a time for fear of their taking over as owner. This is undoubtedly problematic for the tenant, who has no security of tenure and cannot invest systematically in maintenance of the paddy field.

3.7.6 Tenancy of paddy land is associated with poverty. It is one of the options available to those who have no land of their own, and particularly where there is little alternative work as is the case in Illukgoda and many other Sri Lankan villages which are not close to large towns.

3.8 The organisation of labour in paddy cultivation

3.8.1 In Sri Lanka paddy is both broadcast and transplanted; in Ihala Bopae we found that it tended to be broadcast whilst in Illukgoda it appeared to be universally transplanted. The sowing of seed appears to be done largely by men, but where it is transplanted this is done by women. Men carry out the harvesting. Threshing is very much a male activity; it was in the past and appears still to some degree to be seen as unlucky for women to be involved in threshing. Preparation of the paddy fields for cultivation, ploughing or trampling using buffaloes, and repair of earthworks is done by men.

3.8.2 Transplanting, where it is carried out, as in Illukgoda, and harvesting are performed using workgroups based on the exchange of labour between households, utilising neighbourhood and kin ties. As stated above, these arrangements reinforce the social structure of the village and the delineation between those who have paddy land and those who do not and who do not have the opportunity to generate or underline these ties.

3.8.3 Households which own paddy land tend to do most of the work in the fields which they are cultivating themselves using household labour. It is only where they let fields out under tenancy arrangements that they do not do the majority of the work themselves. This is particularly true for work done through exchange of labour - transplanting and harvesting - since this is a social occasion where members of households should participate.

3.8.4 However, we were told that it is possible to hire someone to take the place of a member of the household in a workgroup involving labour exchange although we were not able to establish the extent of this practice. When it does happen, we were told that one female labour-day is worth a little more than a male labour-day and the amount paid to the person replacing the household member is more or less the same as that paid for other labouring jobs.

3.8.5 This means that another option for the poor is to replace members of other households in workgroups. However, this is probably not very common since the reason households actually cultivate the land themselves is partly to maintain membership of the social and economic networks associated with the workgroups.

4. SMALLHOLDER RUBBER CULTIVATION

4.1 Chena cultivation and the development of cash cropping

4.1.1 In the past, before the 19th century, swidden fields, called 'chenas', were of considerable importance in the subsistence economy: they were used for the cultivation of food crops including millet. Although rice was the high status grain, in practice most people probably relied heavily on millet grown in chenans (Spencer 1990). This would have been particularly true for the poorer members of village communities, who tended to be latecomers and not to have any paddy land; but it would appear that most villagers engaged in some chena cultivation.

4.1.2 Since the 19th century and the introduction of tea and rubber in particular, chenas have, in the Wet Zone as well as the Dry Zone, gradually become permanent fields where cash crops are grown. Cash crops include a number of locally very significant minor crops, which vary from place to place, but tea and rubber are the two most widespread cash crops.

4.1.3 The land on which chenas were made in the past, and on which cash crops are now grown, is often described as 'highland' in Sri Lanka. It was deemed under the British colonial period to be Crown land. The British tried to stop chena cultivation and, in the latter part of the 19th century and early part of the 20th century, distributed and sold large tracts of highland to companies and individuals for plantations, mostly for rubber and tea.

4.1.4 The result of the sale of Crown land was that 'highland', which could now be profitably used for cash crops, became concentrated in the hands of larger landowners, both owners of large estates and smaller scale, but locally well-off, landowners at village level. Purchasers of Crown Land included both well-off insiders to the village and outsiders who had made good through, for example, gemming (Spencer 1990), who bought relatively large areas of land (within the village context) and began to grow cash crops. 'Highland' could only be legally used for chena cultivation under licence, and as cash cropping became more widespread it became more valuable. Highland which was cultivable was usually owned, and was unlikely to be used for subsistence chena.

4.2 Smallholder rubber growing in Sri Lanka

4.2.1 The most important rubber-growing areas in Sri Lanka are the districts of Colombo, Kegalle, Kalutara and Rathnapura. In these districts, rubber is an important source of cash income for village smallholders. Rubber also provides work for larger numbers of rubber tappers, who work both for large estates and for smallholders within the village. The latter may have more paddy and rubber land than they can manage using household labour alone, or are well-off enough not to engage in the rather low status job of rubber tapping.

4.2.2 Whilst it is recommended by the Rubber Research Institute and the Rubber Development Department that trees be tapped only every other day, in practice we found that most smallholders tap every day in dry weather (tapping cannot be done in wet weather). Rubber tapping involves about five hours' work at most a day: an early morning cut to the tree and, in the later morning, the collection of the resulting latex. Rubber can be processed either at household level by making smoked sheets or in factory conditions after the collection of the raw latex at collection points in the village.

4.2.3 In Ihala Bopae, both methods of processing exist; in Illukgoda, there are a couple of rubber processing factories in the area and it would appear that all latex is processed there. It seems that the difference in price between smoked sheets and raw latex is so small that it is not seen as worthwhile by smallholders to do the processing themselves if latex collection are easily accessible.

4.2.4 It would seem that tapping is, nowadays, done throughout the year, although earlier types of rubber tree were supposed to be left over the 'winter' (when they were leafless) and not tapped during that period. However, much rubber is now clonal rubber which can be safely tapped throughout the year. The limitation on tapping is the weather: it cannot be done in wet weather.

4.3 Homestead plots: subsistence plots and rubber plantations

4.3.1 Although initially rubber, like other cash crops, was grown on large estates, it has gradually become a smallholder cash crop as well. From the 1930s there was a policy of 'peasantisation' on the part of the State, which was aimed at expanding the small scale family farming sector at the expense of the plantation economy (Moore 1992). The State used its reservoir of Crown land and taxes from cash crop exports to provide homestead plots for the landless in more densely populated areas as well as to develop irrigation colonies in the less densely populated Dry Zone. This policy has continued since Independence and remaining pieces of Crown 'highland' are still being distributed as homestead plots to the landless.

4.3.2 The 1972 Land Reform Act, which limited the size of holdings to 100 acres, meant that even more land was released for distribution to the landless. This land is still in the process of being distributed. We visited a settlement just outside Illukgoda village, Renuketugama, which was originally established in the mid-1970s by people who took the law into their own hands and squatted on land expropriated from a large estate, but where their tenure has recently been regularised.

4.3.3 The homestead plots which were distributed by the government in the early part of the 'peasantisation' process were quite large, of up to five acres. More recently, much smaller plots have been distributed; we visited families in Ihala Bopae who had received plots of around 10 to 20 perches (one sixteenth and one eighth of an acre), and the people in Renuketugama have been officially allocated 40 perches (one quarter of an acre).

4.3.4 Homestead plots form a significant proportion of the total proportion of the land held in villages in Sri Lanka, as can be seen from the maps of Illukgoda and Ihala Bopae prepared by members of the community during fieldwork. Homestead plots are used primarily for 'home gardens', which are extremely important for the subsistence economy of a household; we were told by informants in Illukgoda and Ihala Bopae that their home gardens were solely used for subsistence purposes.

4.3.5 A wide variety of crops, mostly tree crops, is grown in the typical home garden: coconut, king coconut, areca nut, cloves, pepper, mango, pomegranates, avocado, coffee, banana, mangosteen, jackfruit, betel leaves, rambutan, pineapples were the crops which we listed from one reasonably well-off home garden of around one acre. Having a good home garden can make the difference between poverty and being able to manage.

4.3.6 However, we found that where the plots around houses are bigger than about one or two acres, home gardens tend to merge into rubber plantations. In other words, for subsistence purposes about one or two acres is adequate for a family, and where a household has more than this they will devote the extra to cash cropping. Homestead plots are used for both subsistence and cash cropping, and where they are used for cash cropping rubber is the most significant cash crop.

4.3.7 The current maps of Illukgoda and Ihala Bopae show that at least two thirds of households only own rubber land as part of their homestead plots. Perhaps a third of households also own plots which are sited away from their household. Most of the plots on which rubber is grown are less than a couple of acres in extent, and a number, forming part of homestead plots, are certainly as small as a quarter or half an acre. However,

rubber plots do tend to be bigger than paddy holdings, particularly when the time-share system of *tattumaru* is taken into account.

4.3.8 Homestead plots, then, are very significant in the smallholder rubber-growing sector in Sri Lanka. They are not managed in the same way as plots of land used for rubber away from houses: there is a tendency to intercrop among the rubber in homestead plots in a way which does not occur to the same degree, or at all, on separate plots of rubber land. This means that in the expansion of rubber and banana intercropping homestead plots need a) to be taken into account and b) to be handled differently from rubber-only plots.

4.4 The organisation and employment of labour in rubber cultivation

4.4.1 When a rubber plantation is first established, there is a good deal of heavy work to be done initially in felling previous vegetation, in fencing the area, in establishing terraces on sloping land (most rubber land is sloping), and in making holes and planting the young trees, and in establishing cover crops. All of this work has to be done to a certain standard in order to obtain the government rubber subsidy, whose value covers about half of the cost of replanting including the estimated cost of labour. This work is mainly done by members of the household (mainly the men), if the amount of land owned is small - probably, judging from what informants, including the rubber development officers told us, up to about one, or at most two acres - but if the area is larger, labour may be hired.

4.4.2 However, we were told by the rubber development officer in Illukgoda that many households cannot afford to hire enough extra-household labour to do the work adequately. Since no informants told us that they had been refused the rubber subsidy (although this may have been affected by the presence at many interviews of the rubber extension officer), it seems likely that some rubber development officers use some latitude in granting the rubber subsidy. This is what the officers themselves told us. Where the plot of land is covered by existing, senile rubber trees, it is possible in many cases for the timber to be sold, and in this case the purchaser, which is likely to be a company, fells and removes the trees. The price paid varies a good deal, but can, according to one informant in Illukgoda, be as much as 48,000 rupees per acre.

4.4.3 Once the young trees are planted, fertiliser has to be applied at certain intervals and, more importantly, the area under the young trees has to be kept clear of weeds. Once the trees are bigger there is less growth of weeds because of the shade. It does not appear that weed killers are used by smallholders. We were told that there is at least some employment of labourers to do this 'cleaning' work. It would seem that this kind of work is done by both men and women, although probably more by men than by women.

4.4.4 If the young rubber trees are intercropped with another crop there is probably less work involved in weeding, although the intercrop itself has to be cared for too. In order to avoid any work in maintenance of the young trees in their immature phase, it is possible for land to be contracted out. Individuals with these contracts are able to use the land for intercropping of cash crops, including banana, pineapple and aubergine, during the immature phase of the rubber trees, which is the first six years of their life. This is in return for care of the young rubber - which may, as in Illukgoda, include the actual planting of the trees and application of fertiliser.

4.4.5 Tapping itself is normally carried out by members of the household which owns the plantation if the total land area is less than about one acre. Both men and women tap rubber. Because tapping is quite a skilful but not a heavy task, it is seen as something which can be done by women, and we gained the impression that women and men do equal amounts of tapping; this is true both on land belonging to one's own household and where they are employed to tap on land belonging to another household.

4.4.6 It was clear that some labour is hired by smallholders with rubber plantations, and that it is hired from among the poor. Such work is one of the options available to those who are landless or have too little land to sustain their families. Casual labour, usually male labour, is often hired to 'clean' (weed) rubber plantations. For tapping, on the other hand, it is usual for the same person to be hired regularly - but only paid when tapping is actually required, which means when it is dry. In Illukgoda, we found that some tappers were being paid on a kind of share-cropping basis: they took half the yield of latex. It appeared that this was a better deal for the tapper than daily pay, and may be perhaps be explained on the owner's side by potentially better care of the trees when tapping.

4.5 Replanting of over-age rubber trees by smallholders, the rubber subsidy and the potential of intercropping

4.5.1 The economic life of a rubber plantation is considered to be 33 years (ARTI 1986). After this time it should be replanted, because the yield of latex will go down considerably. However, it would seem that smallholders often do not replant as soon as they should (ibid) although the problem appears, from discussions with rubber extension officers in Illukgoda and Ihala Bopae, to be less severe now.

4.5.2 Once replanting has been done, the young rubber trees do not yield latex for six years, and this, together with the cost of replanting itself, is the major obstacle which prevents smallholders from replanting. While this is not a major problem for large estates which have capital reserves to fall back on and which do not, in any case, normally replant their whole plantation at once, it is a problem for smallholders.

4.5.3 After Independence, and the 1939-45 war effort which resulted in 'slaughter tapping' of rubber trees, the government introduced a rubber replanting subsidy scheme to encourage the replanting of senile rubber trees. Initially, this was targeted at all rubber plantations, but the current rubber subsidy is only available to those holding land in what are classed as smallholdings, which includes holdings up to 100 acres.

4.5.4 The rubber subsidy is available for both new planting and replanting of rubber land. It amounts to 19,500 rupees for new planting and 20130 rupees for replanting, and is paid in eight instalments. These are paid after certain planting and growth conditions are fulfilled and cover a period of five years from planting. The subsidy can include the provision of young trees themselves. It covers about half of the total cost of replanting, including labour; this appears to mean that if the smallholding family can cover the labour requirements from within the household they may not have to provide any actual cash.

4.5.5 Smallholding families clearly make a major decision when they decide to replant a senile rubber plantation, and not only to cover at least the burden of the replanting labour but also to forgo the income from the rubber trees for the six years it will take for young trees to mature. This decision making process was analysed in 1986 in a study carried out by the Agrarian Research and Training Institute (ARTI 1986), and they concluded that

many smallholders would find the decision a difficult one. The subsidy has, since then, increased in real terms to some degree - but more importantly the price of timber from rubber trees has increased, meaning that, in areas which are easily reached for removal of timber, a household can cover the loss of income for six years through sale of timber.

4.5.6 The decision to replant does not currently, from the data collected from informants in Illukgoda and Ihala Bopae, seem to suffer from constraints related to loss of income. This is probably related at least partly to the possibility of selling the timber at relatively high prices in Ihala Bopae and parts of Illukgoda which are not too inaccessible, and, in Illukgoda, to the practice of intercropping banana with the young rubber.

4.5.7 The decision to replant is often delayed, however, due to problems related to inheritance. We found a number of cases of rubber land which has not been replanted due to disputes between siblings or cousins who all have claims to a piece of rubber land which they cannot agree to divide. This appears to relate to the perception that the user of a piece of land has greater rights to it than other co-owners - what Obeyesekere calls 'prescriptive rights' to land (1967). This perception, however, conflicts with the legal situation, where all heirs have equal rights, and this is probably the root of the conflicts which occur.

5. INTERCROPPING OF IMMATURE RUBBER LAND IN SRI LANKA

5.1 Intercropping is a fundamental part of the traditional chena system in Sri Lanka, as it is of most swidden systems. Chenas were not only planted with millet but with many other crops as well. Home gardens are, of course, intercropped systems. This implies that there is an understanding and an appreciation of the utility of intercropping in indigenous agronomic science which has the potential to be tapped.

5.2 However, intercropping has not, until recently, been encouraged in the context of plantation crops like rubber and tea. Over the last couple of decades intercropping has gradually come to be appreciated on a scientific level (see, for example, Innis 1997) but this has taken time to percolate through to policy related to plantation crops. This can be seen in Sri Lanka, where it is only within the last ten years or so that there has been any signal from the extension service that intercropping should be allowed or indeed encouraged. Dr. Rodrigo confirmed that rubber extension officers have, in the last two years, been given the signal through seminars that they can begin to allow the intercropping of non-root crops, including banana, pineapple and aubergine, with immature rubber, but it is probable, as already mentioned, that many of them have not yet taken this up.

5.3 Intercropping of a companion crop with rubber is potentially a way to cover the income gap which smallholders suffer when they replant, and thus to ensure that replanting takes place. It is also a means of improving the general income level of the smallholding family, through intensifying the use of the land. However, the companion crop needs to be one which can and will be planted by smallholders as well as one which interacts well on an agronomic level with the young rubber trees. It needs to be easy and cheap to grow, easy to sell and culturally acceptable.

5.4 The rules for continuing to provide instalments of the rubber subsidy include rules relating to intercropping. Intercropping of most crops except root crops (which are

considered to compete with the rubber trees for nutrients), is now allowed. However, it would appear that there is a good deal of variation between rubber extension officers in the extent to which they actually allow intercropping. The two areas which we visited have quite enlightened extension officers who allow a good deal of latitude to farmers but it is likely that there are a number of areas where intercropping is not taking place due to the fear of losing the rubber subsidy.

5.5 The rules also include two different spacing systems for planting the rubber trees themselves: 12' x 18' and 8' x 27'. The first spacing system is the more usual one but the second is recommended for intercropping, in order to allow space between the trees for the intercrops.

5.6 In Dr. Lakshman Rodrigo's survey of current intercropping practices among smallholders in the four rubber-growing districts of Sri Lanka, he found that between 23% (in the Rathnapura area) and 54% of immature rubber lands were being intercropped or had been intercropped (Rodrigo 1997: 134); of these the majority used banana as the companion crop for rubber (ibid.: 136). Other companion crops include pineapple and aubergine.

5.7 Intercropping in Illukgoda and Ihala Bopae

5.7.1 In Illukgoda, banana is being intercropped with rubber on all immature rubber lands according to the household sheets completed before the study and which seemed to be confirmed by the interviews and plot visits which we carried out. We were told by many smallholding families that they had begun to intercrop banana with immature rubber just as soon as they received the message that they would not cease receiving the rubber subsidy. It would seem that they received this signal in that area about four years ago, and it is a striking fact that all rubber planted since then has been intercropped with banana whilst immature. This is an area where smallholders believe their land to be particularly good for banana - and it would appear that they are right, since much of the soil in the area, which, like that in Ihala Bopae, is red-yellow podzolic soil, belongs to the parambe series which is rich in potassium, which is an important nutrient for banana (Rubber Extension Officer, Illukgoda, personal communication).

5.7.2 In Ihala Bopae, on the other hand, most intercropping is with aubergine rather than banana. Some of the informants whom we met were intercropping some banana, but this was not widespread. All intercropping of banana with rubber in Ihala Bopae seems to be in home gardens. According to the data which the rubber extension officer has, there are five households which do intercrop with banana. There are also said to be five households which intercrop with aubergine. This is on a larger scale; we saw examples of these fields, and they are of over ten acres.

5.7.3 Aubergine is a much more demanding intercrop than banana, since it requires reasonably flat soil, easy access to water and an irrigation system. It is also much more capital-intensive, requiring the setting up of expensive irrigation systems and can only be done for two years. In contrast, banana intercropping can be practised in either low-input or intensive conditions. Costs of production for land preparation and fertiliser in intensive banana intercropping systems could be quite high, but as practised in Illukgoda, it simply involves the purchase of the young banana plants. Aubergine intercropping is, then, not so suitable for resource-poor smallholders, and indeed all aubergine intercropping in Ihala

Bopae is being done under contract by business-oriented, well-off individuals who take over the land for this purpose for the period of immaturity of the rubber.

5.7.4 While aubergine can only be grown for two years from the time the rubber is planted, because of the shade from the trees after that time, banana can be grown for four years, thus covering a larger proportion of the time during which the rubber is not productive, which is six years.

5.7.5 The data gathered by Dr. Rodrigo for his Ph.D. thesis on attitudes to intercropping has recently been analysed using the Statistical Package for Social Sciences and the results indicate that significant variables influencing the decision to intercrop include experience in growing rubber, experience in intercropping and whether land is held under single ownership. The last factor is relevant throughout Sri Lanka, since there are issues related to inheritance, as already pointed out, everywhere. The second issue, experience in intercropping, is possibly relevant to Ihala Bopae: until some people try something new and others see that it succeeds, the less innovative smallholders are more reluctant to take it up. This is what one would expect, indeed. However, the importance of leadership and innovation vary from culture to culture and Dr. Rodrigo's data, as well as the data just collected in the village of Illukgoda, confirm that in Sri Lanka it may be likely that once the intercropping of banana is introduced to an area it may be widely taken up. This bodes well for the prospects of success for the project.

5.7.6 It is not really clear why it is that banana is not being intercropped with rubber in Ihala Bopae. There does not seem to be a marketing problem there, although the system for collection of banana bunches from the field is more developed in the Mawanella (Illukgoda) area (see Ann Gray's study). Although the soil is not potassium rich in this area, it would seem that banana could be grown; the need for extra potassium needs to be investigated but is probably not a serious limiting factor, at least for a low level of intensity of intercropping. Informants mostly seemed to be uninterested rather than negative in their attitude to the idea of intercropping banana. However, one informant told us that he felt that the banana plants which he had intercropped with rubber were competing for nutrients with it and he said that he planned to remove the banana.

5.7.7 It may be that there are cultural or economic factors constraining the intercropping of banana which did not come out in the study. It is quite likely that these are related to the proximity of Colombo and the level of access to work outside agriculture in the area. Most rubber land in Ihala Bopae G.S. Division is owned by households who have members in regular employment according to the samurdhi organiser for the area and this may mean that they do not feel the need to invest in banana intercropping. However, this does not seem to fully explain the situation, which remains to be explored further.

5.8 The organisation of intercropping: doing it oneself or contracting out

5.8.1 In Ihala Bopae, there were just a handful of plots which were being intercropped with aubergine, and all of this was being done under contract. The contracting system in this area involves the owner doing the initial planting, terracing and fencing of the rubber, and, it would seem, also has to apply the fertiliser; the contractor simply uses the land. No payment passes in either direction. The contractor gets a very good deal; but he has to have a high level of capital, nevertheless. Contractors here tend to be well-off people.

5.8.2 In Illukgoda, on the other hand, it is the contractor who has to do the planting, fencing and fertilising of the rubber; again no payment passes in either direction. It was difficult to ascertain exactly how much land was being contracted out for intercropping, but we interviewed four people who had themselves done contracting, and there seemed to be more contracting out than in Ihala Bopae; the fact that this is despite having to do all the rubber-related work indicates how profitable the intercropping is. It appeared to be only those smallholders who were for some reason unable to do the work themselves or who lived outside the village who contracted out their immature rubber land. Intercropping is perceived as a very profitable business, and not something to miss out on unless you have to. We were told that it is possible to earn 15,000 rupees per year per acre gross profit from this enterprise.

5.8.3 While in Ihala Bopae it was the better off who took land on contract for intercropping (of aubergine), in Illukgoda it appears to be less well-off families which take immature rubber land on contract for growing banana. Of the three families which we met who are doing this, all belong to the land-poor or landless group. However, they see it as a means of improving their position quite substantially.

5.9 Intensity of banana intercropping and the use of fertiliser and green manure

5.9.1 The system of intercropping of banana with immature rubber being recommended, somewhat unofficially, through the Rubber Development Department at the moment involves the intercropping of one row of banana between each row of rubber trees, and the use of the 8' x 27' spacing system. At this intensity, 150 plants per acre are planted. No higher intensity intercropping is recommended.

5.9.2 In Ihala Bopae, what banana we saw being intercropped with rubber, in homestead plots, was sparsely planted and was mostly not planted according to any system, although in one case it was being planted in rows between rubber planted using the 12' x 18' planting system. In Illukgoda, on the other hand, planting was generally being done on a systematic basis, with either one row of banana being planted between rubber planted either on the 12' x 18' planting system, with about 100-200 plants per acre planted in single rows, or on the 8' x 27' system, with up to 350 plants per acre planted in a double row. It would appear that the latter system derives from the system for planting banana as a monocrop which was taught by agricultural extension officers in the area, and which smallholders have adapted by replacing one row of banana with a row of rubber trees.

5.9.3 The cost of the banana plants, which is the only cash outlay necessary, was, we were told, 12 rupees per plant if they are bought in the Illukgoda or Ihala Bopae area or 5 rupees per acre if they are bought, as they are by a number of people in Illukgoda, in the Dry Zone which is within an hour or so's journey.

5.9.4 When we asked about the idea of planting three rows of banana between each row of rubber trees (planted at 8' x 27'), we were told by all smallholders interviewed that they do not believe that three rows of banana between rubber planted 8' x 27' is a good idea, since it would affect the growth of the rubber.

5.9.5 Banana is being planted without the addition of chemical fertilisers in Illukgoda, and this obviously has some bearing on the matter. We were told that a small number of smallholders have been trying green manure derived from chopped up banana stalks. It is not clear where the idea for this has come from; Dr. Rodrigo was not aware that green

manuring is being taught by the agricultural extension officers, but pointed out that if the stalks are used as green manure they do indeed need to be chopped up small in order to avoid the spread of pests and disease.

5.10 The cultural importance of bananas

5.10.1 Bananas are a food which has some cultural significance in Sri Lanka. They are a necessary part of social functions, and are always presented at meals for guests if at all possible. They are priced at a level which is, relatively, quite high - one hand of a medium-price variety of bananas costs about 50 rupees (£0.50), the equivalent of around a third of a day's wages for labouring work in a village. When people are buying bananas, they can be observed to take a lot of trouble in selecting a good bunch, visiting a number of stalls, even in completely different places, before deciding on a purchase. This clearly relates to the amount of money being spent; but it also relates to a careful judgement of the quality of the bananas.

5.10.2 As a crop, then, bananas can be assumed to be have quite high status. Both because of this and because of their relatively high value, people are likely to be interested in growing them.

5.10.3 People are already growing bananas universally in their home gardens, and occasionally in Illukgoda, in small monocrop plantations as well. They are quite familiar with the needs of the crop. There are a number of different varieties of banana grown, both as monocrops and intercropped with rubber. The varieties which are being grown in home gardens and as intercrops are the same; some are more valuable than others, but apparently these tend to become diseased more easily so that it is not easy to say which varieties are most economic to plant.

5.10.4. Smallholders told us that they decide on which part of a rubber plantation to grow different varieties of banana in according to their knowledge of what kind of soil and other conditions different varieties require. It is clear that the subtleties of the nutritional and soil needs of different banana varieties are not new to Sri Lankan villagers and it is unlikely that smallholders would have any practical difficulties with growing bananas as an intercrop.

5.10.5 The fact that bananas are a valued crop and food in Sri Lanka and that smallholders have a good understanding of how to grow bananas means that they are likely to be interested and knowledgeable partners in research into different systems and intensities of growing banana if farmer participatory research is incorporated into this project.

6. POVERTY IN SRI LANKA

6.1 The demise of chena, landlessness and the rise of poverty

6.1.1 The demise of chena cultivation, which has been coupled with a huge rise in population particularly in the Wet Zone, has certainly meant that poverty has increased. Without land available as a free good for chena, there was no longer the possibility of universal access to enough land on which to grow subsistence crops. Nowadays there is very little, if any, cultivable land left which is not owned by someone. People's livelihoods are limited by access to land.

6.1.2 Landlessness or being land-poor is a key factor in the generation of poverty in rural Sri Lanka. In this context, any possibility of intensifying the use of land which is owned is of significance for the land-poor.

6.1.3 For the landless, the options include gaining temporary access to land, either to paddy land through tenancy or to immature rubber land through a contractual arrangement. In the past, tenancy on paddy land was not a necessity for the land-poor (in paddy land) because chena was available for subsistence; except in the case of feudal tenants, who had no real choice, families would take on tenancies for reasons other than purely economic ones - for example, to gain membership of a village community. Nowadays, increasingly exploitative paddy tenancies are possible because of the lack of highland for chena.

6.2 Wage labour

6.2.1 The other option for the landless and land-poor is wage labour. Although the rise of cash cropping in the place of chena on the same land has meant that some wage labour is available, this is limited by the use of household labour by most smallholding families. The rubber extension officer in Illukgoda estimated that such families can manage up to about two acres on their own, if they are growing rubber.

6.2.2 Wage labour seemed to be viewed as exploitative by those interviewed who were in the market for work. However, according to those who wished to employ labour within the two villages studied, labourers are not willing to work for the wages offered. The two sides appear to view the situation from contradictory perspectives; labourers say that there is not enough work available (i.e. work paid at a reasonable rate), while employers say that there are not the people willing to do the work. We had numerous reports that labourers were trying to demand higher wages than employers were willing to pay.

6.2.3 The rate of pay was said to be about 125 to 150 rupees per day for men and 75 to 100 rupees per day for women. This rate seems to apply to all agricultural labouring work. For more skilled work such as masonry and blacksmithing within villages, the rates were higher - around 200 rupees per day. For work in factories on the part of people interviewed in Ihala Bopae, the rate of pay was about 2000-3000 rupees per month, but this appeared to be for very long hours, including overtime. For rubber tapping, the rate paid is only about 80 rupees a day, but this is for about five to six hours' work. Some rubber tapping is done under contract on a share cropping basis in Illukgoda, with the tapper taking half the proceeds of the latex production.

6.2.4 However, labourers universally said that there was not enough casual work for them and that they were not employed on a regular basis. Many people said that in their households only the man was doing casual work outside the household and that he only had work for perhaps 10-15 days a month. This would mean that his monthly income would be around 2000 rupees a month.

6.3 The income of the poor

6.3.1 Some women in Illukgoda made biddies (small local cigars) on a piecemeal basis at home. This means that they do not have to work outside the household, which accords with the cultural prejudice against women working outside the household. Biddy-making appeared to bring in about 50 rupees per day for most women.

6.3.2 Many families have access to small plots of rubber land on their homestead plots, although the poorest do not have even this. Income from latex produced from rubber land is, it was estimated to us, about 2200 per acre per month. If a poor family has a quarter of an acre of rubber land, their income from sale of latex would be about 550 rupees per month.

6.3.3 Little is sold from homestead plots except the occasional bunch of bananas; homestead plots are generally used for subsistence purposes. Rice is not normally sold; if a poor family does have access to a small plot, either every season or on a time-share basis they will consume it. Such income in kind is very significant but is difficult to quantify.

6.3.4 It is clear that a poor household without access to significant income in kind from homestead plot and paddy field, where the male head has occasional labouring work, on 20 days a month, where the female head makes biddies and with a quarter of an acre of rubber land, is unlikely to achieve a monthly income of more than 3000 rupees. A household without rubber land or homestead plot of any size, and where the male head only manages to work 10 days per month, will have an income of only 1500 rupees and have to rely entirely on this.

6.4 The cost of living

6.4.1 The amount of money which a family needs to spend in order to buy basic necessities varies a good deal depending on whether they can rely on produce from a homestead plot, as well as on paddy which they produce. In Ihala Bopae where the cash economy is more developed, families without substantial homestead plots estimated that they needed between 700 and 2000 rupees for rice and between 300 and 1000 rupees for vegetables, meat and fish. Fruit would not normally be eaten except when it was grown in the home garden, although bananas are bought for social functions. In addition, of course, there is expenditure on clothing, incidentals and, very significantly, on weddings and other social events, which are very important to maintain social standing.

6.4.2 In order to feed a family of five, the samurdhi organiser in Ihala Bopae estimated that at least one acre of paddy would be needed. A family would need about 60 bushels of paddy per year, and this would be produced from one acre if it were cultivated twice a year, in both of the two seasons - which is often not possible. For fertiliser, the family would ideally need to spend 1200 rupees per acre; however, the poor often skimp on this. However, very few households have one acre of paddy land available to them all the time, and poor families will almost universally need to buy some of the rice which they consume.

6.4.3 It is clearly very difficult for a family to manage on less than 2000 rupees per month if they have no income in kind, and this is the level at which the samurdhi organiser in Ihala Bopae felt that the poverty line should be set, although officially he is supposed to use one of 1000 rupees per month. The team with which I was working considered that a household income of less than 3000 per month, without access to the produce from a substantial garden or from a plot of paddy land, should be considered to mean that the household is definitely poor.

6.5 Land tenure in Illukgoda and Ihala Bopae

6.5.1 The vast majority of villagers in both villages have total holdings of land which are under five acres. It is difficult to be exact about paddy holdings because of the *tattumaru*

system (see 2.4.4), but it would appear that practically all households have less than two acres of paddy land and most have less than one acre, often held on a time-share basis where the owner uses the land as infrequently sometimes as once in five to ten years.

6.5.2 Tenure of highland, largely used for rubber, is more concentrated and there are some holdings of 10 to 20 acres or even more, although the majority have less than 5 acres. At the meeting of rubber growers held in Ihala Bopae temple as part of the study, there were 8 people with less than one acre, 15 with between 1 and 5 acres and only 3 people with more than 5 acres; and we were told that of the people who had not come most have less than one acre or a little more. Most smaller holdings seem to be part of homestead plots. The existence of larger holdings of rubber land undoubtedly reflects the investment of successful individuals in rubber land, which is considered to be the most lucrative land-holding to have. However, all of those interviewed who have large rubber holdings and who actually live in the village, also have paddy land; the importance of paddy land in maintaining membership of the village community and status in the village has been discussed above.

6.5.3 The largest holdings, particularly in Illukgoda, belong to people who are not resident in the village. The fact that Ihala Bopae is not entirely rural in character due to its proximity to Colombo and to industry may well lead to well-off local people staying in the village, whereas in Illukgoda they may be more likely to reside in town because of the overwhelmingly rural character of the village.

6.5.4 Larger rubber holdings are either looked after by a manager, as in one case in Ihala Bopae G.S. Division (in Gamagevatta), or are managed from a distance by the owner. The very largest holdings, such as the Hinverella estate in Illukgoda, which is owned by a prominent local *radala* family, are always looked after by a manager. The Hinverella estate employs people from Illukgoda village as tappers and labourers, some of whom are accommodated in 'lines' houses within the estate. Nowadays, not all of the people resident in the 'lines' work on the estate, however; they have been given legal security of tenure and many of them work as labourers within neighbouring villages such as Illukgoda.

6.5.5 Very few households are entirely landless; almost all have at least their own homestead site. However, some of these are so tiny - some are as small as 5-10 perches, which is less than one-sixteenth of an acre - that the household is in effect landless as far as agricultural land is concerned, since they cannot even maintain a home garden. It is a hardship in village terms not to have at least a home garden; it means that everything, even coconuts and fruit, has to be bought.

6.6 The role of caste in rural landlessness and poverty

6.6.1 In Sri Lanka, at least half of the population belongs to the *goigama* cultivating caste, which is the highest-status caste. There is no Brahmin caste. Even the king in Kandy and the aristocratic class, the *radala*, belonged to the *goigama* caste, although it seems that there are some sub-caste distinctions within the *goigama* caste which allow aristocrats, for example, to be somewhat distinguished from simple villagers.

6.6.2 Other castes are mostly service castes. They are distributed unevenly throughout the country, with in some areas whole villages or sections of villages being composed of

one caste and in others service castes living together with *goigama* villagers in the same village, interspersed with them.

6.6.3 Caste in Sri Lanka is something which now tends to be played down; it is said by most people to be of little importance in determining income level or in limiting social and economic aspirations. However, there is a radical difference between town and country in the significance of caste. It is probably true to say that in the town, caste affiliation, although significant in determining success, does so not through its hierarchical implications but through blocs and support related to caste. However, in the rural context, because of the importance of access to land as well as continuing hierarchical implications, caste affiliation is very likely to be related to poverty in a general fashion.

6.6.4 There is a clear association between caste affiliation and landlessness, although it is not a straightforward association since non-cultivating castes do now own land. It is likely that the situation varies a good deal from place to place. It is difficult to say what proportion of land is owned by non-cultivating castes, although this is certainly affected by the distribution of the castes in different areas; it is more likely that in villages which are entirely of one non-*goigama* caste there will be a less significant association of landlessness or being land-poor with low caste. We were told that in Ihala Bopae none of the non-*goigama* caste households had more than their homestead plot.

6.6.5 It would seem certain that very low castes are unlikely to find it easy to engage in paddy cultivation because they would not be welcome in workgroup labour exchange arrangements, and other team members confirmed that it would be difficult for them to purchase land. They might do better in rubber growing if they had made money and wished to invest in this.

6.6.6 I was told by the samurdhi manager for the Mawanela area, within which Illukgoda falls, as well as by other informants in administrative positions, that low castes can do well for themselves by commercialising their caste occupations, such as laundering and jewellery making. It is difficult to say how many members of low castes succeed in doing this, and it is obviously going to vary depending on the commercial potential of the caste occupation.

6.7 Caste, landlessness and poverty in Ihala Bopae and Illukgoda

6.7.1 It was difficult to get accurate information as to the proportion of non-*goigama* castes in the two villages. Villagers are reluctant to discuss matters related to caste with outsiders and it is quite impossible to ask direct questions as to caste affiliation. Longer-term fieldwork would be necessary in order to gather reliable data on caste within the villages.

6.7.2 It would appear that both villages are predominantly *goigama*, but both contain some proportion, probably reasonably small, of non-*goigama*. Illukgoda contains some families belonging to the *vahumpura* (traditionally palm sugar boilers) and *bathgama* (who have a tradition of royal service but are primarily associated with manual outdoor labour and are generally landless and economically depressed castes [Bryce-Ryan 1953]). Ihala Bopae G.S. Division was said by the Grama Sevaka (the village administrator, government-appointed) to contain 8 families of *beravaya* (drummer) caste, 3 families of *wahumpura* caste and 12 families of *kamhalkaru* (said to be blacksmith although not discussed in the literature to which I referred). The samurdhi organiser, however, said that

there are also *rajaka* (not mentioned in the literature) families in the village, also of low caste. We found, in our interviews, that there were, in addition, some families who appeared to belong to the (low-status) jewellers caste according to other team members, although there was some uncertainty as to what they were called.

6.7.3 It would seem that there is a relationship in the two villages studied between low caste and landlessness and poverty. However, this is difficult to substantiate. The samurdhi organiser in Illukgoda told us that there is a general relationship between low caste and poverty, even though there are exceptions due to low castes commercialising their caste occupation and making a good living. She also said that *goigama* caste members have more land than others, especially paddy land. In Ihala Bopae, the low castes seem to be concentrated in the Ihala Bopae area of the G.S. Division, and to have very little land, but it is, again, difficult to be concrete because the distribution of the castes was not clearly revealed to us.

6.8 The structure of households and households without adult males

6.8.1 The usual structure of the household is of a two or three generation household with only one married couple in each generation; in other words, siblings do not live together in one household, but parents do. The traditional pattern in Sri Lanka is patrilocal, with the wife going to live in her husband's family's house or at least village, and this seems to still be the norm in the two villages studied.

6.8.2 We did come across a number of instances of siblings sharing homestead sites, but they lived in separate houses and appeared to have separate finances.

6.8.3 We came across only a couple of instances of households without an adult male forming part of them. Divorce seems to be very uncommon. We met two ladies who are divorced and living alone, one in Ihala Bopae and one in Illukgoda. These were the only cases of which we heard, although it is possible that our informants did not introduce us to such people. Where there is a male household head there is often a reluctance for women to work outside the household. Poverty due to the lack of a male head is common. However, when asked about this, the samurdhi organiser in Illukgoda said that where such cases occur, they receive special attention from the samurdhi programme, and may receive extra payments. She estimated that less than 10% of households lack a male head.

6.9 The Samurdhi programme

6.9.1 There is, in Sri Lanka, a government run programme called the samurdhi programme which is intended to target poverty. This programme, which was initiated in 1995 by the present government and which follows on from a series of earlier similar programmes dating back to Independence, has various components. These include a top-up income supplement in the form of food coupons based on a per person sum of 100 rupees per month up to a maximum of 500 rupees, which goes to all those who are deemed to be below the poverty line, and, within the last year, the introduction of the Samurdhi Banking Organisation, which is modelled on the Grameen Bank and which is intended to finance income-generating activities for samurdhi recipients. The samurdhi programme also includes community labour. It is intended to be short term but in practice has no end date in view. Each Grama Sevaka Division, which may include two or three villages, has samurdhinyamaka (literally 'samurdhi organisers') who are from the villages, who are responsible for the administration of the programme.

6.9.2 The poverty line for the purposes of samurdhi distribution is set at a cash income of 1,000 rupees per month per family (about £10). However, it was clear from discussions with samurdhi organisers in Ihala Bopae and Illukgoda that they use their own discretion in deciding who should be included in the programme and that they are subject to various pressures, political and otherwise, to include far more people than would be warranted by that poverty line. To some extent, the latitude which they use is based on taking into account criteria other than simple cash income, such as land ownership involving income in kind and, as an expression of income level, quality of housing.

6.9.3 The samurdhi organiser whom we met in Ihala Bopae said that he uses a poverty line of 2,000 rupees. There are considerable difficulties in quantifying income within the village context. Much of the difference between households is based on differences in access to income in kind, and this is difficult to quantify. Also, much cash income is invisible or difficult to quantify because it comes in on an occasional basis. Only those with a regular salary have really visible incomes, which can be used for assessments.

6.9.4 However, numerous other households actually receive samurdhi assistance without being considered to merit it by the samurdhi organisers who put them on the list. The samurdhi organisers in Illukgoda and Ihala Bopae said that about half of the recipients should not be on the programme. Their inclusion is due to local political and social pressure; the fact that the samurdhi organisers are now local people (unlike under the previous janusavi programme) is not likely to reduce this problem.

6.9.5 It would seem from the cases discussed with the samurdhinyimaka in Illukgoda and Ihala Bopae that, as a very rough guide, a household of five members with a cash income below about 3000 rupees and with less than about half an acre of land, including the homestead plot, will definitely be given samurdhi assistance and will be considered to merit it.

6.9.6 On 17th October, which was World Poverty Day and was my last day in Sri Lanka, the fieldwork team and I listened to a radio interview with the government minister responsible for the samurdhi programme. The programme had previously interviewed various other people who had said that they did not believe that the samurdhi programme is poverty-alleviating because it doesn't encourage people to help themselves get out of poverty. The Minister admitted that he agreed, broadly, but said that people have, since Independence in 1948, grown accustomed to receiving this kind of assistance and it was very difficult on a political level to stop the programme. He said that of the total 1.9 million recipients of samurdhi assistance (it was not clear whether he was referring to households or individuals), 0.8 million are really poor and need the assistance. 0.5 million have, he said, given false information to obtain the assistance and 0.6 million are getting the money but have the ability to 'develop themselves'. Of this last group, he estimated that 0.2 - 0.3 million are capable of developing themselves but are resource-poor; it is this last group which, he said, the Samurdhi Banking Association is targeting.

6.9.7 It is interesting to note that the impressionistic assessment on the part of the samurdhi organisers in Illukgoda and Ihala Bopae and the figures given by the Minister tally fairly closely - his figures would imply that just under half of the total recipients should really be getting the assistance.

6.9.8 There are few data as far as I know on the level of receipt of samurdhi assistance on the part of different castes, either nationally or locally, although the samurdhi organiser

in Ihala Bopae told us that most of the members of the three lower castes in the village are samurdhi recipients. Such information is probably normally not recorded, due to the sensitivity of the subject.

6.10 Poverty in Illukgoda

6.10.1 In Illukgoda, where there is little employment outside the village and a limited cash economy, I would judge from interviews with informants that the village perception seems to be that a household whose adult members have to work for others for a significant proportion of their time is considered to be poor, while those who employ others to work for them are considered to be well-off. A middle-income, respectable family seems to be one which neither works for others (except of course through work exchange on paddy land) nor employs others to work for them, except perhaps on an occasional basis. Such a family would usually own about one to two acres of rubber, a homestead plot of around half to one acre, and a small *tattumaru* share of paddy land. The significance of paddy cultivation for standing within the traditional village community is discussed above. They would derive an income of around 2000 from selling latex from one acre of rubber land but would have enough additional income in kind from their home garden and *tattumaru* share to enable them to live comfortably.

6.10.2 We were told by one of the samurdhi organisers in Illukgoda that there are 30 families in Illukgoda who are really very poor. We visited three of these. Such households are characterised by total landlessness, and have homestead plots which are either so small as to allow of no subsistence cropping at all or are of very low quality. Two of these had come to live in Illukgoda from a town area and one was from 10 miles away. The male members of such families do casual labour and do not appear to be highly regarded as workers in the village; I was told by one of the two samurdhi organisers in the village that among such families, and also among other poorer families, there is a severe problem with alcoholism, such that the man of the family often drinks away a large portion of his casual earnings, and sometimes even sells the 'dry goods' food which is given to the family through the samurdhi assistance scheme. Clearly this problem is particularly severe where a family's income is in cash rather than obtained through subsistence farming. It is also probable that such alcoholism is related to low self-esteem, which is associated with landlessness.

6.10.3 The household sheets which were completed under the supervision of the rubber extension officer for Illukgoda before the study, were found to be a useful broad guide to the landholding as well as intercropping status of the families in the village. We did find, however, that in interviews it transpired that there were a lot of errors in the sheets and in particular there was a confusion, due to the way in which the forms had been drawn up, between homestead plots and paddy land, which were classed together as 'other land' (other than rubber land).

6.10.4 It would seem from the sheets that about half of the families in the village have no land except their homestead plots of less than one acre. Around a quarter are said to have larger homestead plots and/or some separate rubber and paddy land. It must be borne in mind that ownership of even a small homestead plot is of significance since some subsistence foods, and often a small area of rubber, can be grown, as discussed already. However, households with less than one acre of homestead plots will certainly need to work on others' land, either as tenants on paddy land, as contractors of immature rubber land or as labourers or tappers.

6.10.5 Of these options, the lowest status and the least remunerative is working as a labourer or tapper; the highest seems to be taking on immature rubber land as a contractor and growing bananas for sale. We met three individuals who had started out with no land at all and had managed to do well enough through contracting immature rubber land for bananas to lift themselves out of poverty. One family had managed to buy two acres of rubber land of their own in this way. However, some poor families, when asked whether they had considered taking on immature rubber land for banana growing, said that they did not have the capital.

6.10.6 It did not seem that there was serious indebtedness in Illukgoda; none was mentioned at all by informants. The new Samurdhi Banking Society has just started in the village and we were told by the samurdhi organiser that all samurdhi families had joined, and the subscriptions stood at between 10 and 20 rupees per month per household. Previously, the samurdhi programme had made available loans to recipients. It is hoped that the groups of five women around whom the new banking society is organised will either together or individually set up income generating enterprises.

6.10.7 It would seem from the household sheets for Illukgoda, filled in before the study began, that banana is being intercropped with immature rubber, even on very small rubber holdings. Thus the land-poor, although not the landless, are benefiting from the intercropping.

6.11 Poverty in Ihala Bopae

6.11.1 The household forms for Ihala Bopae G.S. Division were not all completed and so it is not possible to say what proportion of households are landless. However, it is probably fair to say that there are far more of these in Ihala Bopae than in Illukgoda since the settlers in the Ihala Bopae area of the G.S. Division, who number at least sixty households, almost universally own no more than the most minimal homestead plots. There are few households in Illukgoda with very tiny homestead plots. However, it is also the case that there is a good deal more employment outside the village than in Illukgoda, and that having land is not a prerequisite for staying above the poverty line.

6.11.2 The Ihala Bopae area of the G.S. Division contains the largest number of households (about 80, compared to 30 for Gamegevatta and 50 for Vevelkatiya) but the smallest land area. The area is inhabited largely by new settlers who have either purchased tiny homestead plots or have been given plots on Crown land. The land on which they have their plots is sloping and is not of high quality. These people are particularly poor in terms of income in kind from agriculture because they have so little access to land. Although the land area of Ihala Bopae does contain some paddy land, the people interviewed living in the area told us that none of it belongs to people from their area, but to people from Vevelkatiya, Gamagevatta and other villages - although it must be said that the samurdhi organiser for Ihala Bopae, told us that half of the paddy land concerned did belong to the people of Ihala Bopae, divided into tiny plots of less than a quarter acre. It is highly unlikely that the land belongs to the settlers; some of it probably does belong to long-established families living in that area. Very few of the people living in the Ihala Bopae area of Ihala Bopae G.S. Division have any rubber land - the samurdhi organiser in Ihala Bopae estimated only 10 of the 80 households have any.

6.11.3 Many of the settlers living in Ihala Bopae rely on work outside the village in nearby factories of various sizes. They are not really rural people at all although they are living in a rural area, but are, rather, urban. Their poverty is urban rather than rural; although male members of households do some casual work in the agricultural sector, they depend predominantly on work in factories and other non-agricultural establishments.

6.11.4 It would seem that the majority of people in Gamagevatta and Vevelkatiya probably belong to families which have been resident in the village for generations. The land area is quite large for the number of families - 50 in Vevelkatiya and 30 in Gamagevatta. Although a fair proportion of the land is shown on the maps drawn by villagers during the study to belong to people living outside the village, it is quite likely that this is matched by land owned by Gamagevatta and Vevelkatiya in other villages, since the dense population and blurring of boundaries between villages has meant that the separation of village resources has been reduced by comparison with the situation in Illukgoda, for example. The samurdhi organiser in Ihala Bopae said that of the 50 acres of rubber land in Gamagevatta is divided among 25 households, each of which has 1-5 acres. This means that the majority of families has at least one acre of rubber land.

6.11.5 It is probable that many of the families in Gamagevatta and Vevelkatiya have at least one family member who works outside agriculture, and that this contributes a significant cash income to the household. The samurdhi organiser estimated that 25 of the 30 families in Gamagevatta have one member at least in regular employment. Together with the homestead plots, and in some cases the additional plots of rubber and paddy land owned, this means that the households have a well diversified set of income sources. Level of diversification was, in the interview held with him, suggested to be one of the major determinants of poverty/income security in Sri Lanka by Prof. Karunanayake.

6.11.6 We found some evidence of indebtedness in Ihala Bopae; one family had got into debt in building their house and we were told that the rubber broker in the village was able to insist that certain people brought their rubber to him because they are in debt to him.

7. BANANA-RUBBER INTERCROPPING AND POVERTY ALLEVIATION

7.1 The potential income from selling banana is difficult to calculate because it depends on productivity but is likely to exceed 2000 rupees per month; one person intercropping rubber with banana on a single-row system in Illukgoda said that he gets 1000 rupees per month but his yield is not good because the banana plants are over-age and the area is shady. This goes a long way towards replacing lost income from latex, which was estimated as being about 2200 rupees for one acre of rubber land per month.

7.2 For the poor, this income is more important than for those who have some capital to fall back on. Without income from their rubber trees, the poor who are hovering on the poverty line as it is locally defined by the samurdhi organiser (see 6.9.2) are likely to fall below it, and those who are already below the poverty line are likely not to be able to replant at all.

7.3 It has been pointed out that households which have homestead plots of more than about an acre are likely to use some of the plot for growing rubber. In Gamagevatta, the detail on the map drawn by participants at the samurdhi (which is better than for the maps of other parts of Ihala Bopae G.S. Division) reveals that most homestead plots, including

those of less than one acre, include some rubber. In Illukgoda, it has been pointed out that intercropping is carried out even on the smallest plots of immature rubber land, including those on homestead plots. The presence of rubber land on the homestead plots of even those with incomes which place them below the poverty line means that rubber growing and also the intercropping of banana on immature rubber land is relevant even to many of those who are considered to be very poor by village standards - those who hold less than one acre of land.

7.4 Potentially, then, it would seem that the land-poor, who form a large proportion of the poor in both villages, can benefit from the intercropping of banana with young rubber directly on their own land. Banana intercropping has the potential to enable those who have just a little rubber land to afford to replant, to get a better income from the banana during the immature period of the young rubber than they would have got from the senile rubber trees, and to go on to get a good latex yield from the young trees. The fact that intercropping of banana with immature rubber is not practised in Ihala Bopae at the moment may be the result of the lack of innovative models as yet. However, it may also be due at least partly to the existence of other sources of income outside agriculture.

7.5 Aubergine intercropping, on the other hand, is capital intensive. In Ihala Bopae, intercropping of aubergine with young rubber is done only by those with considerable capital. Whilst there is probably a limit downwards in terms of economies of scale in setting up an irrigation system in intercropping aubergine, this does not apply to banana.

7.6 Very few households are entirely landless since almost all own at least a homestead site on which they have a home garden. However, some have such tiny plots as to be more or less landless with regard to land for agricultural purposes, too small for the planting of any rubber trees at all. So far as this group are concerned, they can benefit in two ways from the intercropping of banana with young rubber: through the possibility of contracting other people's young rubber land for the intercropping of rubber and through the greater prospects of labouring work on intercropped rubber and banana land, removing dead banana trunks and cleaning away weeds as well as transporting bananas. The former possibility is the more attractive economically although it involves an investment both of cash and of labour, and is considerably higher status.

7.7 The samurdhi organiser in Ihala Bopae felt strongly that there was potential for benefiting the poor in intercropping banana with rubber, both through planting on their own land and through the increased availability of labouring work.

7.8 It seems clear that there is much more scope for banana intercropping by those who are relatively resource-poor, as compared to aubergine intercropping. The cost of the young plants must be borne initially (at between 5 and 12 rupees per plant, and a density of 200-200 per acre depending on whether a one or two-row system is used) and this was stated to be an obstacle by some poorer farmers whom we interviewed and asked if they would be interested in contracting immature rubber land from others for banana intercropping. However, this cost is not prohibitive, and it does not seem to be an obstacle at present for those who have even small rubber plots.

7.9 There may be the potential for these costs to be met through samurdhi bank savings for those who are unable to find the capital. This applies particularly to those who have ambitions to take on largish areas of rubber land belonging to other households which is

due to be replanted with rubber, for the intercropping of banana; here, the capital costs may be too high for the poorest, because of the land area involved.

7.10 Even those with small areas of rubber growing appear currently to be planting two rows of banana between the rows of rubber in Illukgoda, so it would seem that there may be the potential for bringing in this level of intensification not only in the rubber plantations of the better off but in all rubber plots, including those which are very small.

7.11 The question of fertiliser is one which is potentially problematic for the poorest, who are very unlikely to be able to find the initial capital to buy fertiliser. The two-row system being used in Illukgoda does not use fertiliser, so this level of intensification can be brought in without problems. Any further level of intensification, such as the three-row system, will need to look carefully at the potential for green manuring, as is planned, in order to ensure that intensified systems can be practised by those who are resource poor.

7.12 There is some, apparently spontaneous, experimentation with green manuring in Illukgoda already, and although this study was not able to interview the farmers concerned in order to find out what the results have been, it is very promising that farmers themselves are trying green manuring out. Green manuring is something which requires only labour and this is something which resource-poor farmers with small plots have to spare and which they would undoubtedly prefer to use on their own plots rather than in others' if they can get an equivalent return for their labour.

8. CONCLUSIONS

8.1 There are existing precedents for the intercropping of banana with rubber in Sri Lanka; the intercropping of banana with rubber is already being practised in a number of places within the rubber growing areas of Sri Lanka of Kegalla, Kalutara, Colombo and Rathnapura, as is shown by Rodrigo 1997. In one of the villages included in this study, Illukgoda, and presumably in other areas as well, banana is already being intercropped using a semi-intensive system, although without any fertiliser.

8.2 Banana would appear to be a promising companion crop for young rubber in terms of its accessibility to a large proportion of the population, including those who have very small rubber plots on their homestead plots. It is in contrast to aubergine as this is intercropped in Ihala Bopae, where it is business-minded entrepreneurs who engage in aubergine intercropping, which is capital-intensive. There is considerable experience of growing banana in Sri Lanka; every rural household plants banana as one of the crops in its home garden. Banana is crop which has high cultural as well as economic value in Sri Lanka. It does not require very much care, and because it does not need irrigation or the application of fertiliser or other chemicals at the density at which it is normally planted it is not a very expensive companion crop. Even when it is planted as an intercrop for rubber on a two-row system, as in Illukgoda, it is not fertilised and it does well.

8.3 Although Illukgoda has soil with a high potassium content, which makes it particularly suitable for banana, it is likely that banana would do pretty well elsewhere, although it is possible that it may require some fertiliser if it is to be grown at an equal intensity elsewhere. However, in Ihala Bopae there is at present little intercropping of banana, but the reasons for this are not clear; they may be related to social and economic

factors which did not come out during this short-term study, or they may be agronomic in nature.

8.4 Whilst most of the poorest, who number about 10% of the population in the two villages studied and who are effectively landless because of the small size of their homestead plots, are unlikely to benefit except in terms of increased availability of labouring work from the introduction of intensified intercropping of banana with rubber, the larger group of the poor, who have some land but who are forced to work for others to make ends meet, would potentially benefit. Many, perhaps even most, households plant some rubber on their homestead plots if they are larger than about half an acre, and would be able to intercrop banana with young rubber when they replant their rubber. The presence of banana as a companion crop for the young rubber has the potential to enable them to maintain an income from their plot of rubber during the six years that the rubber trees are not producing latex, and assists them in making the transition from depending on senile, low-producing rubber trees to young, productive trees. Although the rubber subsidy does also assist them in this transition, as does, nowadays, the relatively high price paid for timber in accessible areas, it is highly likely that they are foregoing some income in replanting and that this is making them unwilling to replant.

8.5 In some sense most of the population of these two villages could be said to be poor, since they rarely have household incomes of more than 3000 - 4000 rupees per month, although those who have enough paddy land to provide rice for the year (about one acre for the average family) and who have a reasonably large homestead plot of one to two acres, allowing a good sized home garden, are middle-class within the village and manage reasonably well. Such families would of course also benefit from the possibility of intercropping banana with their immature rubber; they also undoubtedly have difficulties in many cases in replanting and in bearing the loss of income from the rubber trees during the six years of their immaturity. Few families within these two villages have much disposable cash income to invest in any capital-intensive ventures including intercrops with rubber, and banana is, for this reason, a potentially good intercrop.

8.6 There is the potential, for some poorer villagers who are regarded as competent by others, to take on immature rubber land on a contract basis for growing banana. Banana, because it is much less capital-intensive than aubergine, has much more potential to allow such families to improve their economic standing. We found evidence that poorer villagers are managing to do this in this way in Illukgoda.

8.7 Most of the rubber growing areas of Sri Lanka are predominantly agricultural with a need for households to generate the vast majority of their income within the village and within agriculture. Poverty alleviation, in this context, means intensifying the use of land which the poor own and increasing their access to land. There are grounds for thinking that increased intercropping of banana on small rubber plots are likely to have some impact on poverty through intensification of land use by the poor, particularly if it proves possible to adopt more intensive systems of intercropping without high capital costs. The contracting of immature rubber land means an increase in access to land on the part of the poor, although not on a permanent basis.

8.8 We found that there is an interest on the part of farmers in Illukgoda in experimenting with different techniques in growing banana as an intercrop with rubber: many have adopted a two-row system of planting banana which they have adapted from

the banana monocrop system being promoted by the agricultural extension service, and some have been experimenting with green manuring using chopped up banana trunks.

8.9 There was a considerable difference in level of interest in intercropping with immature rubber generally and in intercropping banana in particular, between Ihala Bopae and Illukgoda, with a high level of banana intercropping in Illukgoda and little in Ihala Bopae. This difference seems only to be partially explained by differences in soil conditions, and is likely to be due to social and economic issues which were not uncovered by the study, and which may be related to the proximity of alternative sources of income outside the village in this area near Colombo. It does not seem to be due to differences in the possibility of marketing banana. However, it seems likely that the potential for banana to be the major intercrop may vary from place to place and that in some areas there may be a preference for other intercrops such as aubergine or pineapple.

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APPENDIX 1

Village: Illukgoda
House Holders List: Homestead Sites.

House No	House Holder	Cultivation Pattern	Interviewee No.
01	Ranhami	3/4 acres home garden and timber trees	
01 A	Rathnayake		
02	Banda	1/8 acres home garden	
03	Aberon	1/8 acres home garden	
04	Dayananda	10 perch	
05	Sisira Bandara	20 perch	
05A	Bope	2 acres (home garden); 1 1/2 acres (rubber)	
06	Punchi Appuhamy	1/4 acres home garden, coconut and banana	
07	Nissanka	1/16 acres home garden, coconut and banana	
08	Nissanka Sister	1/16 acres home garden, coconut and banana	
09	Nissanka Family	1/16 acres mixed; coconut and banana	
10	Danasekara	1/16 acres home garden	
11	Karunarathna	1/4 acres home garden and shop	15
12	Jayatilaka	1 1/2 acres poultry farm and rubber	
13	Asilin	1/2 acres home garden	
14	Gune	5 perch home garden	
15			
16	Jayatuwa	1/4 acres home garden	
17	Samurdi Niyamaka	1/4 home garden and shop	
18	Gunatissa	3/4 acres home garden and rubber	04
19	D.R. Kiribanda	1/2 acres home garden and rubber	
20	Deiya	1/2 home garden	
21	Tikiri Banda	1/2 acres home garden	
22	Dhanasekara	home garden; size not recorded	
23	Ananda	1/4 acres home garden	
24	Kiribanda	1/2 acre rubber, 1/2 acre home garden	
25	Ananda	1 1/2 acres home garden	
26	Santha manel	1/2 acres home garden	02
27	Ralahami	1 1/2 acres rubber	
28	Mutubanda	1/2 acres home garden	18
29 & 30	Podiralahami & Poddae	1/4 acres home garden	12
31	Kiribanda	Siblings sharing site 1/4 acres home garden	

32	Punchimahattaya	10 perch home garden	
32 A	Son of 32		
33	Aberathne	1/4 acres home garden, banana and coconut	
34	Jayasena	1/4 acres home garden	07
35	Gama	1/2 acre home garden	
36	Jayatunga manike	1/4 acres home garden	
37	Sesantha	1/2 acres home garden	
38	Punchi banda	1/2 acres home garden	10
39	Lamsa	1/2 acres home garden	08
40	Edna	1/2 acres home garden	09
41	Sirisena	1/2 acres home garden	
42	Aberathna	1/2 acres rubber	
43	Haramanis	1/2 acres	
44	Sumanadasa	1/2 acres rubber	
45	Pincha	1/2 acres rubber	
45 A	Siriyawathi	1/2 acres rubber and banana	11
46	Jayasinghe menike	1/2 acres coconut and banana	
47 & 48	Senavi and Ranatunga	1/2 acres rubber and home garden	
49 & 50	Dingiriamma	1/2 acre rubber	
51		6 acres rubber and home garden (include. 2 acres immature rubber)	
52		1/2 acres home garden	
53		1/2 acres rubber	
54		1/2 acres home garden	
55		1/2 acres home garden	
56		no details	
57		1 acre rubber	
58		1/2 acre home garden and rubber	
59		1/2 acre banana	
60		1/2 acre rubber and banana	
61		1 acre home garden	
62		1 acre home garden, banana and coconut	
63		1/2 acre rubber	
64		3/4 acre rubber	
65		1/4 acre home garden, banana and coconut	
66		1/4 acre home garden	
67		1/2 acre home garden, rubber and banana	
68		1/4 acre banana	
69		1/4 acre banana	
70		1/4 acre home garden	
71	Sarath	1 acre home garden and rubber	
72	Somapala	25 perch home garden	
73	Sunil	7 perch no trees	

74	Weerasinghe	1/4 acre home garden and coconut	
75	Chandrasena	1/4 acre home garden	
76	Babanis	1/4 acre home garden	
77	banda	1/2 acre home garden	
78	Palis	15 perch home garden	
79	Piyasena	15 perch home garden	
80	Kiribanda	1/2 acre home garden	
81	Tikiribanda	3/4 acre home garden	
82	Gunathilaka	1/2 acre rubber	
83	Jayathilaka	1/2 acre mature rubber	
84	Wijerathna	1 acre home garden and rubber	
85	W. Piyasena	1/2 acre home garden	
86	Aron	20 perch coconut	01
87	B.G. Mudiyanse	2 acre rubber and home garden, rubber and banana	03
88	Mudiyanse	20 perch home garden	
89	Punchi banda	15 perch mature rubber	
90	Werabandara	1/4 acres home garden	
91	Welagedara	1/2 acre home garden	
92	Sanath	10 perch no vegetation	
93	Ukku banda	1 acre immature rubber with banana intercropped and 1 acre mature rubber	
94	Podibanda	1/4 acre home garden	
95	Selawathi	1/4 acres home garden	
96	Ranasinghe	1/4 acre home garden	
97	Gunatathna	3/4 acre home garden	
98	Podi appuhamy	20 perch home garden	
99	Senarathna	3/4 acre home garden	
100	Rambanda	20 perch home garden	
101	Gunasekara	3/4 acre mature rubber & home garden	
102	Mudiyanse	3/4 acre mature rubber	
103	J.R. Mudiynse	1/4 acres rubber (mature)	
104	Tikirimanike	1/2 acres home garden	
105	Jayathilaka	10 perch home garden	
106 & 107	Rambanda & Podiralahami (shared land among 6 family members)	2 acres rubber and home garden	
108 - 112	6 families	1 acre home gardens	
113	Podi Ralahami	8 perch	
114	Arunasiri	10 perch home garden	
115	Jayawardana	2 acres immature rubber, 1 acres mature rubber (earlier intercropped with banana)	
116 & 117	Bandumanike & Rambanda	1 acre home garden (shared)	
118	Perera -	7 acres rubber	14

	Kahagalawatte owner		
119 & 120	Tilak wije & Punci banda	1 acre home garden	
121	Lukumenike	1 acre home garden	
122	Podiralahamy	1/2 acre home garden	
123	Abeysinghe	1 1/2 acres coconut & rubber	
124	Tilakarathna	1 acre home garden	
125	No residents		
126 & 127	Alwis and Wimalasena	1 acre home garden	
128	Jayasena	1/4 acre home garden	
129	Gunasekara	1/4 acre home garden	
130	Dingiri ukku	1/4 acres home garden	
131	Mahinda	2 acres rubber and home garden	
132	Somapala	1 acre home garden and coconut	05
133	Jamis Mudalali	3 acres mature rubber	06
134	Jayarathna	1 1/2 home garden	
135	Jayathilake	2 acre home garden	13
136 & 137	Mutubanda and Dingirimahattaya	3/4 acres home garden	

Illukgoda Village
 (Wegamothale G.S. Division)
 near Mawanella
 Kegalle District

Ma uya Ch...



Kahagala Watta
 (110)
 48 Acres

Beligammana estate
 45 Acres

part of the
 Hoorvella estate
 25 Acres

Wegamothale Village

- Key
- R rubber
 - P paddy
 - route of transect walk
 - ⊙ homes of interviewees

(Main entrance to the village)

Map of Ihala Bopae G.S. Division, near Padukka, Colombo District.

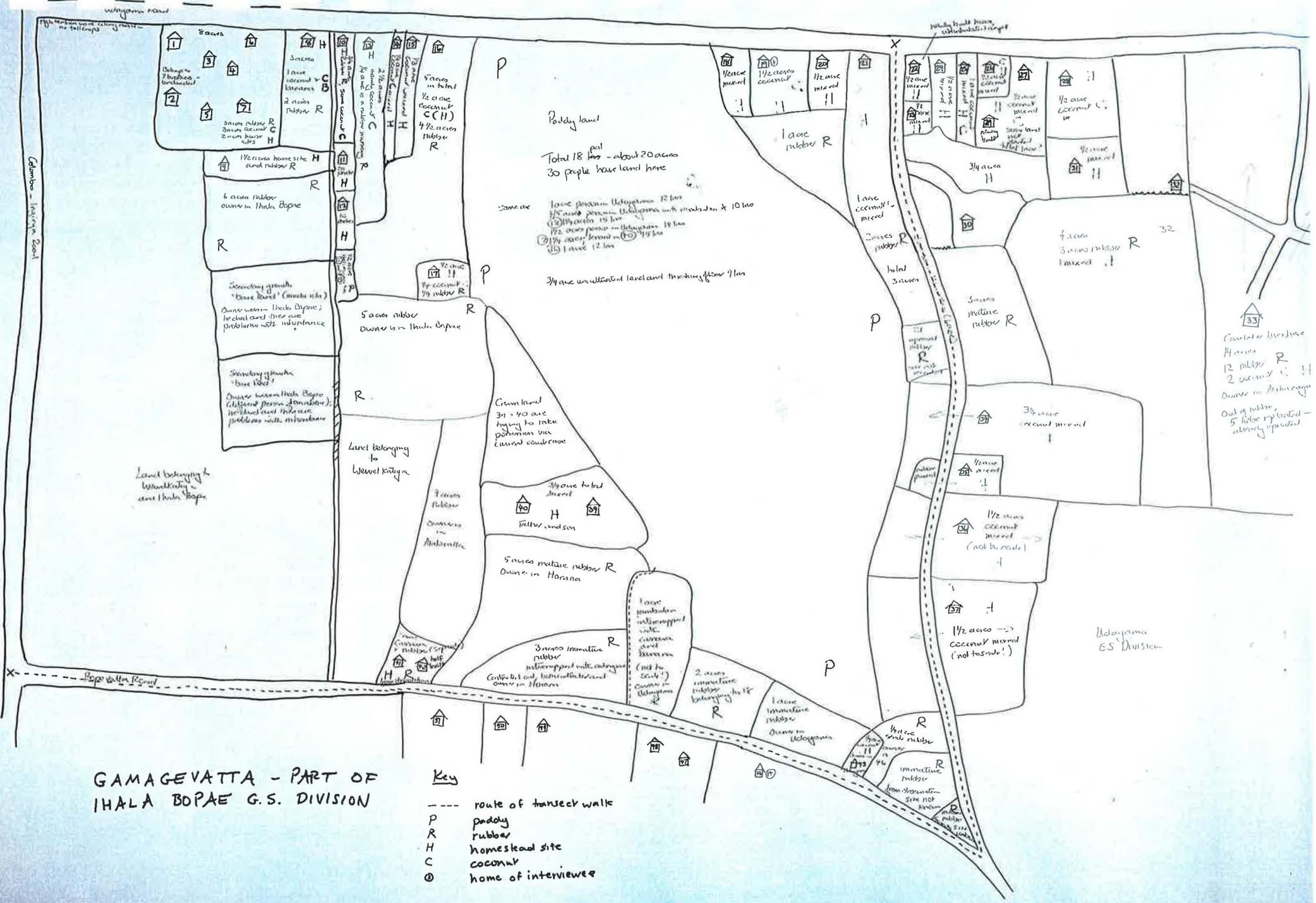
Comprising the villages of Vevelkatiya, Ihala Bopae and Gamagevatta

- boundary of village
- R rubber
- P Paddy land
- house
- ⊙ numbered houses are those where interviews were conducted
- - routes of transect walks



**GAMAGEVATTA - PART OF
IHALA BOPAE G.S. DIVISION**

- Key**
- route of transect walk
 - P paddy
 - R rubber
 - H homestead site
 - C coconut
 - ⊙ home of interviewee



NS houses 44-45 nonexistent