

WHY MUGLAMP COFFEE GROWERS DO NOT PRUNE THEIR COFFEE

By Pukuma Kopi and Gordon Dick

INTRODUCTION

In "The Hagen Coffee Grower"⁽¹⁾ Gordon Dick reported the findings of a survey he had organized and conducted with Melpa speaking University students in the Mt Hagen area in December 1975 to February 1976.

The purpose of the survey was to examine the standard of smallholder coffee cultivation, and to check the growers' level of knowledge of techniques involved in coffee growing. The survey found that "planting, shade establishment and weeding are fairly satisfactory, as is picking and processing (although this latter has remained very much the task of individual smallholders, economies and advantages in centralised cherry processing being ignored). On the other hand, the skills needed to maintain the trees in bearing conditions are not being practised, and, indeed are not understood".

This lack of pruning is seen as the most serious fault in the management of smallholder coffee in the Mt Hagen area (and is a problem in other coffee growing Provinces). The need to obtain maximum returns from gardening land given over to growing coffee is emphasised strongly by Dick, who states "As without care and pruning, coffee trees will decline in yield, the lack of attention is serious. It is more so when new gardens cannot be established because of land shortages. With increasing populations many areas of the Highlands are beginning to experience land pressures. Under such circumstances it is most desirable that high yields be obtained from that land given over to coffee".

In the December 75 - February 76 survey it was found that only 3% of coffee gardens (out of 449 examined) had been pruned. Almost every garden over six years of age could have benefitted from pruning. When the growers were asked about pruning, 38% of them were able to answer the most basic questions but very few could demonstrate how to prune a coffee tree.

The survey was carried out from four centres in the Mount Hagen Province. One of these centres was Muglamp. It is a pleasant area some fifteen kilometres north of Mt Hagen, on the plateaux and foothills above the Gumanch River. The road in to the Patrol Post runs beside Gumanch plantation, the largest and probably most productive coffee plantation in Papua New Guinea.

Most villagers at Muglamp have a coffee garden, and most could extend their plantings if they wished as land pressure is not severe at this time in this area.

In the December 75 - February 76 survey some pruning of coffee gardens was found at Muglamp, but despite the proximity of the well-managed Gumanch plantation, most coffee gardens of the area were not pruned.

One of the participants in the December 75 - February 76 survey was Pukuma Kopi, a senior student (Economics) at the University of Papua New Guinea. Pukuma comes from Muglamp, and, indeed has his own coffee garden there. In the 1976-77 long vacation period Pukuma returned home to investigate further the non-pruning of coffee by his people.

Pukuma's initial plan was to use different demonstrations and extension inputs in different parts of the Muglamp area to see which were most effective in getting villagers to prune.

The five sub-clans of his clan would have each been contacted and would each have received different forms of instruction, some receiving verbal instruction only, some being given demonstrations, and some hopefully being enticed into pruning some of their coffee themselves. Various audio-visual aid materials were to be used to support and emphasise the message in some areas.

All of this proved impractical, however, when the neighbouring Nenembi clan began hostilities against Pukuma's people (the Pipilik Clan) in November. Tension remained high for some months and movement of people was restricted through fear.

When tensions eased, about Christmas time, the clan members became involved in organising a traditional pig-kill ceremony.

At this time Dr Sheldon Weeks visited Muglamp and Pukuma told him of his frustration in organizing his proposed extension trials. Dr Weeks suggested a different course of action to seek villagers' attitudes to pruning.

FOUR PRUNERS AND SOME NON-PRUNERS

There were four villagers with large coffee gardens who pruned their coffee. Pukuma decided to match these with four non-pruners, and to question them in detail. A further group was invited to a discussion of pruning at which the ideas gathered from the intensive questioning could be discussed.

1. The 4 Pruners

<u>Name</u>	<u>Age</u>	<u>Size of Garden</u>	<u>Status</u>
Mai	55	3000 trees	Church leader
Andui	45	2000 "	Ordinary villager
Kuri	50	2700 "	Ordinary villager
Waiyer	50	5000 "	Big man

2. The 4 Non-Pruners

Kopi	50	2000 "	Ordinary villager
Moki	54	1200 "	Traditional leader
Pru	50	2500 "	Former church leader
Rok	48	3400 "	Former luluai

3. A comparable group invited to attend a 'Kivung' on pruning.

RESULTS OF THE DISCUSSIONS

HISTORY OF PRUNING COFFEE AT MUGLAMP

No one seemed to know clearly when coffee pruning had first been introduced to Muglamp. Two of the pruners said they had seen coffee pruning in other areas, and that they began to prune their coffee about 1968, the other two pruners said they had been pruning their coffee for a long time. As Gumanch Plantation was established around 1960 it is certain that Muglamp villagers would have seen coffee being pruned there regularly since the mid 1960s.

INTRODUCTION OF PRUNING

At least one 'didiman' and one missionary brought knowledge of pruning to the attention of people at Muglamp. There was a Chimbu plantation worker, too, who stayed in the village at one time and he taught one of the pruners to prune his coffee. Each of the four pruners acknowledged one of these three as having taught him to prune, while the fourth said he had worked at one of the nearby plantations and had learned to prune there.

PRUNING METHODS

Three of the pruners use the simple and effective "multiple stem" method which is also used on the plantations nearby, the fourth Muglamp village pruner used the more involved "single stem" method in which the trees are capped at about 1½ m from the ground and the lateral branches are trimmed to provide new wood and to prevent self-shading. He learnt this method from the missionary mentioned above.

With the exception of this one advocate of single-stem pruning, all the villagers interviewed, including those who do not prune, thought the multiple stem system was the most suitable.

REGULARITY OF PRUNING

Two of the pruners claimed that they pruned their coffee every year after the coffee season. The other two said they pruned every second year.

The non-pruners stated strongly that they would not want to prune their coffee every year, believing that it would bear well for two years after being pruned.

TOOLS FOR PRUNING

Two of the pruners stated that they had used knives at first to prune their coffee. Now all use secateurs. All said they have trouble obtaining secateurs which are only rarely in stock in the stores in Mount Hagen. There are over twenty thousand villagers involved in coffee growing in the Western Highlands Province and if pruning was to become an important part of the cultural practices a fairly large market would exist for pruning saws and secateurs. (Pruning saws and secateurs are much superior to knives or other implements for pruning as they cut cleanly and do minimal damage to the trees).

REACTION TO OBSERVING PLANTATION PRUNING

Most of the people interviewed individually and those in the group discussion acknowledged the good results of pruning on the plantations and expressed an interest in treating their coffee similarly.

However they said the expatriates had more resources (including labour, tools and time) available. One man in the group discussion observed that for the white man coffee business was the only means of livelihood and therefore he devotes most of his time, labour and resources to growing coffee. He went on to say that the villagers have other obligations which they consider just as important as coffee growing.

THE DIDIMAN'S INFLUENCE ON PRUNING

Most respondents in this study expressed concern that the didiman does not make visits to the village to help the people with their coffee growing. Only one pruner (Waiyer) had received instruction in pruning from an agricultural officer. One other (Mai) said he was once visited by a didiman who talked about the importance of coffee but did not give specific instruction on practical aspects such as pruning.

In the group discussion the opinion was expressed that the didimen are more interested in activities such as vegetable growing, poultry, piggery and cattle projects. All respondents said coffee growing is done by smallholders without the assistance of didimen.

When Pukuma asked how often the smallholders go to seek help from didimen the response was that the people want the didiman to come into the village.

Pruners Mai and Waiyer, both leaders, had sought assistance from the Department of Agriculture. About half the respondents said they did not go to see the didiman because he was far away and they did not know who to see or how to make the correct approach to get assistance.

LAND SHORTAGE AND ITS IMPLICATIONS

Muglamp people are comparatively well off for land. However all respondents acknowledged that land is becoming scarce as the number of people increases. However land pressure has not become a consideration for pruning coffee. If the grower wants to increase production at this stage he can increase his plantings and this is what he would do.

NON-PRUNERS' REACTION TO PRUNERS IN THE VILLAGE

The non pruning respondents admitted that the four men who prune their coffee do get good yields of coffee as a result. They said that they, too, would like to prune their trees, but that they are busy with many things. One non-pruner said that he did prune his coffee until some years ago when he began operating a trade store. He said that during the coffee season and immediately after it many people came to his trade store and he had no time to prune his coffee (pruning time is immediately after harvest).

Non-pruners made the excuse that it was difficult to obtain secateurs for pruning. When asked if those who prune their coffee could help in obtaining these tools the reply was that the pruners show no interest in helping the non-pruners. Yet no non-pruner seems to expect the didiman to come to help them, and are not making any effort to get assistance.

The pruners say that they do advise other villagers to prune their coffee, but that their advice is not accepted. In the group discussion it was surprising to find that three brothers of one of the pruners have not sought his advice nor the use of his tools for pruning. It seems that non-pruners do not ask fellow villagers for assistance.

FACTORS MILITATING AGAINST PRUNING

In recent years at the end of the coffee harvest the villagers have found themselves involved in a number of different activities.

1) The Moka — the traditional exchange system. This is a complex exchange in which Melpa people (in common with other Highland peoples) cement relationships with neighbouring clans and build up political and economic credit. In pre-contact time pigs and shells were the most important items while other scarce items

were also included in the Moka exchange. With the development of a cash economy, money has become increasingly common in the ceremonies. The common time for arranging and performing moka rites has become the coffee bearing season and the period immediately after it.

In Pukuma's interviews almost all respondents, both pruners and non-pruners, mentioned that in the coffee season they had become involved in at least one and sometimes several moka exchanges. In some cases they were recipients while in other cases they were donors. (During the 1976 coffee season Pukuma's family group gave four thousand kina in one moka exchange, and they are planning to give a further two thousand to another group from whom they received one thousand kina in 1975).

Non-pruners pointed out that these ceremonial exchanges are time consuming and prevent them doing extra work in their coffee gardens at this period. Nevertheless the pruners found time to prune their coffee and to participate in making mokas. One pruner said he had been involved in three moka ceremonies. Waiyer, who is very much involved in business, says that he no longer has a strong interest in traditional moka and gives his time to his coffee and to his trade store and commercial vehicle operations.

2) Subsistence gardening — The Muglamp villagers, in common with other Hagen people, have three separate kinds of food gardens: the oko-pana, the pana and the pat-pana.

The oko-pana is the large garden of almost entirely sweet potatoes which remains under crop for some years.

The pana and pat-pana are the temporary gardens which are planted and may be reforested after harvesting is completed. In the pana each year a family plants new crops of taro, yams, bananas, sugar-cane and other vegetables for obtaining supplementary food for their sweet potato staple. The pat-pana contains only wing beans, whose seed pods and tubers are harvested.

For planting pana and pat-pana gardens forest has to be cleared and the area fenced. This is done in the late dry season (about September), and the crops are planted with the coming wet season. For the oko-pana (kaukau garden) the site of the pana or pat-pana may be used.

This traditional gardening, especially clearing, fencing and planting of the pana and pat-pana areas, is carried out at the same time as coffee is being harvested, and the pruning operation would also have to be done in the late dry season. This important subsistence gardening period clashes with the time for pruning coffee.

3) Other cash involved activities — Other commercial activities are important late in the coffee season. One of the non-pruners observed that he had given up pruning coffee after establishing a trade store. Trade store owners and commercial transport operators are especially busy at the end of the coffee season.

There are also other cultural activities besides the moka which involve social obligations among villagers, and which are likely

to be settled at a time when the people have money. These often involve visits to neighbouring groups and also take up time when coffee pruning would be done.

CONCLUSIONS

HOW MUCH TIME TO PRUNE COFFEE

This concentration on alternative activities may distract village growers from pruning their coffee. And the plentiful supply of money at the time may also create such satisfaction that the villager is not concerned with seeking increased income. However a man like Waiyer can look after a trade store and a trucking business, and still find time to prune his coffee. A rational allocation of time is necessary. Pruning would not require a lot of time.

Using the multiple stem system, once a pruning regime has been established it would not be difficult for a grower to prune two hundred trees in a day. The average grower has about 600 trees⁽¹⁾ and few have more than 1000 trees. Hence only three or four days would be required. Adequate leisure time is available in the village to allow for this activity.

The real problem is to get an acceptance of pruning, to create attitudes supportive of the activity, and a pattern of work habits in which pruning is included.

THE IMPLICATION OF THIS STUDY

From the interviews reported in this study it appears smallholders are not ignorant of the importance of pruning and the fact that one would get a better yield as a result of pruning. Young educated people in the village do not manage their coffee gardens differently from the older people. Most school-leavers in the village are primary 'drop-outs'. Perhaps in the long run secondary and tertiary school-leavers may have some influence on pruning practices and coffee growing in general.

A concern of government authorities is the increasing pressure on land in many Highland areas. The amount of land allocated to coffee is an important consideration in land use, and it will become of increasing concern to get as much return as possible from the areas allocated to coffee.

To date the Muglamp area has not experienced land pressure. The people are aware of the increase in population which is occurring. However there is little concern to maximise returns from land, and coffee pruning is not yet seen in these terms.

EXTENSION SERVICES AND PRUNING

After the initial contact and planting phase, agricultural extension support to the smallholders was not kept up.⁽¹⁾ To introduce a practice such as pruning the didiman needs to be in close contact with the growers. At present the field officer's links with the villagers are too rare and too brief. Most non-pruners said that they would be prepared to prune their coffee to get higher yields. The fact is that they do not. Closer contact and encouragement from the didiman would surely give confidence for more growers to prune their trees. In addition the didiman could assist by providing easy access to the proper pruning tools, as well as demonstrating their use to the villagers.

At present the agricultural staff appear to assume that the people know all they need to know about coffee growing, for they spend their time on other less important activities. Yet all the evidence is that village coffee growing could be improved a lot.

As it is by far the most important commercial activity in the Highlands it deserves much greater attention from the agricultural extension services.

REFERENCE:

1. Gordon Dick U.P.N.G. Mimeo, July 1976.



A heavy crop of coffee borne on lateral branches from young primary stems