

Report of a Visit to Cameroon,
November - December 1995, to
complete the first two phases
of fieldwork for the project,
"Domestic Market Potential for
Tree Products from Farms and
Rural Communities"

PROJECT C0642

Victoria Papadopulos

January 1996

Natural Resources Institute
Central Avenue
Chatham Maritime
ME4 4TB

Contents

	Page
Acknowledgements	2
Abbreviations	3
I Executive Summary	4
II Introduction	5
III Methodology and Results	6
Non Timber Tree Product Inventory	6
Marketing Chain Analysis	6
Discussion of issues arising from study of market chains	11
IV Conclusions and Recommendations	
Conclusions	13
Recommendations for follow-up fieldwork	13
Appendices	16
1 Non timber tree product inventory	
2 Map to show markets in the Mountain Cameroon area and table showing market days	
3 Market chain diagrams	
4 Glossary of non timber tree products referred to in text	
5 Itinerary	

Acknowledgements

The author would like to thank the staff of the Mount Cameroon Project, based at Limbe, in South West Province of Cameroon. Project staff provided invaluable assistance with literature on the Mount Cameroon forest, forest product expertise, local knowledge and fieldwork practicalities. In addition, Sarah Laird provided extensive information on medicinal plants. The author is also grateful to Mr Oji Goodwin from the Ministry of Agriculture, Limbe, for his assistance with fieldwork, Dr Manfred Besong, at Ekona Research Station, Dr Enoch Tanjong, at the University Centre of Buea, and staff of the Pan African Institute, for assistance in planning fieldwork.

Abbreviations

APO	Associate Professional Officer
CDC	Cameroon Development Corporation
IFPRI	International Food Policy Research Institute
MCP	Mount Cameroon Project
NRI	Natural Resources Institute
NTTP	Non timber tree product
ODA	Overseas Development Administration
PRA	Participatory rural appraisal
TCO	Technical Cooperation Officer

I Executive Summary

i A visit was made to Cameroon by an NRI economist, in November/December 1995, to begin fieldwork for the IFPRI-NRI joint project, "Domestic Market Potential for Tree Products from Farms and Rural Communities", funded by the Overseas Development Administration. The Mount Cameroon area had been selected as the research site on an earlier visit.

ii The project aims to inform tree product or agroforestry interventions by highlighting the constraints to the development of markets. It aims to achieve this through study of nttp marketing in Brazil (where fieldwork is being conducted by IFPRI) and Cameroon (covered by NRI). A three phase approach to fieldwork has been agreed between NRI and IFPRI:

(a) compilation of an annotated tree product inventory;

(b) rapid collection of data on market systems for 30-40 products, to identify key issues for follow-up through more detailed case studies; and

(c) case studies for selected products.

iii Secondary data sources were used to compile an inventory of non timber tree products and with assistance from staff of the Mount Cameroon Project, information on product source and final market destination was added to this. Approximately thirty products were then selected, covering a range of market destinations and sources (forest, cultivated or products which could be either). Data collection on the thirty products involved visits to markets in the Mount Cameroon area to gather information from traders on markets and marketing. This market information was later used to construct annotated marketing chains.

iv The field work indicates three areas where case studies may provide useful insights into the marketing of nttps: identification of issues affecting scope for domestication; factors influencing the extent and location of value added; and the economic importance of a "basket" of several minor products *vis a vis* specialised high volume trade.

II Introduction

1. A visit was made to Cameroon in November / December 1995 to begin fieldwork for the IFPRI-NRI joint project, "Domestic Market Potential for Tree Products from Farms and Rural Communities". In an earlier visit in October, the Mount Cameroon area had been selected as the fieldwork site.

2. The objectives of this visit were two-fold. Firstly, to compile an inventory of non timber tree products available in the Mount Cameroon area, stratified according to source and final market destination, and secondly to characterise the marketing chains for approximately thirty of these products.

3. The visit took place between November 21 and December 13 1995. A full itinerary is attached at Appendix 5.

III Methodology and Results

Non Timber Tree Product inventory

Methodology

4. An inventory of non timber tree products available in the Mount Cameroon area was compiled using secondary data sources. In total, this listed approximately 300 products, although some items were shown more than once under different local names. Staff and associates of the Mount Cameroon Project then provided information on product source and final market destination (attached here as Appendix 1, although Latin names have been added subsequently).

5. The intention had been to stratify the inventory according to product source and final market destination. However, although differentiating between cultivated and forest products was a fairly straightforward exercise, it was hard to reach agreement on which formerly purely forest products were now actually cultivated and hence fitted into the forest and cultivated category. Similarly, it was not always possible to identify the final geographical market destination of some of the listed products.

Results

6. Information recorded in the inventory includes product local name; product source (forest, cultivated or forest and cultivated); final market destination (subsistence, South West Province or elsewhere); product end use; seasonality and frequency in markets (rarely available, sometimes available or often available). Although largely complete, information can still be added to the inventory.

Market Chain Analysis

Methodology

7. A total of eleven markets were visited in the Mount Cameroon area (Big Mouth, Bokwango, Bonadikombo, Bonjongo, Buea, Ekona, Great Soppo, Limbe, Muea, Mutengene and Muyuka). These are all shown on the map of the area attached at Appendix 2 with a chart showing the days of the week on which each market is held.

8. Producers and market traders were questioned about the source of their products, any marketing services which they provided (transport, storage, processing) and the main type of purchaser (traders, consumers, caterers, etc.). It was often necessary to buy product samples in order to encourage a useful dialogue.

9. A visit was also made to Plantecam, Mutengene, to investigate operations regarding the use of bark from *Prunus africana* in pharmaceutical manufacture and export.

Results

10. The market chain diagrams which were constructed from the information gathered in market interviews are attached at Appendix 3. The majority of products fall within two main groups:

- chains where transport is the only marketing function provided (mainly horticultural produce); and
- chains where processing and transport are the main marketing functions provided, with processing carried out by the initial producer/gatherer (mainly forest products)

11. Some products do not fit into either of these categories in which case they are grouped separately.

Group 1 *Chains where transport is the only marketing function*

12. This group includes avocado, country onion bark, fresh bush pepe, grapefruit, lemons, limes, oranges, palm nut, papaya, plantain and tangerines.

13. Either the products are sold by the producer / gatherer to the trader in the place of production, and it is the trader who then transports the product to market, or the initial producer provides the transport function.

14. Where products are only grown in certain geographical areas of Cameroon, the marketing chains can become quite long and be made up of several intermediate (*buy'em sell 'em*) traders, each moving the produce from one market to another until it reaches its final destination.

15. For some products, the producer was actually selling in the market and reported that when his/her own production was limited, or the season was at an end, he would buy from other traders to resell.

16. For avocado, only one producer-seller was interviewed, and this man sold from his house directly and in the market. The remainder of people interviewed were *buy'em sell'ems*, buying in one market in the Mount Cameroon area and selling them again either in the same market or transporting them to another market to sell. Customers would be either consumers, or traders intending to sell them on again in other markets.

17. Grapefruit, oranges and tangerines have been grouped together in one diagram, following the same chain pattern

from producer through to consumer. As these fruits tend to be cultivated to the east and north east of the Mount Cameroon area, producers either bring them into markets in the area, or sell them to traders nearer to home who then transport them to markets in the area and sell there to other traders. Some might buy in bulk to transport on special buses going to markets in Douala.

18. Two separate chains have been shown for plantains; those originating on private holdings, and those from CDC or Del Monte plantations. The latter are collected "after work" by estate workers and sold to traders who bring them to market. Where producers are selling in the market they may also buy plantains from other producers to resell.

19. The market chains for oil palm bunches are similar to those for plantains, with the product originating either on farms or on CDC estates and then being collected by CDC workers for sale.

Group 2 *Chains where processing and transport are the main marketing functions provided, with processing carried out by the initial producer / gatherer*

20. This group is mainly composed of products gathered in the forest areas, including bush mango, bush pepe (dry), country onion seed, mbongolo, njansanga and *Tetrapleura tetraptera* and coconut and palm oil.

21. The person gathering the forest products (all but coconut and palm oil) will prepare them at home for use. This may mean removing an outer shell, cracking open a casing and/or drying the product before sale.

22. The function of transport from the house to the first market can be carried out by the producer or this may be separated from the processing function, with traders buying direct from households and providing transport themselves to market.

23. For some products, for example njansanga and country onion seed, hawkers are seen walking around the various markets with buckets of the products, selling to individual market stall holders. Either traders will buy from these market stalls to resell, or consumers will buy for home use.

24. Palm oil comes from two supply sources. CDC sells the product in large drums to traders who then transport the product to market to sell in smaller units to consumers and other traders, or people produce it at home, particularly around Ekona, from oil palm which they have cultivated themselves. These producers tend to sell in Ekona market, leaving the transport function to other traders who buy from them.

Group 3 *Products where the gatherer / producer processes and also markets the product*

25. This group is smaller than groups 1 and 2 containing only five identified products: sponge (from *Acacia spp.*), palm brooms, cane skewers, wrapping leaves and raffia palm baskets.

26. The three main characteristics of this group are:

(a) the greater tendency for the producer to bring the product to market her/himself, and to sell direct to the final user, making the chains relatively short;

(b) the non-food/non-medicinal, household-use nature of the products; and

(c) relatively small-scale individual operations, producing a limited number of each product.

Group 4 *Products involving trade with Nigeria*

27. These products have been grouped separately here because of the effects which trade with Nigeria can have on local markets, and because the trade was specifically mentioned by traders of these products. However products included in other groups may be traded with Nigeria, even though these were not mentioned in market interviews.

28. The group includes eru, chewing sticks, bitter cola and kola nuts.

29. Eru demonstrates a complex marketing chain. It comes from several different areas in Cameroon, but two areas were mentioned particularly during field study. Firstly there is the eru gathered in the Yaounde area. Traders from the Mount Cameroon area travel to Yaounde to buy from gatherers there who have already bundled the crop. They transport it back to the Mount Cameroon area where they resell the bundles to traders in the area. These may rebundle the product and sell it to market traders who chop the product to sell to final consumers or caterers. Fine chopping of the eru leaves is a skilled job, requiring a special knife and much experience.

30. The second route is for the product gathered in the local Mount Cameroon area. This is bundled and then passed between various traders each providing processing and transport functions, until it reaches the final consumer. Market traders reported that the local product was more expensive than the product coming from Yaounde. Its scarcity in the local area means that it takes longer for people to gather it, and its value is therefore higher. Moreover, the price differential suggests that consumers perceive differences in the two sources of eru.

31. Chewing sticks, used for cleaning the teeth, were not frequently seen in markets, apparently because of low demand. It takes up to a year for a person to use one stick. The author was told that a Nigerian trader brings chewing sticks into Cameroon to sell.

32. For bitter cola, there appeared to be import and export trade with Nigeria, with traders from Nigeria delivering their product to markets and buying Cameroonian cola to take back with them. The Cameroonian product was more expensive in markets than the Nigerian product, and it was reported that this was due to quality differences.

Group 5 Others

33. There were three products which did not seem to fit any of the other four categories. These were bitter leaf, *Prunus africana* and bananas.

34. The first of these follows a route similar to that of eru, with transport and processing being the main market functions, processing referring only to bundling and rebundling of the product. However, it differs from the eru chain in that no trade with Nigeria was mentioned. It does not belong to Group 1 either, because of the processing function.

35. A drug can be manufactured from *Prunus africana* by pharmaceutical companies for use in prostrate treatment. The main company dealing in *Prunus africana* in Cameroon is Plantecam in Mutengene, part of the Fournier Group, France. They report that they have 150 harvesters who they send out to the forest to collect the bark of the tree in a sustainable manner. The bark is processed in Mutengene and the derivative is exported to France.

36. There are allegedly about 100 other companies in Cameroon exporting the raw bark to Europe (mainly Italy) for processing. These companies buy from the villagers who collect the product from the forest.

37. Bananas also stand alone, because although following a route similar to that for plantains and other Group 1 products, they can be stored by the producer or first trader in order to alter their form as they ripen. When first picked and green, they must be cooked and eaten like plantain, but when stored and given the chance to ripen, they may be eaten as a fruit. Other products which are stored in the dried form, such as some of the forest products in Group 2, are stored to benefit from price increases once the production season is finished.

Discussion of issues arising from study of market chains

Sustainability and domestication

38. The field work conducted during this visit (which focused on markets, with relatively attention given to primary producers) does not reveal major problems with the marketing systems for the horticultural produce appearing in Group 1 above. In fact the distribution system from producer through to final consumer seems very efficient with traders transporting products over wide distances to the markets where there is demand for them.

39. Similarly the marketing system for products in Group 2 works well, with processing mainly carried out by the initial producer or gatherer and then transport to the final market destination being arranged in stages by a combination of the producer and/or traders. However, most of these products are gathered from forest areas, and some products may be harvested unsustainably.

40. It is likely that attempts are being made to cultivate some of those products which are being extracted most rapidly. Enquiries about this among MCP staff revealed considerable uncertainty as to which previously forest-only products were now being cultivated as well. It would be useful to identify those products which are now cultivated, the reasons they were selected for cultivation, and whether any lessons can be learned from this regarding the potential for domestication of other products.

41. Market chains for some products are very long, in terms of distance from initial producer to final consumer, condition of roads used to link markets, and the number of market participants involved. This implies strong inter-regional demand and suggests that market opportunities exist for increased outputs from cultivation.

42. Eru, a green leafy vegetable provides a good example of this, being widely demanded both within Cameroon and in Nigeria. Traders in the Mount Cameroon area now buy eru gathered in the Yaounde area because it is cheaper than the product gathered locally. The local product is now relatively scarce, increasing the time taken to collect it and its value. As a consequence, eru produced in other parts of Cameroon is more competitively priced than the local product in the Mount Cameroon area, despite the higher road transport costs incurred.

The importance of nttps to household income

43. During fieldwork, it was often stated that, as a result of the economic crisis in Cameroon and rising rates of unemployment, many households were becoming increasingly dependent on the income from sales of

products from their farms and gathered in the forest. Low volume, short market chain items, representing a component in a "basket" of forest products, of variable size and composition, may be important in supplementing and stabilising income from other sources, particularly where the latter is low and unreliable. Trading of certain products is gender differentiated (men generally trade medicinals, for instance), and children too are involved in the collection and trade of certain products.

Processing and international trade

44. Most of the products studied in this report involve relatively small-scale traders and processors supplying local or neighbouring export markets. One product which stands out from the others in terms of market radius and scale of processor involved is the bark from *Prunus africana*. This is exported in the unprocessed and processed form to Europe for use in pharmaceutical manufacture. Two issues arise from this: what are the conditions for such trade to occur? and what conditions prompt one company only to process the bark in-country?

IV Conclusions and Recommendations

Conclusions

45. The purpose of the preliminary field study reported here was to identify marketing issues which might influence the design and performance of agro-forestry interventions.

46. An inventory of roughly 300 nttps present in the Mount Cameroon area was compiled, with additional information added on product source, availability, and market destination. Market chains were investigated for 30 of these products.

47. The fieldwork highlighted three areas where further investigation is recommended:

- (a) influence of market factors on domestication;
- (b) factors affecting extent and location of value added; and
- (c) the importance of several minor products versus high volume specialisation.

Recommendations for follow-up field work

(a) Influence of market factors on domestication

48. Some tree products are domesticated and commercialised (eg oil palm). Some are thought to have potential for domestication and interest has been expressed in this by farmers (eg eru). It would be useful to identify the market factors which determine prospects for domestication of non timber tree products. It is possible that a fundamental linkage to the export sector is a prerequisite for domestication and commercialisation.

49. This topic could be investigated through case studies of selected products:

- (a) a new product being promoted by a project where there is difficulty in persuading people to grow it;
- (b) a product where there is pressure for domestication from traders/collectors (eg eru)
- (c) a product which has switched from forest to cultivation (noting also the literature on experience elsewhere on cupuacu, Brazil nuts, rubber, cocoa)

(b) Factors affecting the extent and location of value added

50. The objective of this component would be to investigate the conditions which determine or permit value adding activity, through study of value added nttps. The work would investigate the conditions which determine where the activities occur, who is involved, and the nature of the activity. The information generated would be useful in the context of development projects which presuppose the potential for income generating activity based on processing of nttps (which is often the case, particularly in locations distant from major markets). A case study of *Prunus africana* should be included here to investigate the reasons why one company only exports the product in processed form.

(c) Importance of several minor products versus high volume specialisation

51. The field work conducted to date shows that many of the nttps are traded in low volumes, with short marketing chains, representing just one component in a basket of goods which varies in size and composition (according to season and possibly other variables). These products are often traded by women, and children may also be involved in collection and/or trade. Taken together these products may represent an important and flexible source of income, accessible to relatively disadvantaged groups (landless, those who suffer seasonal unemployment or underemployment, women managing multiple responsibilities/tasks). If this is one of the most important ways in which nttps contribute to the local economy, it has major implications for agro-forestry initiatives which tend to focus on one product (or just a few products).

52. Investigation of this is potentially methodologically problematic (for instance, with respect to the definition of a typical "basket", or choice of products to be researched). It may be appropriate to conduct case studies within selected forest villages, to compare a specialised high volume trade with a basket of goods, to identify those involved in production, trade and related activity and how they benefit. Consideration would be given to the importance of nttps to income and employment (extent, location, for whom) and subsistence, including seasonal and gender (/children) dimensions.

53. All three topics ((a) to (c) above) can be studied through case studies of selected products during the final phase of field work, using informal survey methods and analysis of market chains. These may be supported by other examples in the literature, and international trade (where relevant).

54. Factors affecting scope for extra-regional trade cannot be investigated under this project, which is concerned with domestic market potential. However, for Cameroon, trade with Nigeria should not be viewed as "international" trade (since it is essentially an extension of local trading behaviour); this will also give greater comparability with the Brazil study, where strictly domestic trade will have much wider geographical coverage.

Appendices

Appendix 1: Non timber tree product inventory

Key to NTTP inventory

Product Source

Cultivated (C)
Forest (F)
Forest and cultivated(FC)

Final Market Destination

Subsistence (S)
Sold only within South West Province (P)
Sold Elsewhere (E).

Frequency in Markets

Product's abundance in local markets on a scale of 1 to 3 where:
1 = rarely available
2 = sometimes available
3 = often available

Product Name (Local)	Latin Name	Product Source	Final Market Destination	Product End Use	Product Seasonality	Frequency in Markets
Aditang (Ibo)	<i>Lasianthera africana</i>			Leafy vegetable		
Afefe				Medicine		
Akom / Jombeh	<i>Terminalia superba</i>			Firewood, medicine,		
Alligator pepe	<i>Aframomum melagueta</i>	FC	E	Medicine (fruit)		2
Apple (local)	<i>Eugenia jambos?</i>	C	P			
Atama leaves	<i>Heinsia crinita</i>	F	E	Leafy vegetable		3
Avocado	<i>Persea americana</i>	C	E	Fruit Boundary marker		
Awoma		F				
Aysakokah				medicine		
Bahama grass		C	P	medicine		3
Banana	<i>Musa sp</i>	FC	E	Fruit Boundary marker		3
Banga				Medicine		
Bebe	<i>Monodora brevipes</i>			Thickening soups		
Bekeku		F	S			1
Belli fruit		FC	S			2
Bitter cola	<i>Garcinia kola</i>	F	E	Spice; medicine	March / April	3
Bitter leaf		FC	E	Vegetable		3
Bomboku				Nuts, seeds		
Bongolo mbongo	<i>Aframomum citratum</i>	FC	P	Flavouring for soup / medicine		3
Bongu				Firewood		
buma	<i>Bombax or Ceiba</i>	F	S	Cotton stuffing		2
Bush carrot		F	S			1

Bush mango draw	<i>Irvingia gabonensis</i>	F	E		Jul - Sept	3
Bush mango sweet		F	S	Spice		2
Bush onion - seed	<i>Afrostryrax lepidophyllus</i>	F	E	Spice		3
Bush onion - bark		F	P	Spice		2
Bush pepe	<i>Piper guineese</i>	FC	E	Spice/ flavouring for soups	Oct - Feb	3
Bush plum		F C	S	Fruit		1
Bush rope		F	S	Building material	All year	
Bwassa leaf		F	S	medicine		1
Bwazazo / Basaso				Firewood		
Bwembi				fruit		
Calavanje				Vegetable		
Canarium schweinfurttii resin		F	E	Medicine		
Cancho kamerounensis roots				Medicine		
Cashu		FC	S	Spice	June / July	
Change blood		FC	S	Edible fruit		1
Chewing sticks (from Garcinia)	<i>Garcinia mannii</i> <i>G. brevi</i> <i>pedicellata</i>	F	E	Personal hygiene	All year	2
Chunku	<i>Uvaria spp.?</i>			Flavouring for soup		
Cocoa	<i>Theobroma cacao</i>	C	E	Firewood		
Coconut	<i>Cocus nucifera</i>	C	E	Fruit Boundary marker		2
Cola leaves	<i>Cola nitida</i>	F	E	medicine		2
Cola tree	<i>Cola nitida</i> / <i>C. acuminata</i>	FC	E	Boundary marker Firewood		3

Country onion (flat seed)	<i>ngaikai</i>	F		Thickening soups (seed)	July - Sept	
Ebebwe				medicine		
Ebuea		FC	S	medicine		1
Ebwebwe	<i>Macaranga occidentalis</i>			Wrapping leaf		
Efefe				Firewood, medicine		
Efondo	<i>Strombosia glaucescens?</i>			Boundary marker		
Efongi	<i>Pterygota macrocarpa</i>			Firewood		
efum / ebaba / esekeseke	<i>Tetrapleura tetraptera</i>	F	E	Thickening soups, spice	March / April	2
Egbe-egbe				mushroom		
Egebwe / Egbegbe	<i>Neoboutonia spp.</i>			Firewood		
Ekenju				Medicine		
Ekoh / Ekowo	<i>Brucea guineensis</i>			Firewood		
Ekong				Medicine (bark)		
Ekongbong (fluted pumpkin)	<i>Telfairia occidentalis</i>	C	E	Leafy vegetable		3
Ekumbi / Aykumbeh	<i>Ficus chlamydocarpa?</i>			Firewood		
Elambah				Boundary marker		
Elinguwe				firewood		
Eliva-liva				medicine		
Eluluwa	<i>Kalanchoe</i>			medicine		
Enantia chloranthea bark		F	E	Medicine		1
Eru	<i>Gnetum africanum</i>	F	E	Leafy vegetable	All year	3
Esambah	<i>Pychanthus angolensis</i>			medicine		
Esangah				medicine		

Esosoamaija				medicine		
Esukusuku	<i>Erythrina addisoniae</i>			Boundary marker		
Eteveh				wrapping leaves		
Evundeh				mushroom		
Ewoke				medicine		
Ewowo	<i>Macaranga occidentalis</i>			Firewood, medicine		
Ewu-la-fako	<i>Laportea aestuans</i>			medicine		
Eylengue				Firewood		
Fembi						
Fever/Lemon grass	<i>Cymbopogon citratus</i>	FC	S	medicine		1
Fogam				Firewood		
Futu / breadfruit	<i>Artocarpus communis</i>	F				
Gbangu	<i>Bridelia micrantha</i>			Firewood, medicine		
Gespel				Boundary marker		
Guava	<i>Psidium guajava</i>	C	P	Fruit Boundary marker		2
Hibiscus	<i>Hibiscus esculentus rosasinensis</i>	C	S	Boundary marker		1
Hot alligator pepe		F C	E	Medicine	Dry season	3
Ibeye (cam wood)	<i>Pterocarpus spp.</i>	F	E	Medicine (wood); carving		
Ifanja				medicine		
Ifondoh	<i>Stombosia spp.</i>			Firewood		
Ikemi				medicine		
Ikoko	<i>Dracaena arborea</i>			Boundary marker		

Inasso						
inunu (dried mushroom)				Food		
Inyangiyangi				medicine		
iroko	<i>Chlorophora (Milicia) excelsa</i>	F	E	medicine, boundary marker		1
Isaka	<i>Albizzia gummifera</i>	F	E	Medicine, firewood		1
Isaume				Firewood		
Isele				Firewood		
Isuse				medicine		
Itondo-tondo	<i>Afromummum</i>			medicine		
Itongongo	<i>Rauvolfia vomitaria</i>			Boundary marker, firewood, medicine		
Ivengia						
Iveve	<i>Dracaena deisteliana</i>			Boundary marker, firewood		
Iwongongo				Boundary marker		
Jackfruit	<i>Artocarpus heterophyllus</i>			Boundary marker		
Jaija me Njomba				medicine		
Jama nijana						
Jato	<i>Piptadeniastrum africanum</i>			Firewood		
Jenge				Boundary marker		
Jombeh	<i>Terminalia superba</i>			Firewood		
Jondinga	<i>Alchornia floribunda</i>			Firewood		
Jososa	<i>Alchornia laxiflora</i>			medicine		
Jupombamboli	<i>Pollia condensata</i>			medicine		

Kanja	<i>Rauvolfia macrophylla</i>			Firewood, medicine		
King stick		F	E	Medicine		1
Kingne (Mankon)		F C		Soup		
Komila				Edible fruit		
Krekre	<i>Corchorus spp.</i>	F C		Leafy vegetable		
Kucha				Sponge		
Kungang / wokaka				Medicine		
Kwanju				Flavouring for soup		
Launga				medicine		
Lavhe				vegetable		
Layzongu						
Leeohmah						
Leetinde				medicine		
Leetulangbwah				vegetable		
Lemon	<i>Citrus limon</i>	C	E			2
Lezayangi						
Lgonde				medicine		
Liambamba				medicine		
Lihsengi / Umbrella tree	<i>Musanga cercropoides</i>	F	S	Firewood		
Lijoke	<i>Funtumia elastica</i>			Firewood		
Linenge	<i>Dracaena arborea</i>			Boundary marker, medicine		
Lisambi	<i>Xylopsia africana</i>			Firewood		
Lisavou				medicine		
Litoh la mbwah	<i>Emilia coccinea</i>			medicine		
Litu	<i>Ficus capensis</i>			Firewood		
Litutu	<i>Raffia hockerii</i>			Boundary marker		
Liwoko						

Liwunjah				medicine		
Lome isa faya na ewule				medicine		
Longoso	<i>Ficus exasperata</i>			Firewood		
Lunga				medicine		
Lyanga-angu	<i>D. arborea</i>			Boundary marker		
Mabwezi						
Macoba	<i>Studtia stipulata?</i>			Firewood		
Magamanjombi (red leaf)	<i>Eremomastax polysperma</i>	F C		Medicine		
Mahogany	<i>Entandrophragma spp. or Khaya spp.</i>	F	E	Firewood, medicine		1
Makoy				Boundary marker		
Mangalla				medicine		
Mango		C	S	Firewood		
Manjueli leaves						
Manyingeh				Boundary marker		
Masavo / Bush tea				medicine		
Massepo	<i>Vernonia anthelmintica</i>	C	S	medicine		1
Matanda		F	S	Firewood		1
Matu						
Mazi mazi				medicine		
Mbako	<i>Spathodea campanulata</i>			Boundary marker		
Mbanga / Mwanga				Firewood		
Mbangogo						
Mbava				Firewood, medicine		
mbofo				rope		

Mbomboko						
Mbongi	<i>Alchornea spp.</i> <i>Cassia alata</i>			medicine		
Mbow				Firewood		
Mbwelle-wondondo				Medicine		
Medicinal plants					October - April	
Meese				Edible fruit		
Milk stick		F	S/P	Firewood		1
Mobwe						
Moegbve				vegetable		
Moejoejoe				nuts, seeds		
Moelakakalaka				vegetable		
Moetulu				medicine		
Moevatah				medicine		
Moganga/ Kaluba stick	<i>Spondias mombin</i>			Boundary marker		
Mohsahsah				Firewood		
Mojojo				Vegetable		
Mokaka				Firewood		
Mokolikoli				Boundary marker		
Moloyko						
Monganga	<i>Spondias mombin</i>			medicine		
Mongene				Boundary marker		
Mongossi / Iron wood	<i>Lophyra alata</i>	F	E	Firewood		3
Monja	<i>Ficus mucosu</i>			Firewood		

Monkey kola		F	S	Wood for flooring, building; twigs for chewing sticks. Fruits dried and oil extracted - food. Medicine		1
Mosenge	<i>Macaranga hurifolia</i>			Firewood, medicine		
moseseni				cane baskets		
Mosongosongo				medicine		
Mosso Mosombe				medicine		
Motim-limbi	<i>Kigelia africana</i>			medicine. boundary marker		
Mukamu	<i>Erythrina vogelli</i>			Boundary marker, firewood, medicine		
Mukosa				medicine		
Mundanuwani				medicine		
Munga				medicine		
Mushrooms				Food	October	
Mwau				Boundary marker		
Mwende mopkai				Medicine (roots)		
Namayoweh				medicine		
Ndanda				medicine		
Ndo	<i>Vernonia anona</i>			Boundary marker		
Ndole		C	E	vegetable		3
Ndombe				medicine		
ndombo				leaves - soap		
Ndomboh				medicine		
ndongo	<i>Carappa procera</i>			rafia ropes		
Ndototo	<i>Sterculia tragacanthus</i>			Boundary marker, medicine		

Ngambo				medicine		
Ngami sewo				Firewood		
Ngohnoh				medicine		
Ngolle						
Ngongi	<i>Ficus kamerunensis</i>			Firewood		
Ngote				mushroom		
Ngowu				Boundary marker		
Njanja-isiu	<i>Gambeya gigantea?</i> <i>Aningeria robusta?</i>			Firewood		
Njansanga	<i>Ricinodendron heudelotii</i>	F	E	Spice	March / April	3
Njengu	<i>Milletia sp.</i>			Firewood		
Njiko				medicine		
Njoni				Firewood		
Njososo				Boundary marker		
Njufa				Flavouring for soup - root		
nkanja				Medicine		
Nsanga a mokosa				medicine		
nsongo stems				mats		
Ntah				Medicine		
Numjuwhelee				medicine		
Nyaka liambo				medicine		
nyong-nyonge				Medicine, firewood		
Oha				Boundary marker		
Onge				Rope		
Orange	<i>Citrus aurantium</i>	C	E	Boundary marker		
Palm oil	<i>Elaeis guineensis</i>	C	E			3
Palm wine		FC	S	Drink	All year	2

Pawpaw	<i>Caria papaya</i>	C	P			2
Phembi						
Plantain		C	E	Boundary marker		3
Plum	<i>Spondias sp.</i>	FC	E	Boundary marker		1
Raffia palm		F	S	Drink		1
Rattan (molongo, moseseni)		F	S E	weaving	All year	1
Sasava						
Sieke				medicine		
soft grass				mattresses		
Soppo-Ndene				medicine		
Sour sop	<i>Annona muricata</i>	C	S			
Spondia		F	S	medicine		
Sweet alligator pepe (mososei)	<i>Aframomum hanburyi?</i>	F C	E	Medicine / Fruit for flavouring soups?	Dry season	2
Sweet bitter leaf	<i>Vernonia insignis</i>	F C	S	Leafy vegetable		
Tamchu				Thickening for soups		
Tatue				medicine		
Tekah/ Taka				Boundary marker		
Tomato (wild)		F	S			
Tondo /Afrommumu		F		Fruit		
Tondu				Spice		
Two fingers	<i>Copaifera mildbraedii</i>			Medicine		
Umanga				Firewood		
Umbananga				Firewood		
Umlenge				Firewood		
Umsangu				Firewood		
Valaria				medicine		
Vekeku						

Veunette						
Wagua				Boundary marker		
Water leaf	<i>Talinum triangulare</i>	FC		Leafy vegetable		1
Watuwa tree: gum and ngaiya	<i>Canarium schweinfurthii</i>			Medicine (gum); food (ngaiya)		
Wbonji ya				medicine		
Wendomba leaves						
Whekaku				fruit		
Whembi	<i>Treculia africana</i>					
Wheyomah				fruit		
Wheyzongu				wrapping leaves		
Whezay				medicine		
Woanga-anga				Firewood		
Woangu-angu						
Wocangu				vegetable		
wogondo				Firewood		
Wohngoh	<i>Fagara spp.</i>			Firewood		
Wohwinga-winga				Firewood		
Wokaka	<i>Khaya spp.</i>			Firewood, medicine		
Wokeke	<i>Allophylus spp.</i>			Firewood		
Wokeku	<i>Myrianthus arboreus</i>			Firewood		
Wokuka	<i>Alstonia boonei</i>			Firewood, medicine		
Wokuku				medicine		
Wololoh	<i>Enantia</i>			medicine		
Wolule / Woloulay	<i>Kigelia africana</i>			Boundary marker, medicine		
Wombah / Drummer stick	<i>Cordia melinii</i>	F		medicine, boundary marker, firewood		
Wondelelu	<i>Cordia aurantiaca</i>			Boundary marker		

wonge				rope		
Wongoh	<i>Zanthoxylum</i>			medicine		
Wongolo / mango	<i>Mangifera indica</i>			Firewood		
Wonjongi	<i>Poga oleosa</i>			medicine		
Wosa sawa						
Wosangu (huckleberry)	<i>Solanum nigrum</i>	F C		Leafy vegetable		
wotangu	<i>Prunus africana</i>	FC	E	Medicine		
Wotolongo / Red liquid tree	<i>Harungana madagascariensis</i>			medicine, firewood		
Wowangenga				Firewood		
Wowokolo						
Wowungu	<i>Sorindiea arboreus</i>			Firewood		
woyoyo				Medicine		
Wozangu	<i>Solanum spp.</i>			vegetable		
Wrapping leaves (Nsongo)					All year	
Wungu	<i>Pseudospondias microcarpa</i>			Boundary marker, firewood		
Yonga-mwese				Firewood		
Yumba-enge				Firewood		
Zau		F	S	wrapping leaves		2

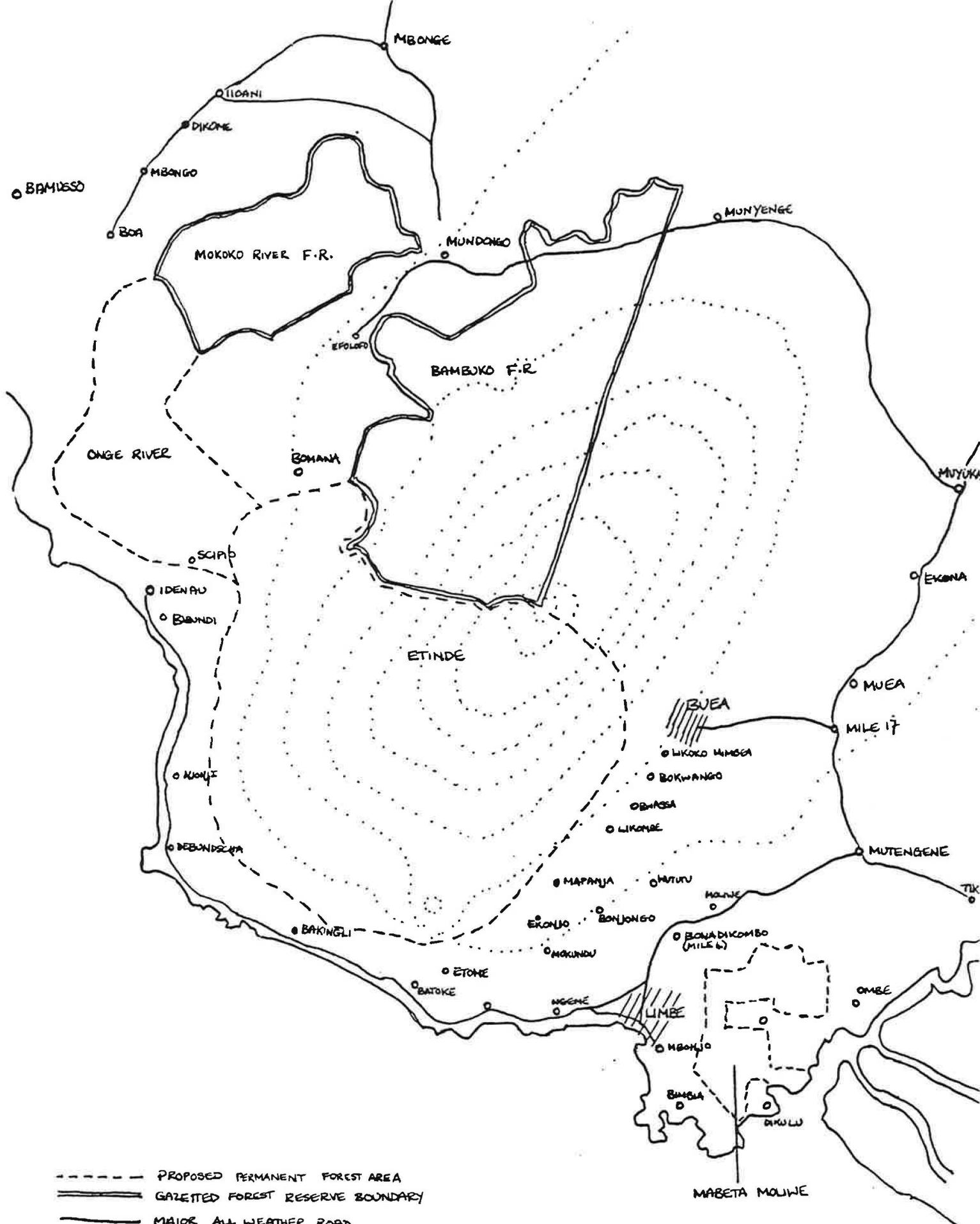
References for inventory

Carter E J, Limbe Botanic Garden and Rainforest Genetic Conservation Project Socio-Economic and Institutional Study Final Report, ODA, UK, 1992

Jeanrenaud S, The Conservation - Development Interface, A Study of Forest Use, Agricultural Practices, and Perceptions of the Rainforest, Etinde Rainforest, South West Cameroon, ODA, 1991

Laird S, unpublished research, 1995

Appendix 2: Map to Show Markets in the Mount Cameroon area



- PROPOSED PERMANENT FOREST AREA
- === GAZETTED FOREST RESERVE BOUNDARY
- MAJOR ALL WEATHER ROAD
- SETTLEMENT
- //// URBAN AREA
- CONTOUR @ 500 METRES

Market Days in the Mount Cameroon Project Area

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Batoke				X			X
Big Mouth Mutengene		X			X		
Bokwango		X				X	
Bonadikombo (Mile 4)	X			X			
Bonjongo	X			X			
Buea			X		X		
Ekona		X				X	
Great Soppo		X				X	
Idenau						X?	
Limbe		X			X		
Mabeta			X			X	
Mapanja							
Muea				X			X
Mutengene			X			X	
Muyoka		X			X		
Ngeme			X			X	
Scipio Camp							
Yoke			X				

Appendix 3: Market Chain Diagrams

Group 1 Chains where transport is the only marketing function

Group 2 Chains where processing and transport are the main marketing functions provided, with processing carried out by the initial producer / gatherer

Group 3 Products where the gatherer / producer processes and also markets the product

Group 4 Products involving trade with Nigeria

Group 5 Others

Notes to Accompany Market Chain Diagrams

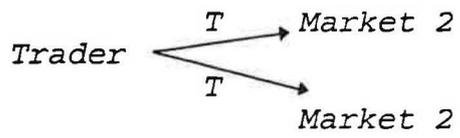
1. S Storage
P Processing
T Transport

2. A diagram such as:



would mean that Trader 1 processes the product, transports it to Market 1 and sells it there to another trader. This trader further processes the product and sells it to consumers and traders (for resale).

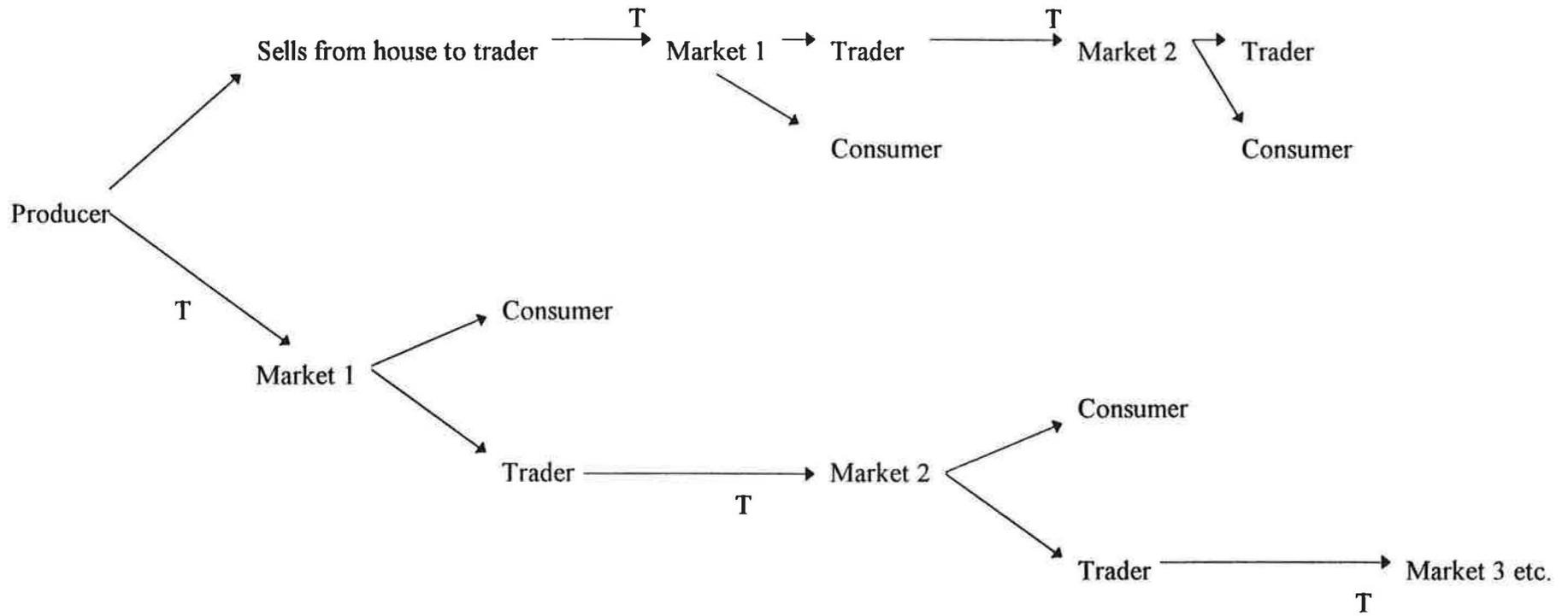
3. A diagram such as:



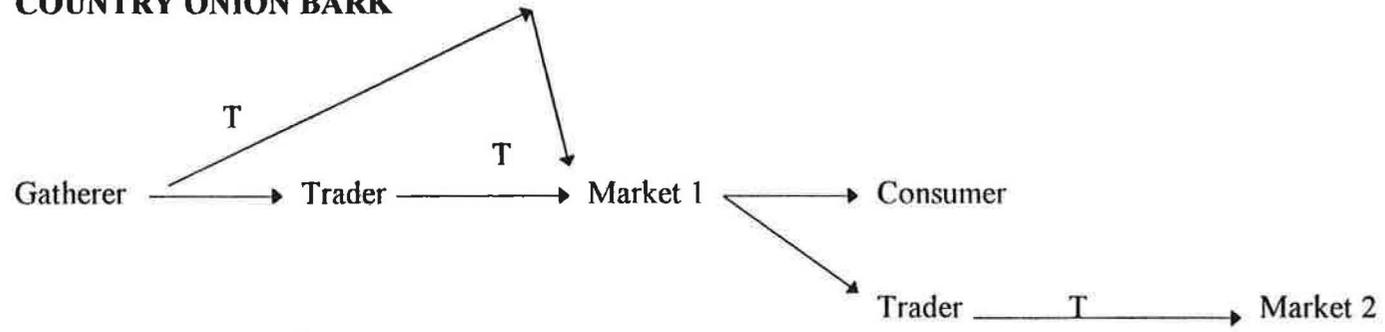
would mean the trader is selling in two geographically different markets.

Group 1 *Chains where transport is the only marketing function*

AVOCADO



COUNTRY ONION BARK

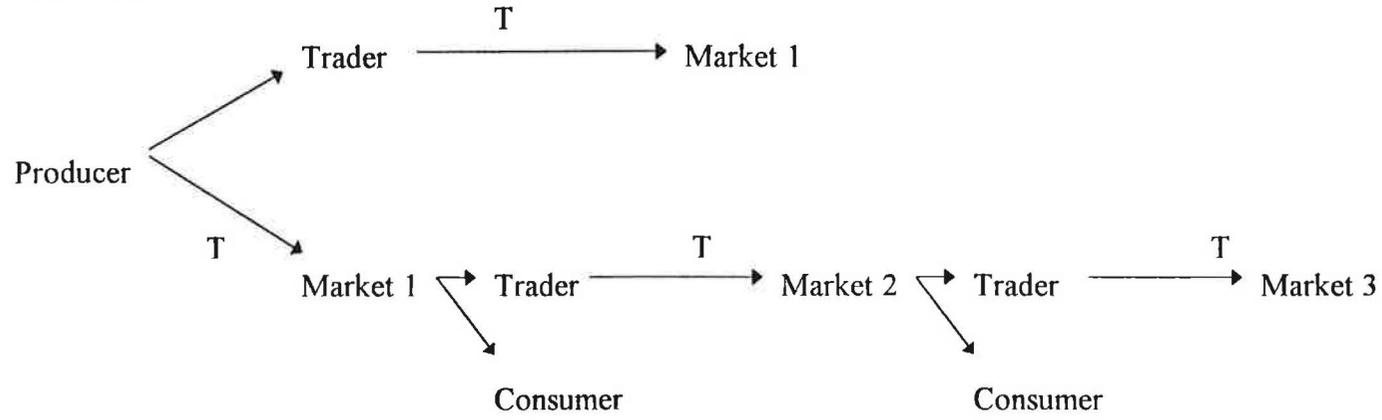


These products are often gathered around Bamenda and Bafoussam. The Markets shown lie within the Mount Cameroon area.

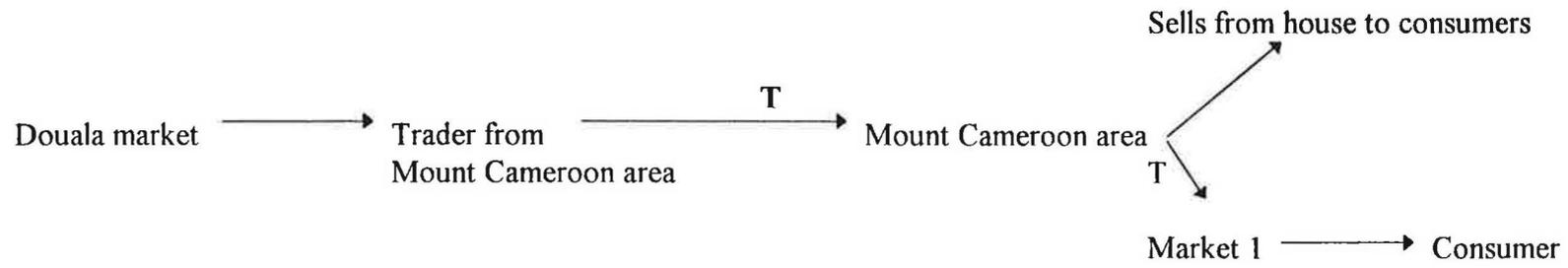
BUSH PEPE - FRESH



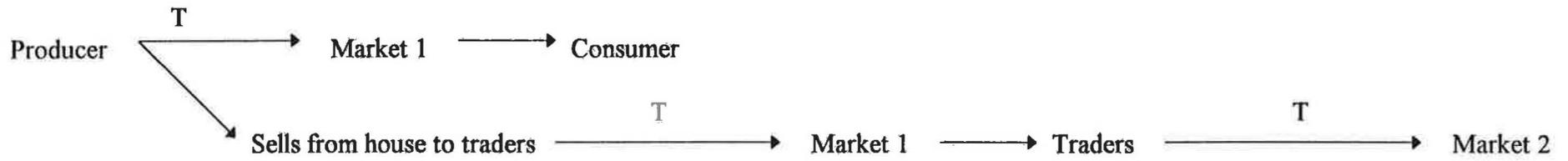
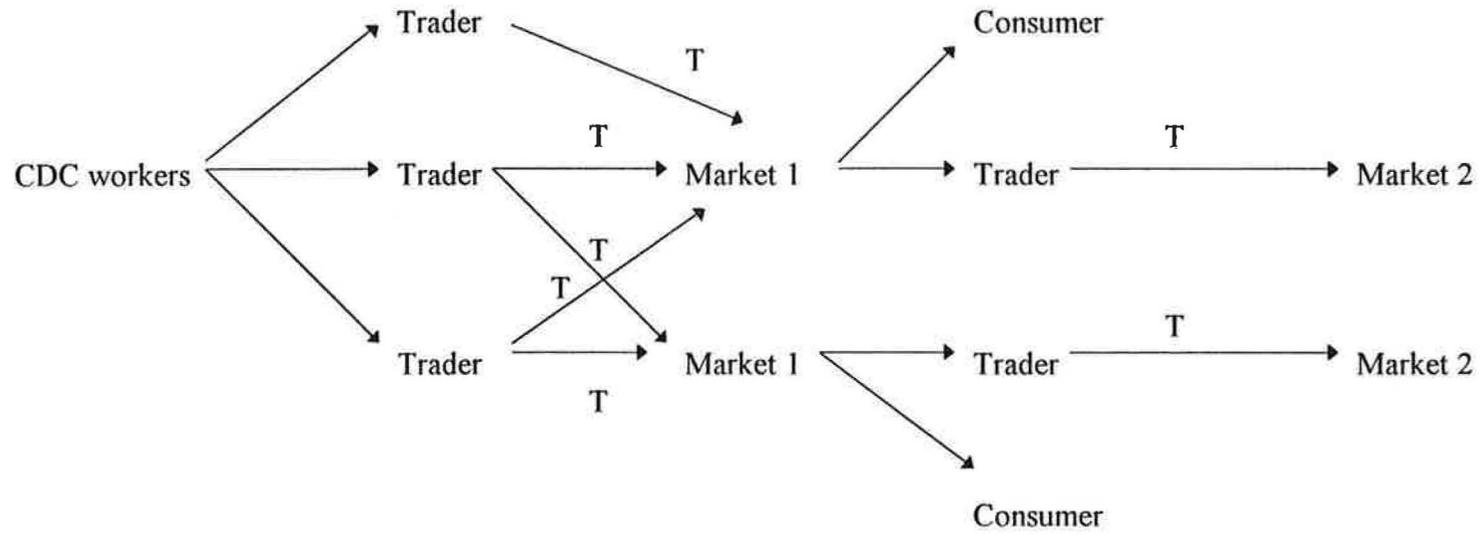
LEMONS



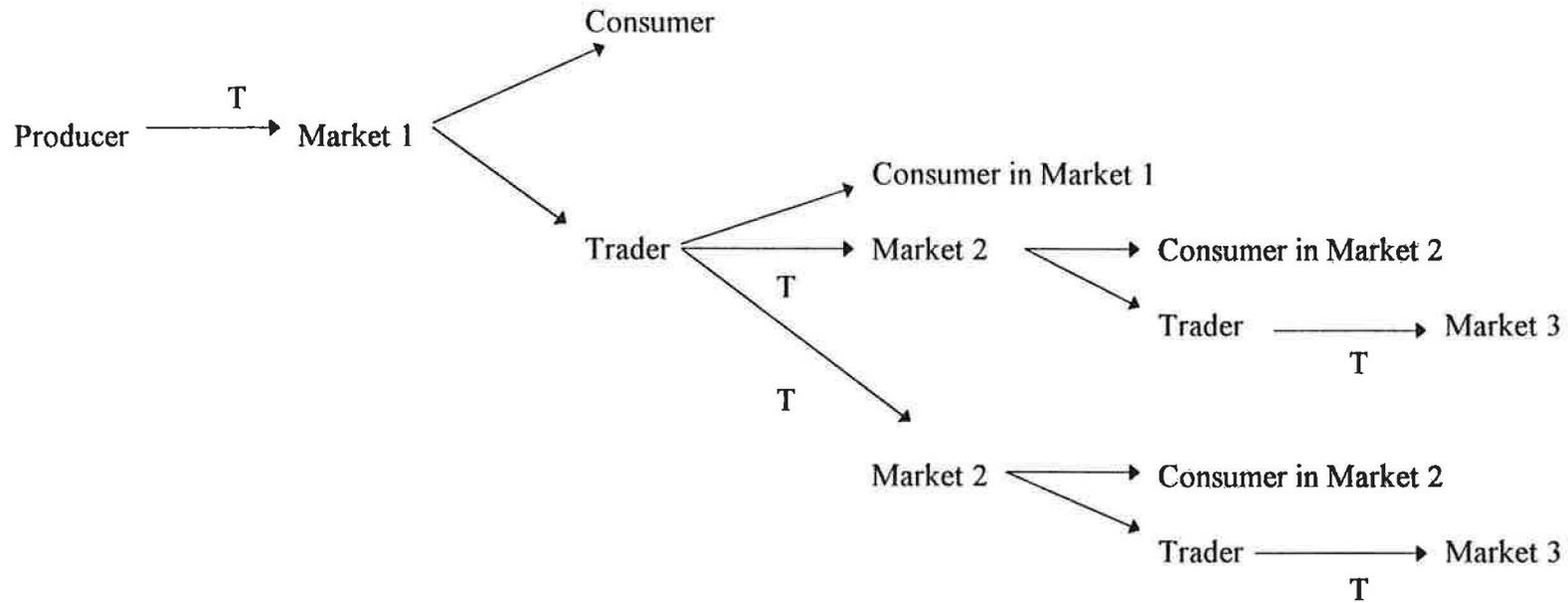
LIMES



PALM NUT

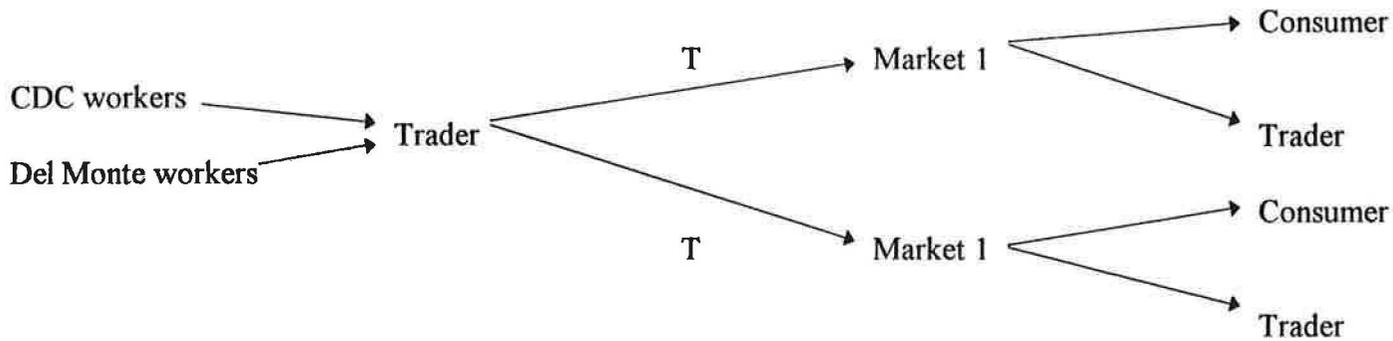
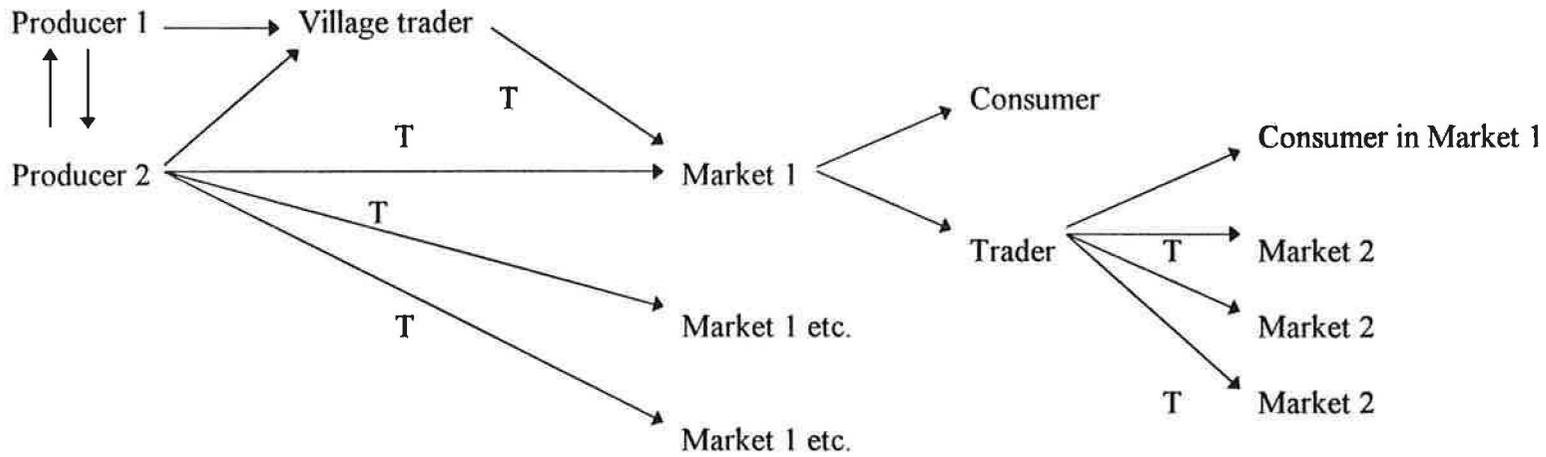


PAPAYA



Markets 1 and 2 lie within the Mount Cameroon area.
Market 3 may be outside the area, e.g Douala.

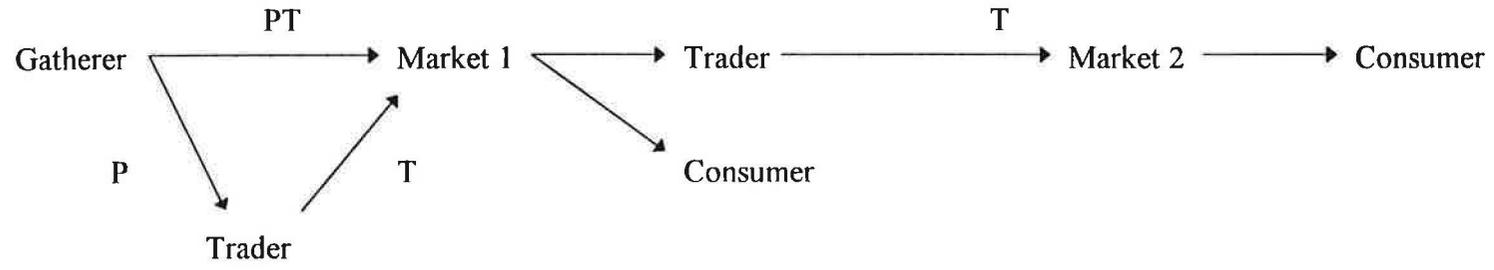
PLANTAIN



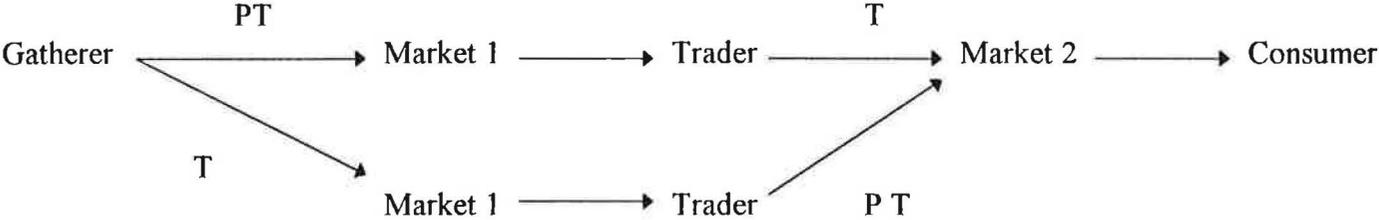
Market 1 lies within the Mount Cameroon area.
 Market 2 could be outside South West Province, e.g. Douala

Group 2 Chains where processing and transport are the main marketing functions provided, with processing carried out by the initial producer / gatherer

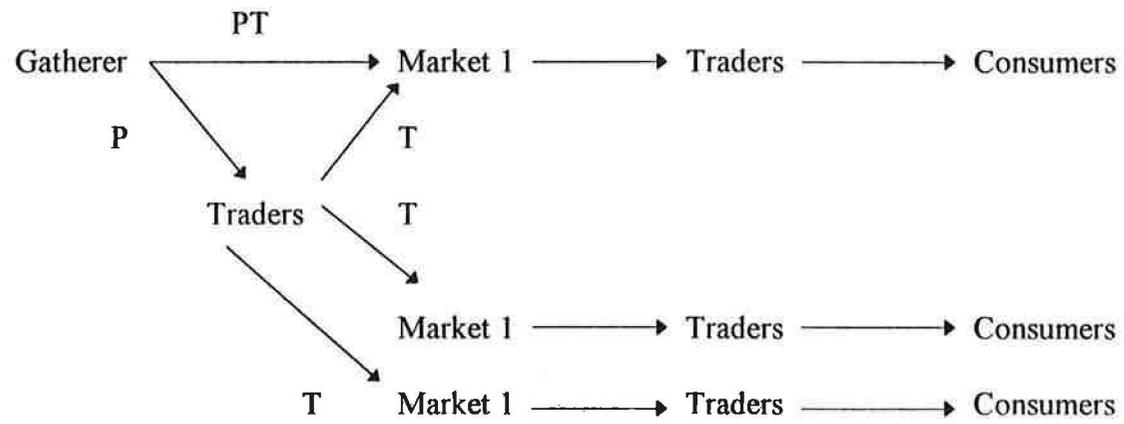
BUSH MANGO



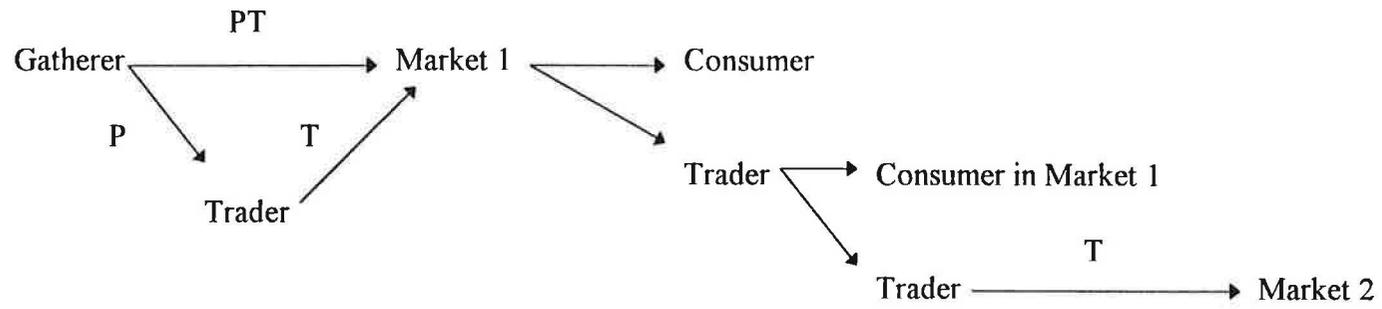
BUSH PEPE - DRY



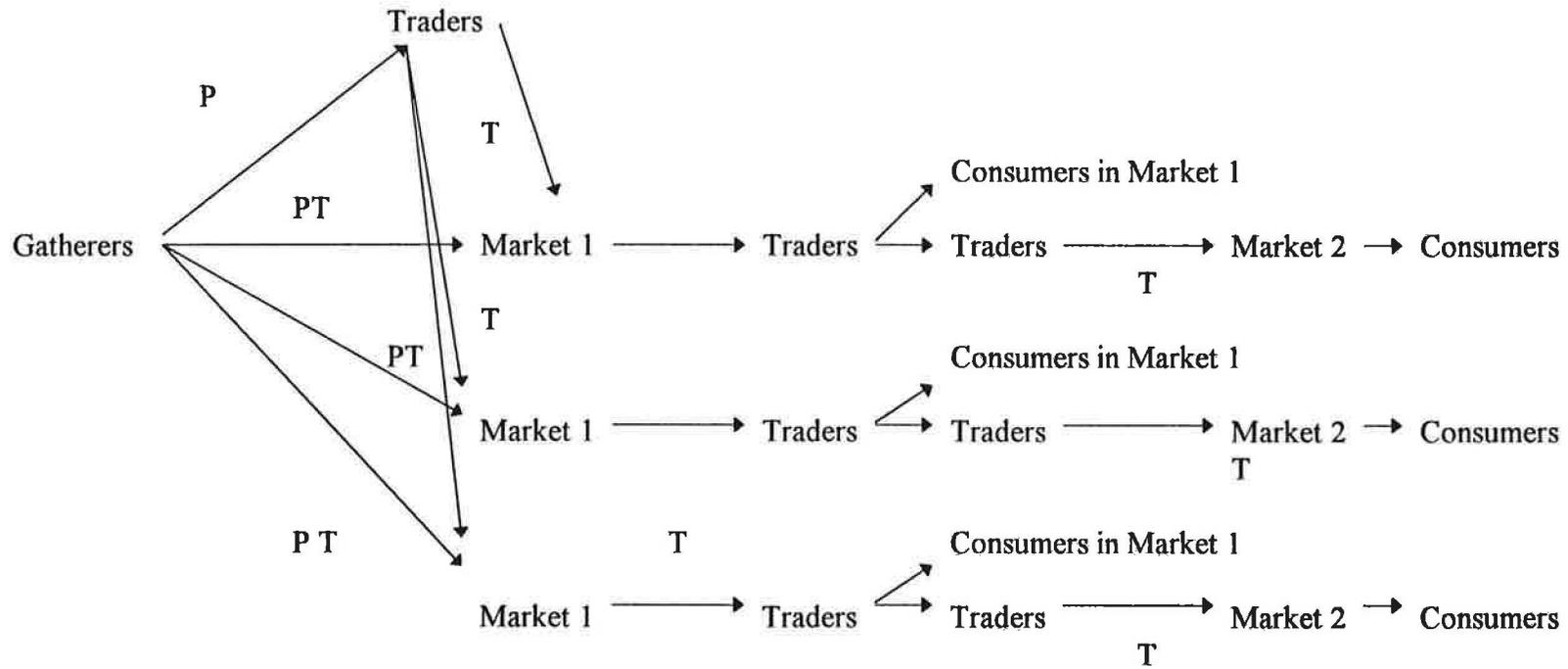
COUNTRY ONION SEED



MBONGOLO

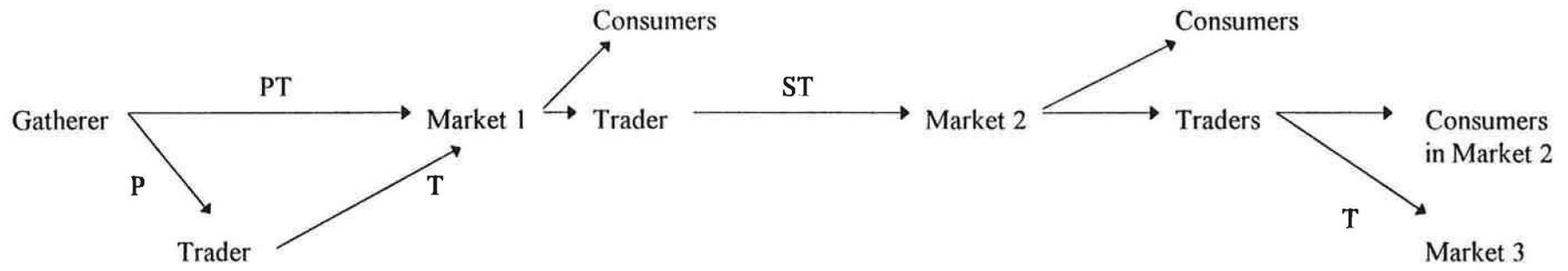


NJANSANGA

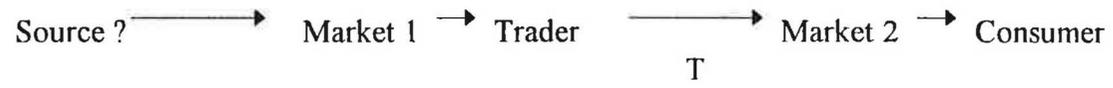


Gatherers in Kumba, Bamenda and Mount Cameroon area.
 Markets 1 and 2 in Mount Cameroon area.

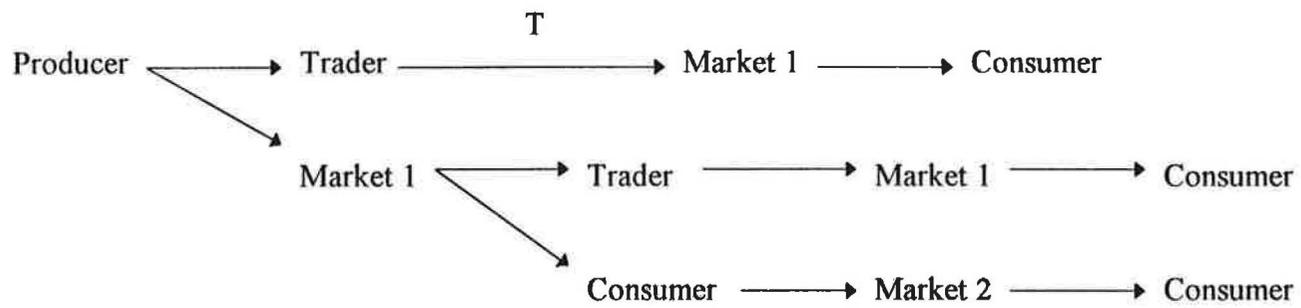
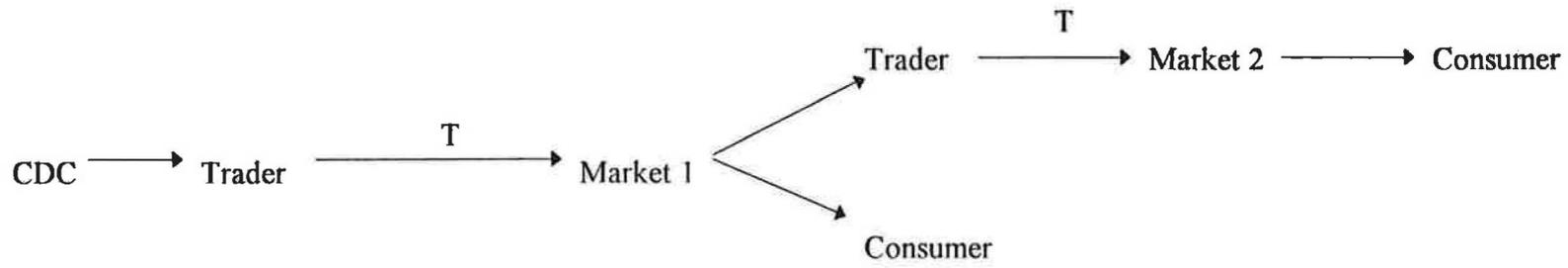
TETRAPLEURA TETRAPTERA



COCONUT

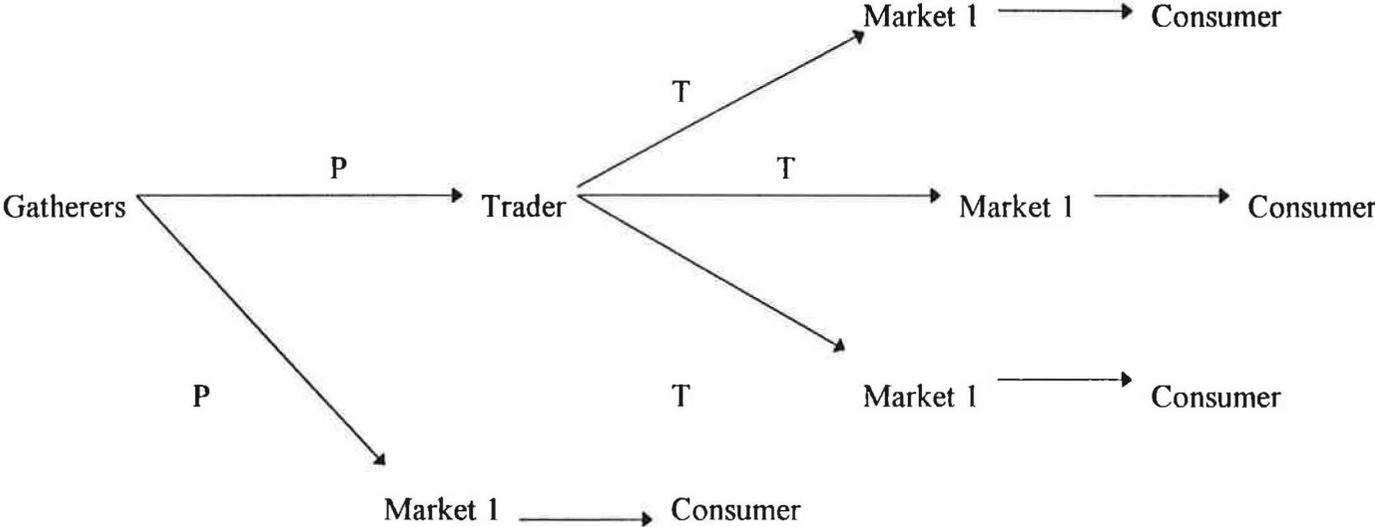


PALM OIL

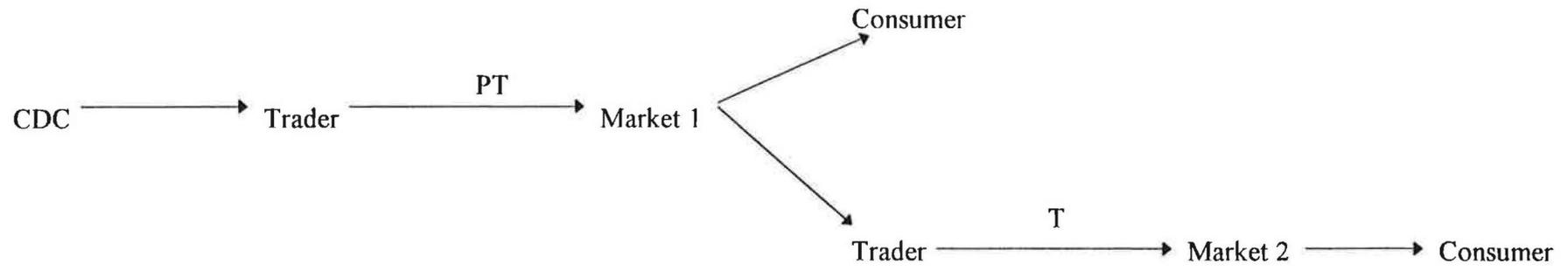


Group 3 *Products where the gatherer / producer processes and also markets the product*

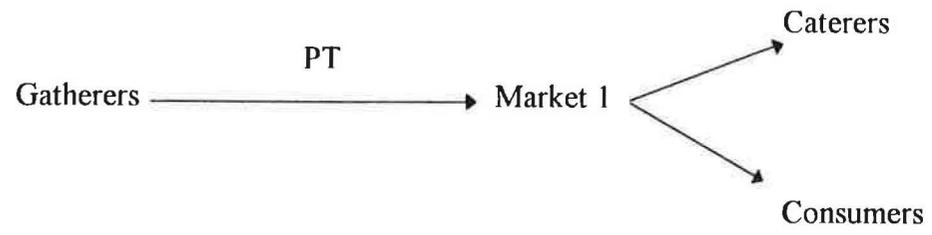
SPONGE



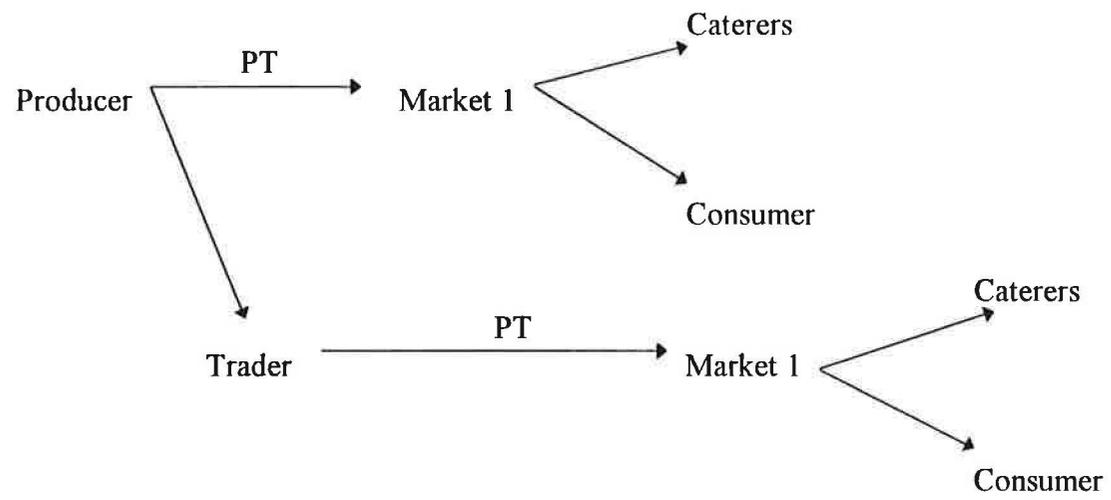
PALM BROOMS



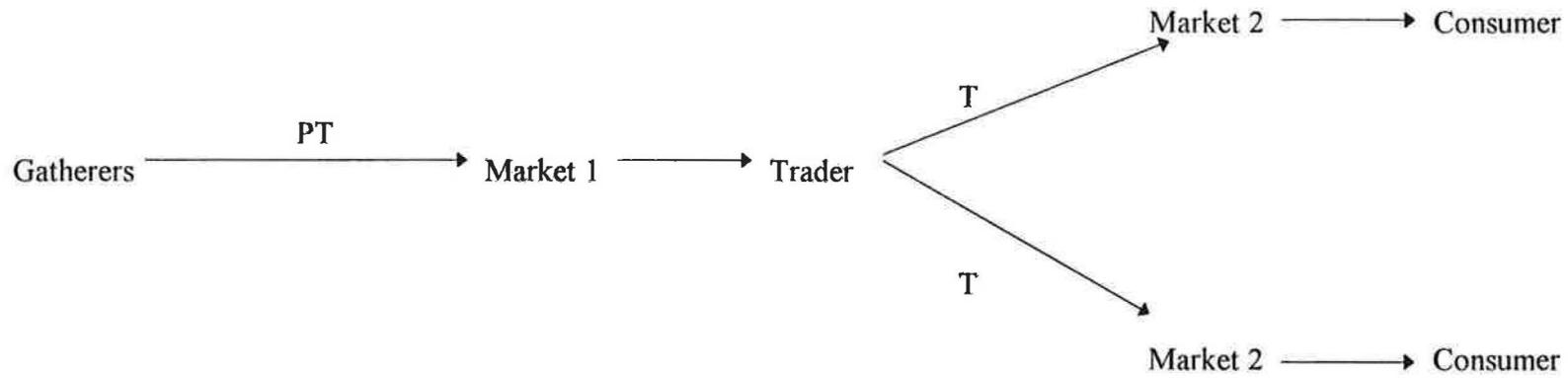
CANE SKEWERS



WRAPPING LEAVES



RAFFIA PALM BASKETS

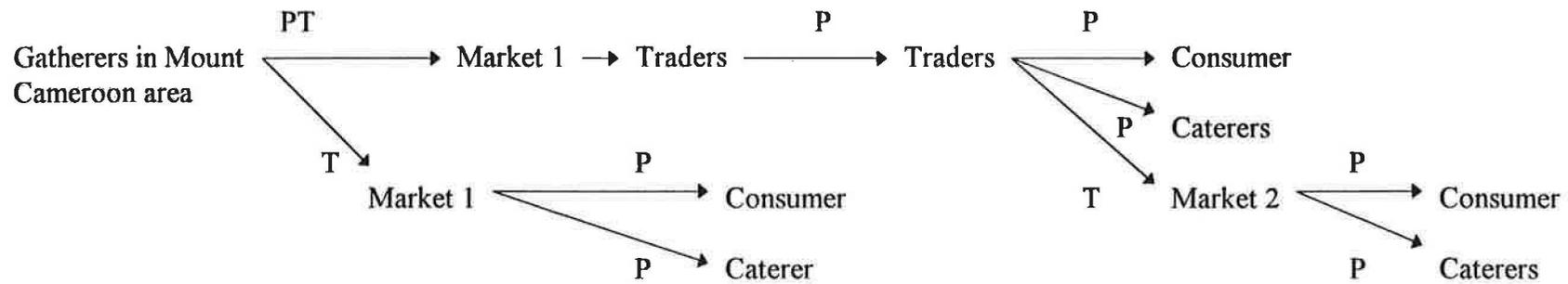
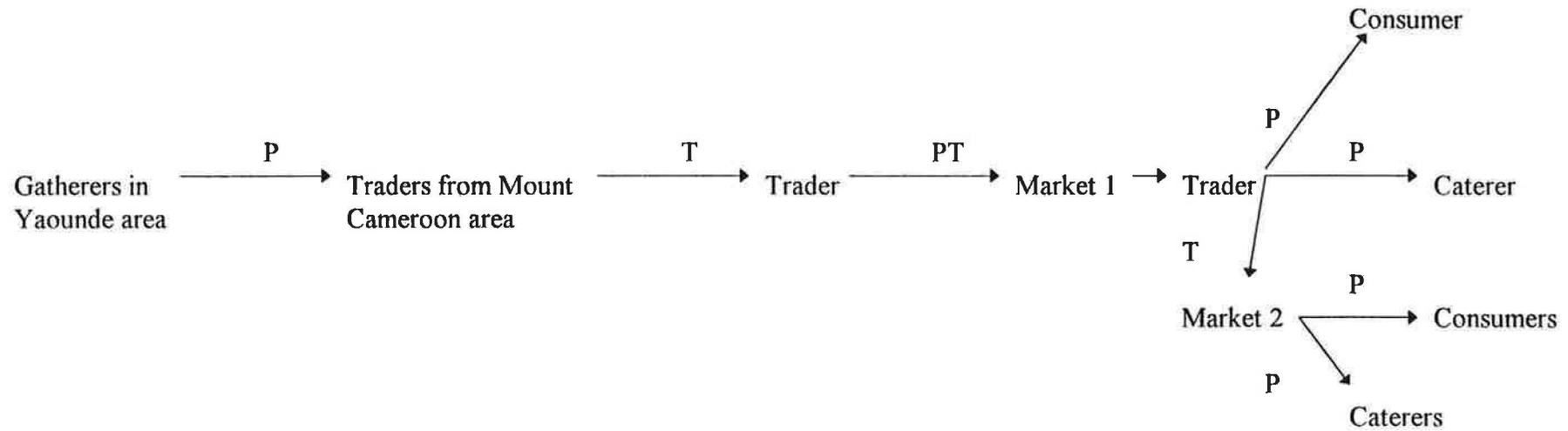


Market 1 is in Bafoussam.

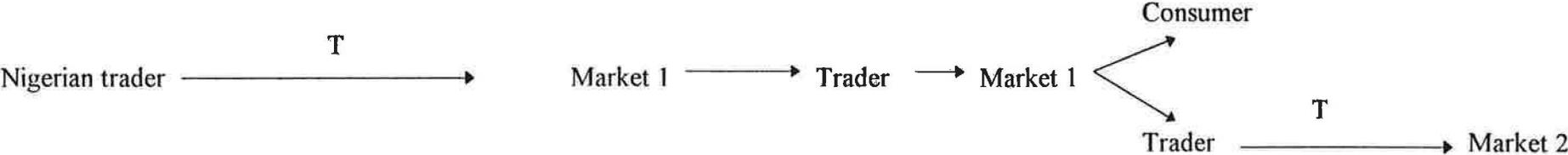
Market 2 is within the Mount Cameroon area.

Group 4 *Products involving trade with Nigeria*

ERU

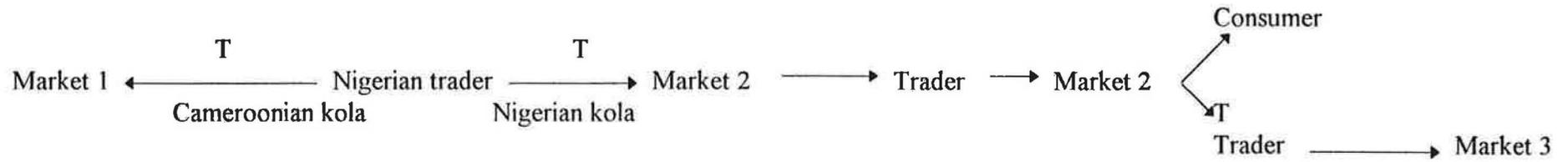


CHEWING STICKS



Market 1 lies within South West Province, Cameroon.
Market 2 is within Cameroon, but may be outside South West Province.

BITTER COLA

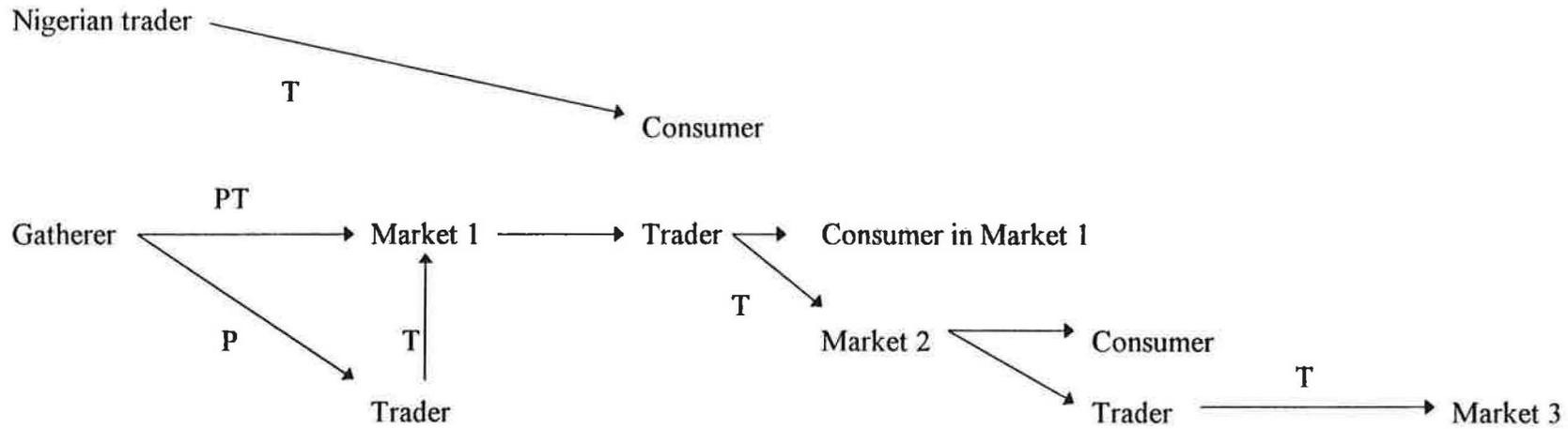


Market 1 is in Nigeria.

Market 2 is within South West Province, Cameroon.

Market 3 is within Cameroon but may be outside South West Province.

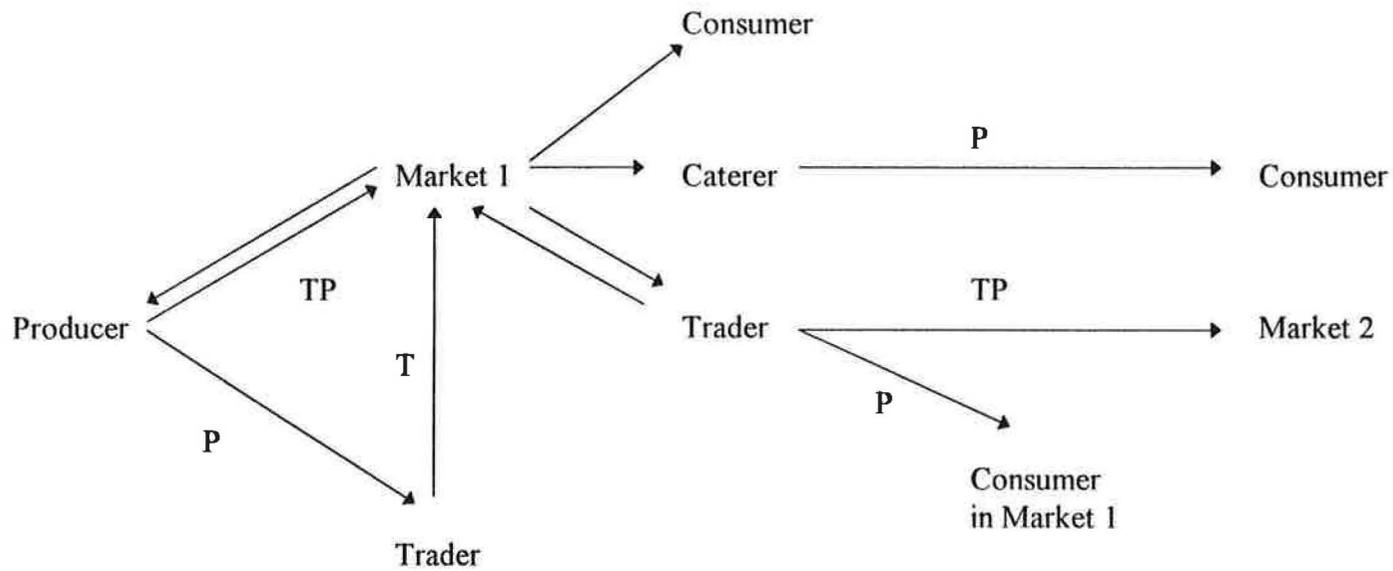
KOLA NUTS



Traders bring kola nuts from Nigeria to sell to traders in markets in the Mount Cameroon area. In Cameroon, Kola nuts come from the area around Bamenda and Muyuka, amongst others. Markets 1 - 3 may all lie within the Mount Cameroon area.

Group 5 *Others*

BITTER LEAF

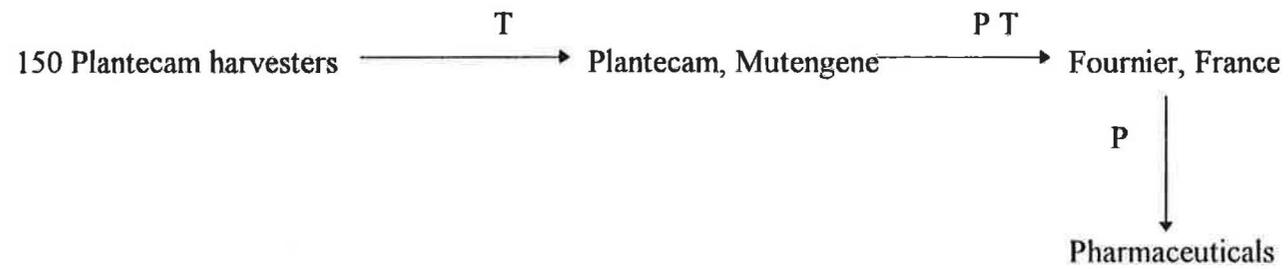


Market 1 is within South West Province.

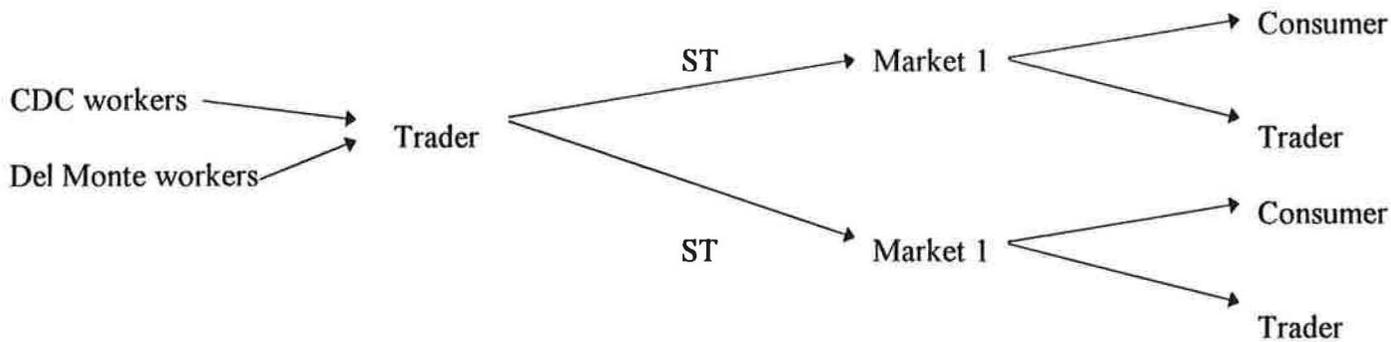
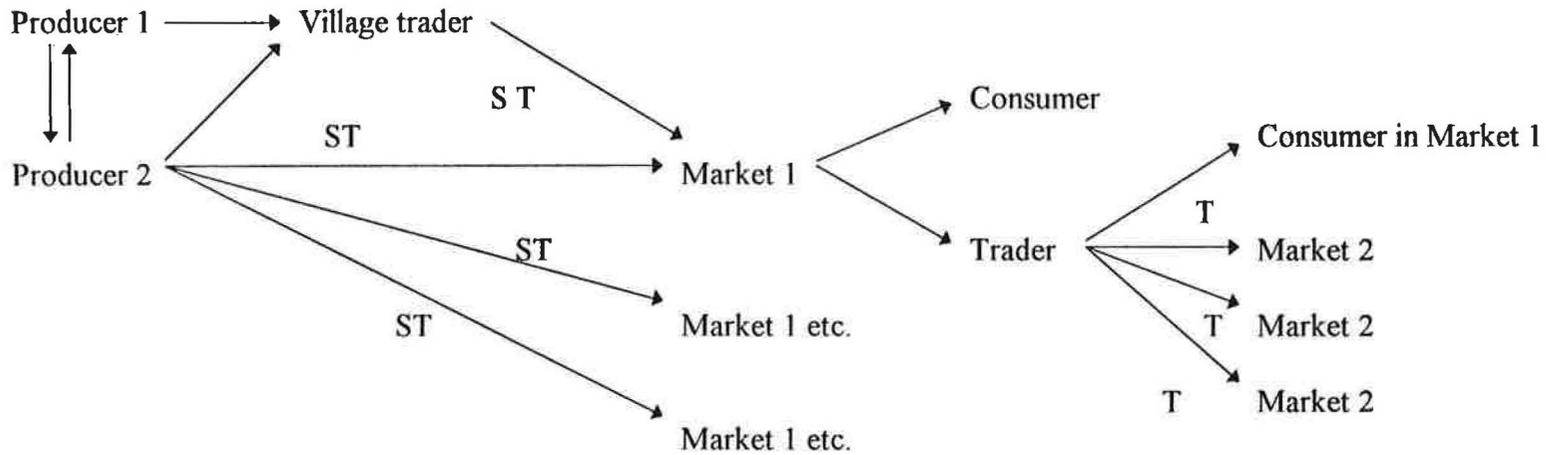
Market 2 may be outside South West Province, e.g. Douala

Processing refers to bundling and rebundling the product for onward sale.

PRUNUS AFRICANA



BANANA



Market 1 lies within the Mount Cameroon area.

Market 2 could be outside South West Province, e.g. Douala

Storage may be done by the final consumer before consuming as a fruit, rather than cooking to eat.

Appendix 4: Glossary of non timber tree products referred to in text

bitter cola - Seeds. Stimulant, medicinal, eaten to cure stomach problems and constipation.

bitter leaf - green leafy vegetable used to make local dish "Ndole"

bush mango - kernels are used to provide flavour and thickness, for example in soup. Bark is used medicinally.

bush pepe (fresh, dry) - Spice for stews and pepper, Achu soup

cane skewers - used for grilling steaks, and for snails.

chewing sticks - wood is chewed for cleaning the teeth.

country onion bark and seed - a very important spice used for its garlic like flavour. Used in Achu soup.

eru - a green leafy vegetable, mixed with water fufu (cassava) to make a local dish

kola nuts - seeds are eaten raw and have many medicinal uses. Stimulant. Kola is the commercial base ingredient for cola drinks.

mbongolo - spice for dish called Mbongo chobi.

njansanga - seeds are ground up and used as a condiment for soup thickening, especially for fish flavouring.

palm brooms - one of the many uses of the oil palm.

palm nut - from the palm tree, used to make palm oil.

Prunus africana - widely exploited for its bark from which an extract is derived which is effective in the treatment of prostate disorders.

Tetrapleura tetraptera - spice for Achu soup and pepper soup.

wrapping leaves - from various species, e.g. banana, prepared and cooked and used for wrapping food prior to cooking.

Appendix 5: Itinerary

Tuesday 21 November Travelled to Douala via Geneva. Met by a Mount Cameroon Project vehicle and taken to Limbe.

Wednesday 22 November Introductory meeting with Dr Glyn Davies.

Thursday 23 November Met with Ms Mary Ann Brocklesby, TCO Community Development, MCP and Ms Bianca Ambrose, APO. Review of relevant documentation at MCP library.

Friday 24 November Visited Buea market with assistant from the Ministry of Agriculture. Visited the library at the Pan African Institute for Development at Buea. Visited the market at Limbe.

Sunday 26 November Compilation of product inventory.

Monday 27 November Completed MCP library literature review. Travelled to Douala.

Tuesday 28 November Continued work on inventory.

Wednesday 29 November Ms Ann Gordon arrived from the UK. Meeting to discuss research programme. Travelled to Limbe with Dr Davies. Afternoon planning meeting with Dr Davies, Ms Brocklesby, Mr Tekwe Charles and Ms Gordon.

Thursday 30 November Meeting with Ms Brocklesby and Ms Ambrose. Meetings with other MCP staff to discuss work programme. Completed inventory. Went to Scipio Camp with MCP staff to attend village meeting on MCP/community collaborative activities.

Friday 1 December Attended MCP Community Development meeting for presentations of recent PRA work in Mokoko area. Went to Buea with Ms Gordon to visit the university, and identify possible research assistants.

Saturday 2 December Report writing.

Sunday 3 December Went to Buea to meet with Mr Tekwe Charles, MCP Community Development. Visited Muea market and spoke to NTTP traders. Went to the research station at Ekona to meet Dr Besong, agricultural economist who has conducted market research in South West Province. Visited Dr Enoch Tanjong (University Centre at Buea).

Monday 4 December Went to Mile 4 market with Ms Makete Rose from MCP. Worked on inventory.

Tuesday 5 December Went to Bokwango market with Ms Makete Rose and then Great Soppo market, Buea. Met Ms Gordon in Buea to interview prospective research assistant.

Wednesday 6 December Visited Ngeme market with research assistant from Buea. Went to Mutengene market, then to Buea market. (Ms Gordon returned to UK).

Thursday 7 December Went to Muea market. Meetings at Pan African Institute for Development, Buea, and University Centre at Buea.

Friday 8 December Went to Limbe market early to see farmers delivering produce. Went to Plantecam, Mutengene. Return visit to Scipio camp with MCP staff.

Saturday 9 December Went to Wututu village with Ms Ambrose. Went to Limbe market.

Sunday 10 December Meeting with Mr Graham Chaplin, ODA Forestry Adviser. Meeting with Ms Sarah Laird re. product inventory and medicinals.

Monday 11 December Went to Bonjongo market and then to Mile 4 market with research assistant. Stopped at Plantecam, Mutengene to see the Assistant General Manager. Also visited Pan African Institute for Development and the University Centre, Buea. Went to Limbe market.

Tuesday 12 December Went to Great Soppo market with research assistant. Went to Pan African Institute for Development and the University Centre, Buea. Went to Ekona market, then to Big Mouth market, Mutengene. Finalised inventory with Mr Nemoh George, MCP. Returned to Douala with Dr Davies.

Wednesday 13 December Returned to UK.