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Trees in the Rural Cash Economy
A Case Study from Zimbabwe's Communal Areas

by

Timothy Edwin Brigham B A (First Class)

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Master of Arts

Department of Geography

Carleton University

Ottawa, Ontario

May, 1994

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Trees in the Rural Cash Economy
A Case Study from Zimbabwe's Communal Areas

Submitted by
Timothy Edwin Brigham, B.A (First Class)
in partial fulfilment of the requirements for
the degree of Master of Arts

Thesis Supervisor

Chair, Department of Geography

Carleton University

May, 1994

ABSTRACT

Tree planting and management among inhabitants of three of Zimbabwe's Communal Areas (CAs) is a widespread activity and tree products play an important role in the rural cash economy. However, farmers' priorities in tree growing, including the provision of income, have not been integrated into CA forestry programmes. Forestry programmes have tended to emphasize the production of Eucalyptus which, while of some interest to rural households, is by no means the tree 'type' of choice for CA residents.

Forestry planning needs to shift away from externally perceived 'problems' and 'solutions' to locally determined priorities. Farmers' initiatives in planting and managing trees and the marketing of tree products provide fertile ground for interventions to improve rural livelihoods. Future planning should focus more attention on fruit trees which provide both food and income. However, the promotion of tree varieties must be associated with a clear understanding of the means by which production excess to subsistence needs is disposed of if rural people are to derive the maximum benefits from incorporating trees into their farming systems. Local solutions should also be emphasized in the management of woodland resources. A shift to local resource control coupled with investment in rural development and improved options for people to generate income from woodlands would likely have positive effects on the management of these resources.

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CHAPTER 1

INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

This thesis examines the role played by tree products in the cash economy of three of Zimbabwe's Communal Areas. Farmers are already engaging in the widespread planting and management of trees, generally with little or no external support and, in some cases, in the face of opposition from the rural extension service. It will be argued that while it is not their sole reason for growing trees, farmers in Zimbabwe, as in many other countries of the South, have a strong interest in tree products as a potential source of income, a motivation that has often been overlooked or misunderstood in the planning process for forestry programmes.

Many tree planting programmes focused on small-scale and/or resource-poor farmers in developing countries have emphasized the value of trees in producing a host of products to meet household subsistence needs while at the same time providing services such as improved soil fertility, reduced soil erosion and protection for crops. Therefore, project designs have often focused on supply-driven activities - increasing the quantities of trees and their associated products - rather than on the demand aspects of tree growing such as marketability and the distribution of products (Cook

and Grut, 1989) Studies from many areas of the South have indicated that farm households are well aware of the environmental benefits of trees both within and outside of the farm system However, given the constraints that many resource-poor farming households are operating under, it appears unlikely that the environmental aspects of tree planting alone provide sufficient motivation for farmers to take up the practice. Farmers will likely invest only in activities that promise a financial return greater than their investment in land, labour and other inputs, as their most pressing concern may be generating adequate cash income for household needs.

Even where project planners acknowledge the existence of a market for tree products, there is often an assumption that products surplus to household needs can readily be used to generate income Rather than first attempting to gain an understanding of the market realities faced by farm households, the emphasis has often been on increasing production, therefore, "planting trees is an end in itself" and success is measured by seedling adoption rates and acreage planted (Chambers and Leach, 1987:7).

French (1986:539) has stated, "to respond to reality requires that planners know what reality is" A key question, however, is whose reality is being responded to? An essential problem of Zimbabwe's forestry programme - and one hardly unique to the country - is the rationale behind promoting tree planting by small-scale farmers. There has been a tendency in many countries, including Zimbabwe, to attribute forest destruction to overharvesting of fuelwood In fact, much of the clearance of trees in

the Communal Areas appears to be due to a need to open up land for agriculture, which, under conditions of increasing scarcity of land resulting largely from inequitable distribution during the colonial era, "is a logical shift in land use" (World Bank, 1991:3). Not only have assessments of woodfuel shortages been grossly inaccurate, but rural households' responses in areas where supplies of fuel are limited were not taken into account in project planning (Bradley, 1990 12-15, Dewees, 1989 1161,1167). Because the 'crisis' in Zimbabwe's woodlands was, and arguably still is, misunderstood, a solution was proposed to an externally constructed 'crisis' that essentially did not exist. Similarly, Hosier (1989 1835) in an assessment of a Kenyan woodfuel programme, noted the effect that externally determined 'problems' had on project design

by paying insufficient attention to local markets and economic conditions, a system was suggested to meet a fuel problem when what was needed was a solution to a cash shortage

In Zimbabwe, the needs of rural people were perceived by outsiders to be fuelwood and construction poles. The approach to meeting those needs, the eucalyptus woodlot model, has essentially remained the technical package of choice in forestry extension since the 1930s and retains an important place in the most recent World Bank-funded programmes (Scoones and Matose, 1992:11). The persistence of this forestry extension model, despite extensive criticism, raises questions as to the continuing justification for such an approach. McGregor (1991 321-22) argues that gum woodlots are firmly tied to an ideology of modernisation which has effectively excluded local

peoples' livelihood concerns from becoming part of the planning process. Not surprisingly, given its lack of relevance to local people, Zimbabwe's Rural Afforestation Programme has had a minimal effect on that which it aimed to do. increase the woodfuel supply (*ibid*) Even if the programme were more in tune with peoples' needs, it appears unlikely that adequate resources would ever be available for a project approach that would have anything more than a minor impact on rural populations (Deweese, 1992:49, Godoy, 1992:713)

1.2 OBJECTIVES OF AND RATIONALE FOR THE STUDY

While the interest rural households have in trees as a potential source of revenue has been recorded in a number of studies, there has been little research undertaken on how markets for tree products in the small-scale sector are organised and function. The intention of this thesis is to add to the currently limited research undertaken in the area of small-scale farmer strategies in the marketing of tree products. Among the somewhat limited literature addressing the topic of the sale of tree products from small farms, there is a recognition of the need to add to the knowledge of the role played by trees in the cash economy as well as the marketing systems in place for these products (FAO, 1986, Arnold, 1987, Hoskins, 1987, Cook and Grut, 1989, Dewees, 1989, Pabuayon, 1990, Mehl, 1990).

The purpose of my study is to examine the role played by tree and woodland products

in the cash economy of three Communal Areas in Zimbabwe and explore why this role has not been effectively integrated into development planning surrounding trees. The research objectives are first, to describe in detail the structure of the market for tree products in Zimbabwe's Communal Areas, second, explore the specific strategies pursued by rural people in this area with the intention of gaining an understanding of farmer decision-making regarding production and marketing of tree products, and third, to examine the reasons why forestry programmes have ignored and/or undervalued the abilities of local people to manage tree resources effectively. The focus of this thesis is on tree products that have entered into the market economy. By no means is there any intention to diminish the vital role played by tree products in the subsistence economy, a fact well established by other studies.

I will argue that current approaches to promoting tree growing and woodland management by rural people are for the most part ineffective if their aim is to improve the conditions for rural people. The thesis will demonstrate that the economic aspects are a significant motivating factor in farmers' decisions regarding tree growing, however, these factors have generally been ignored or misunderstood by policy makers. Programmes have been ineffective not exclusively but largely due to two related reasons: first, there has been a failure to recognize the needs of rural people as perceived by themselves due to institutional mind-sets which influence externally-established 'problems' and 'solutions', and second, the failure to approach tree growing as part of a system sensitive to local conditions and able to evolve and respond to

what already exists on the ground. A fixation on the part of many planners working in forestry/agroforestry for more 'technical packages *for* farmers' ignores the host of activities surrounding trees already undertaken *by* farmers. The ability of local people to develop their own initiatives for confronting difficulties is often overlooked or ignored, what is required is an approach which supports and builds on what farmers are *already* doing rather than a continued emphasis on the technical package model.

As Dewees (1992: 51) argues

the strong bias in public sector and NGO forestry-related activities is principally toward tree *planting* and presupposes a lack of knowledge or a willingness amongst communal area households to undertake cultivation and management activities more suited to the environment to which they are exposed. At the very least the bias is founded in ignorance. At its worst, it is paternalistic.

While I am in agreement with Dewees' comments, I would also expand or clarify the use of 'environment' in this context. It is essential that the term environment be understood as more than just the physical world but also the socioeconomic one rural people operate within, therefore, not only ecological factors but also issues of labour, control, income and others will be part of the over-all debate in priorities for tree planting and management.

The reason for focussing on farmer perspectives of the role of tree products in the rural cash economy stems from the belief that these perspectives have frequently been undervalued and ignored within research and the planning process. My contention is that the current dominant development paradigm, which Robert Chambers (1988a) terms 'normal professionalism' and its concomitant 'first thinking', does not allow for

the effective integration of, in this case, rural peoples' perspectives and knowledge. In first thinking, based as it is on a structure, traits and values derived from a Northern 'core', the approach to development planning tends to involve what Redclift (1987) describes as 'managerialism' by outside experts. Resource-poor farmers or other rural people are 'integrated' into development planning "later, if at all, and often as residuals and problems after technical solutions have been sought and found to physical problems" (Chambers, 1988a: 7).

1.3 THE STUDY AREA

The research was conducted over three Communal Areas of Mashonaland East province, Mangwende, Uzumba and Mutoko, located east of Zimbabwe's capital of Harare (see Figure 1). The study area was selected for a number of reasons, among them its relative proximity to the major urban market of Harare, as well as its distribution across three natural farming regions. Zimbabwe is divided into five natural farming regions "the criteria of division [reflecting] the government's (both colonial and current) emphasis on agricultural production and potential land use systems" (Arnold, 1990:2). The major basis for the division of regions is rainfall as it is considered the most important limiting factor on agricultural production (*ibid*). Natural regions range from the best watered zone, region I, down to region V which is marked by frequent seasonal droughts. The distribution of land between the Communal Areas (as the former Native Reserves and subsequent Tribal Trust Lands

Figure 1.1: Location of Research Sites (X) in Mangwende, Uzumba and Mutoko Communal Areas Showing Natural Farming Regions II, III, and IV

have been known since Independence) and the Large Scale Commercial Farming Areas (formerly the white farming areas) reflects the inherited dualism of the colonial period. The indigenous African population was crowded onto reserves in the least productive lands, mainly in natural regions III, IV and V. To this day, fewer

than 5,000 farmers in the commercial sector still control 29% of the nation's land area, located mainly in the highest rainfall zones with the best soils. More than 1,000,000 families remain on 'overcrowded' communal lands on 42% of the nation's land area, located mainly in the poorest rainfall zones (Roth, 1990:1).

The choice and lay-out of the study area will be further discussed in the chapter on methodology.

1.4 ORGANISATION OF THE STUDY

The study is divided into seven chapters. This introductory chapter provides a statement of the problem, the objectives of, and rationale for the research as well as a brief introduction to the study area. Chapter two discusses the methodology employed in the research, assessing the value of both the questionnaire survey approach and that of various techniques derived from Rapid Rural Appraisal. Chapters three and four explore the historical and ideological factors shaping the development of forestry policy and programmes in Zimbabwe. The manner in which outsiders' agendas have shaped policy and programmes in this area, while local peoples' practices and priorities have been ignored, is examined. Chapter five considers the tree planting activities that rural people undertake largely outside of project initiatives, and assesses the influences

on these practices. The following two chapters provide a detailed description of rural peoples' involvement and strategies surrounding the marketing of fruit and the marketing of wood-based and forest products respectively. The final chapter covers conclusions arising from the study.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 INTRODUCTION

This study employed two different approaches to examine the role of trees in the rural cash economy: a questionnaire survey and a range of rapid rural appraisal techniques. The two methods selected were seen as complementary and to some extent interdependent in meeting the goal of the research. Combining the two methods provided more information than either could have on their own. The questionnaire survey allowed for the establishment of an economic baseline and profile on the amount, flow and pricing of tree products over an expanded study area. Employing RRA techniques provided valuable insights into how local people perceive their livelihood system and the role of trees within them, as well as allowing a greater depth and complexity of information to emerge than is likely through a questionnaire.

My choice of research methods had both pragmatic and philosophical origins. Following consultation with representatives of the Forestry Commission (a government parastatal organization), University of Zimbabwe researchers, and representatives of the Environmental Development Agency (ENDA), a local Non-Governmental Organization, I decided to expand the scope of my research to three Communal Areas.

(CAs) from the original relatively limited area. From the group discussion, it was decided that a comparative study would benefit those involved in research and policy development in Zimbabwe more than would a case study in one location. Following the decision to alter the scope of my research, it became clear that my original intention to rely on RRA methods alone was no longer practical given the expanded area for study. A questionnaire was felt to be the most realistic approach to ensure adequate coverage of households and to allow for a comparison of results¹. At the same time, a desire that the original research approach still form an important part of the fieldwork meant that I attempted to pursue RRA methods as much as was feasible.

This chapter discusses the development of the questionnaire and outlines the potential problems in employing this approach. The background to rapid rural appraisal (RRA) as a response to criticisms of more standard development research will be examined, followed by a description of the RRA methods used in the study. Potential drawbacks of the RRA approach will also be explored.

2.2 THE QUESTIONNAIRE SURVEY

The questionnaire was developed from a series of informal, exploratory interviews covering a wide range of topics related to tree product marketing. These interviews were essential in assessing the extent of marketing, types of goods sold, local

¹ The potential for sharing resources with Dr Bruce Campbell of the University of Zimbabwe further supported a decision to employ a questionnaire as a large-scale survey was necessary to his research.

perceptions of marketing problems, standard units of sale, and a range of other topics affecting the structure and content of the questionnaire. The use of such a survey can help avoid creating a questionnaire irrelevant and insensitive to rural people's circumstances (Rhoades, 1982, Beebe, 1987)

2.2.1 Design and Completion of the Survey

The questionnaire was designed to obtain information on household make-up, labour availability, land allocation, crop and animal husbandry and marketing, income from remittances and non-farm employment, household experience with extension and tree planting, and a wide range of information on tree product marketing¹. The strength of the questionnaire was perceived as its ability to obtain detailed information on quantifiable topics such as prices and the ownership of goods from a large number of households over a relatively short period.

Four enumerators were hired to conduct the household interviews. I employed a researcher with the Department of Natural Resources with experience in conducting questionnaire surveys and enumerator training to run a two day training session involving myself and the enumerators. While the need for accurate recording of information was stressed, emphasis was also placed on complete disclosure of our research aims to farm households as well as on a suitable manner for approaching

¹ The questionnaire can be found in Appendix 1

people that is both culturally acceptable and respectful of their knowledge and experience. Following the 'classroom' segment of the training, the questionnaire was slightly modified prior to conducting a training session in one of the study's CAs.

The field session served two purposes: first, enumerators became familiar with using the survey with farm households and were able to clarify any points of confusion and second, the session allowed for a pre-test of the questionnaire. By accompanying the enumerators, it was possible to identify problems with either the content or delivery of the questionnaire. Following the field session, the questionnaire was reduced in length; the approximately one hour required to complete the survey was found to be too long to maintain respondents' attention. Reducing the questionnaire length was, to a large extent, accomplished by eliminating detailed income questions which had shown themselves to be unacceptable by making some respondents uncomfortable. They were replaced by questions covering only approximate amounts of sales. One final training session with the modified questionnaire was conducted prior to beginning the survey.

To avoid sampling bias, a numbered grid was placed over a map of the three CAs and a random numbers table was used to select 20, 25 km² sites. I believed 20 sites would provide adequate coverage of the CAs involved and amounted to an area I could realistically cover with the assistance of enumerators. The 25 km² sites could be easily located on Zimbabwe's 1:50,000 map series and by covering a total of 500 km²,

approximately 10% of the three CA's total area of 4612 km² was sampled. Within each study site an attempt was made to sample one household per square kilometre, however, due to time constraints and in some sites, a shortage of occupied households, the average number of households sampled was approximately 22 per site.

Households to be sampled within each site were selected using an informal random method based on the apparent household density in any given area. Therefore, in heavily populated sites, an enumerator would select every third house along a particular path or track, in those cases where no-one was home or members of the household declined to be interviewed, the household immediately following was approached. In areas where household density was lower, every second house was approached. In only one remote, sparsely populated site was every household encountered surveyed. In the questionnaire portion of the field research, 443 households were surveyed¹. A complete breakdown of the questionnaires as to households surveyed in each CA and each of the three Natural Regions is provided in Table 2.1

¹ A discussion of the stratification of the sample in terms of issues such as household heads as well as along other lines follows later in the chapter.

Table 2.1. Questionnaire Breakdown by Communal Area and Natural Regions (NR).

Communal Areas	Area (km ²)	NR IIa		NR IIb		NR III		NR IV	
		sites	hhlds	sites	hhlds	sites	hhlds	sites	hhlds
Mangwende	2033	6	134	2	40	0		0	
Uzumba	1 89	0		0		3	68	1	23
Mutoko	1490	0		0		2	52	6	126
Totals	4612	6	134	2	40	5	120	7	149

2.2.2 Limitations of the Questionnaire

From my perspective⁴, the questionnaire suffers from three significant and, to some extent, related drawbacks. A questionnaire relying heavily on quantitative data is of limited value in addressing some of the less tangible aspects of household activities. For example, gaining an understanding of household decision-making surrounding tree product marketing was of importance to my research, yet to extrapolate farm household decision-making from quantitative results alone seemed both risky and arrogant. Conducting an informal survey as a first step in the research unquestionably strengthened the design of the questionnaire; however, the fact remains that "questionnaire surveys are designed by outsiders with outsiders' concerns and categories" shedding little light on those areas of rural people's lives (Chambers, 1992a:33).

⁴ I am stressing my own experiences with the formal survey approach. Chambers (1992a) provides other critiques of the conventional questionnaire survey.

Similarly, generally speaking, questionnaires are an inadequate tool for investigating issues which were not revealed in pre-survey exploratory research. Therefore, surveys are generally limited to "validating problems articulated by outsiders" (Beebe, 1987:52) as they do not contain the flexibility to identify and integrate new issues. Questionnaires may also prove inadequate for assessing complex social phenomena that cannot be quantified, nor can they effectively establish causality (Maguire, 1987:22; Chambers, 1992a:48). Problems arise when such limitations are ignored and a questionnaire is used to fulfil all the data gathering needs of a research programme.

Finally, I was concerned with allowing the 'voices' of people who are the focus of the research to be heard. The inflexibility of formal surveys does not allow for responses that do not fit the 'familiar frame' of the experience of the outsider (Chambers, 1992a:33), thus 'the researched' are often dehumanised and reduced to little more than a set of aggregate statistics. Traditional positivist research, using questionnaire surveys as the dominant or only research method, often approaches people as passive objects rather than active participants in shaping and being shaped by their physical and social surroundings (Maguire, 1987:18). This approach ignores the alternative knowledge systems and abilities of people in their context, a potentially vital input into the understanding of development problems. If we are to make development programmes responsive to people's needs, we must hear in their words what these needs are and how they might be met.

"Survey research has a definite role in investigating development problems ... [however] survey research should not be the first step" (Beebe, 1987:52). Nor, it might be added, is survey research necessarily the final step. In the hope of addressing some of the limitations of the questionnaire, the informal research approach employed in the pre-survey exploratory interviews was returned to and expanded upon following the completion of the questionnaire

2.3 RAPID RURAL APPRAISAL: ORIGINS AND CORE PRINCIPLES

RRA is an umbrella term for an overall research approach which contains a wide range of methods developed from, and alongside, agroecosystem analysis, social/applied anthropology, and farming systems research (Chambers, 1992a). RRA contains no single, standardised approach to research, instead, the choice of techniques depends on a host of factors including the topic to be explored; the reason for or intended outcome of research; and the resources available to the researcher(s) in any particular situation (Conway, 1990:8).

RRA emerged in the late 1970s through a concern among some development workers that conventional analytical approaches to development problems were failing in many cases to produce acceptable results (Chambers and Jiggins, 1986, Grandstaff *et al.*, 1987, Jamieson, 1987, McCracken *et al.*, 1988; Chambers, 1992a). Chambers (1992a 7-8) mentions three main reasons for the emergence of RRA. First, a

disillusionment with the anti-poverty biases held by some urban-based development professionals. These biases are spatial - only the most readily accessible are visited, seasonal - visits occur mainly in the dry season following the harvest, personal - the relatively well off and powerful are visited rather than the poor and powerless, project-oriented - where non-project areas are ignored, - and diplomatic, where the worst off are not seen or searched out to avoid offending local sensibilities (Chambers, 1987 34-5).

A second origin of RRA was the dissatisfaction with formal questionnaire surveys, not only in the manner previously discussed, but also in the length of time required to process them and the resulting delays before action could be taken (Chambers, 1992a 8). Costs of such surveys can be high, and given the economic constraints on development funding, the apparent cost-effectiveness of RRA has made it an attractive option (McCracken *et al* , 1988.5-6). Although farming systems research, itself a response to discontent with the *status quo* in rural development research, has had notable successes in promoting an understanding and appreciation of the complexity and rationality of small farming systems, it has often fallen into the same trap as formal surveys in its tendency to become caught up in unnecessarily extensive data collection (Chambers and Jiggins, 1986.10-11, Chambers, 1992a 7)

The third main origin of RRA stems from the growing awareness among some development workers

of the painfully obvious fact that rural people were themselves knowledgeable on many subjects which touched their lives (Chambers, 1992a 8).

Not only was an expanded reliance on farmers' knowledge likely to result in increased validity and relevance of information, but in keeping with earlier concerns, such an approach could prove more cost-effective as well.

The following set of core principles comprises the philosophical approach underlying RRA techniques¹. Although, as a continually evolving research methodology, not all practitioners are in agreement as to the stress placed on particular principles or features of RRA, there is a considerable overlap of opinion.

1) **Triangulation** involves cross-checking information, whether from primary or secondary research, against other sources to increase the degree of reliability and to 'fill out the picture'. The combination of methods chosen is based on applicability to the subject matter and on their degree of mutual independence. Triangulation can also refer to an interdisciplinary approach where team members from different backgrounds ensure important issues are not overlooked as well as collaborating to learn from each other. As the knowledge of insiders is considered a valuable resource within the RRA approach, and given that their world view is likely to differ in fundamental ways from that of outsiders, the notion of triangulation may go beyond simply checking the accuracy of 'facts', to using it as a method for exploring and understanding different world views or paradigms (Abel *et al.*, 1989:8).

¹ The list of core RRA principles is drawn from Grandstaff *et al.*, 1987, McCracken *et al.*, 1988, and Chambers, 1992a unless otherwise indicated

ii) **A reversal of learning** implies that rural peoples' knowledge and concerns are the starting point for research. This principle is a response to the dominant development research paradigm termed 'normal professionalism' by Chambers (1988a:4). He describes it as a form of 'first thinking' based on a structure, traits and values derived from an elite, generally Northern core where the concerns and values of rural people

... come later, if at all, and often as residuals and problems after technical solutions have been sought and found to physical problems (*ibid.*:7).

In contrast, RRA approaches attempt to begin, not with the knowledge, categories and values of outsiders, but with those of local people. "It answers the question 'whose reality counts?' initially with the reply 'theirs'" (Chambers, 1992a:33).

iii) Related to the previous issue is the principal of **offsetting biases**, often held by outsiders, by searching out the poorer and more powerless people, those who live in remote areas, and by bearing in mind that they are the teachers and experts whose concerns you have come to hear.

iv) **Flexibility and innovation** are key aspects of RRA; methods are mixed and matched as the research progresses and continually generated information functions in an iterative manner to modify the agenda as necessary. This process of 'progressive learning' is considered one of the key traits of RRA, and distinguishes it from standard research which relies heavily on fixed questionnaires. "[RRA] assumes that it is impossible to identify all relevant questions in advance" (Beebe, 1987:51).

v) **Optimising ignorance** refers to trying to avoid becoming bogged down in unnecessary detail or information irrelevant to the objectives of the research.

Chambers (1987:38) describes optimal ignorance as, "the importance of knowing what it is not worth knowing"

vi) **Searching for diversity/variability** means deliberately looking for and investigating that which is different among farming practices, marketing choices, holding size, and a host of other factors. Generally speaking, attempting to discover who is the 'average' farmer can lead to ignoring important variations within groups. Exploring variation can help in gaining an understanding of why certain practices are followed (Beebe, 1987:53-54). A related issue is an acknowledgement that, as the systems already in place demonstrate diversity and room for choice, RRA should ideally function to support a similar approach in the research or recommendations that might originate through it.

The menu, in short, [should not be] fixed or table d'hôte, but à la carte and the menu itself ... a response to farmers' needs articulated by them (Chambers, 1989:183)

Although RRA was developed as a way of gaining a clearer "... understanding of the reality of the livelihoods of rural people" (Conway, 1990:9), Jamieson (1987:102) points out that "RRA will not necessarily do ... any of [this]... It merely possesses the potential for doing so." While RRA, due to the nature of its methods, generally supports the principles discussed above, there is nothing within the RRA approach that guarantees that women or the poor will be included, or that local peoples' knowledge will be used other than to support the agenda of outsiders. Addressing these concerns depends on a far more intangible and generally less explicitly discussed aspect of

research, the personal attitude, behaviour and self-critical awareness of the researcher (Chambers, 1992a 14)

2.3.1 RRA Methods: Introduction

RRA is best described as a research strategy that contains a range of methods diverse in nature but essentially rooted in a common philosophy. In my research only a part of the total 'menu' of RRA methods was employed⁶. The methods I employed were chosen because of their applicability to the research problem. Various approaches to interviewing were the core of my field research and allowed me to explore a wide range of issues related to the role of trees in the rural cash economy. Ranking exercises were used to gain insights into household decision-making and explore where different groups within society placed value in their livelihood system. The use of seasonal calendars allowed me to develop a clearer picture of how income generated by tree products fits in with other strategies and whether or not it evens out seasonal cash flows. Finally, participating in certain activities helped clarify some issues and bring others to the forefront that may otherwise have remained hidden during the course of the interviews.

It should be noted that the use of secondary sources of information, while as essential to RRA as it is to most research approaches, will not be discussed here at length.

⁶ For a more complete listing see McCracken *et al*, 1988, and Chambers, 1992a

Available documents such as files, reports, maps, articles and books were relied upon, but their use within RRA is not substantially different than under more traditional approaches. However, RRA can help to reconcile discrepancies between written records and what seems to be occurring 'on the ground' (Rhoades, 1982:7).

2.3.2 RRA Methods: Interviewing

RRA relies heavily on interviewing methods including semi-structured and informal individual and group interviews, and the use of key informants in order to gain information on a wide range of topics. Semi-structured or informal interviews utilize only a handful of pre-determined core questions; the remainder arise over the course of the interview generally in response to answers from those being interviewed, from observations of surroundings, or through other exercises (Grandstaff and Grandstaff, 1987:139-40, McCracken *et al.*, 1988:20). Although the number of questions in the mental or written checklist will vary significantly depending on the situation and stage of the research, it is critical that the questions be open-ended and the researcher prepared to pursue unexpected issues as they arise (Chambers, 1992a:15). Because of the informality and the emphasis on the need for flexibility, semi-structured interviewing has been described as

more in the vein of art than a set of fixed procedures. And like art, it involves creativity and technique which, if properly applied, make the difference between success and failure (Rhoades, 1982:7).

One essential aspect of informal surveys is developing rapport with local people. Good rapport is key to the success of research that relies heavily on local knowledge, values and perceptions. Once again, researchers' attitudes and behaviour in their interaction with local people are key. Demonstrating humility, patience, interest and respect for what local people have to share with outsiders will go far in first alleviating natural suspicions and then allowing for a free flow and interaction of ideas (Rhoades, 1982: 15, Fui, 1990, Chambers, 1992a: 19). As Grandstaff and Grandstaff put it, when beginning an interview "it works best to say 'we are here to learn' and mean it" (1987: 133).

Prior to beginning my research, I was concerned that my obvious status as an outsider would hurt my chances of developing any rapport with people, particularly as I was not going to be spending extensive periods of time in any one location. However, I discovered that being an outsider, and an obvious one at that, actually helped at times during the research process. On a number of occasions, I was told by local people that they were not concerned I was associated with the Government because no white working for the Government now would spend time in rural areas talking with poor people; therefore they saw no risk in speaking with me. These remarks, often a cause of amusement for all, helped in establishing rapport as did my obvious interest in their expertise in various areas. I am not trying to suggest that establishing rapport is a simple exercise, somehow guaranteed if a set of rules is followed. On the contrary, it may not occur even with the best of intentions, but a significant part of the process is

in the hands of the researcher

In the course of my fieldwork, I conducted 50 semi-structured interviews, the majority of them with individuals or individual households and a small number with groups. Farm households⁷ accounted for 28 of the interviews, artisans for 8, fruit vendors for 6, middlemen involved in fruit sales for 5, the remainder were transporters, Government employees or individuals otherwise involved in some aspect of tree product marketing. When broken down according to gender, either as individuals or in groups, men accounted for 56 percent of the interviews, women for 30 percent and groups with members of both sexes present for 14 percent. In the farm household portion of the interviews, women made up 43 percent of the total, men 36 percent and groups containing both, 21 percent. The main reason for the discrepancy in gender representation between the over-all interview percentages and farm household percentages, is the lack of women's participation in the wood-based craft activities being undertaken in the study areas - all eight artisans identified for interviewing were men - as well as the apparent under-representation of women in certain areas of government. All those encountered who were buying and re-selling fruit ('middlemen') were exclusively men, while vendors and stallholders were split evenly between men and women. To protect the confidentiality of respondents, all personal names used in the text are pseudonyms.

⁷ A discussion of the concept of the household as a useful analytical category will follow later in the chapter.

The group interviews conducted for this research were mainly of a casual nature (McCracken *et al* , 1988 23) in that they were conducted with informal groups encountered while walking through fields, markets or other places. Such interviews contrast with formal group interviews where the discussion is prearranged and the group is generally composed of people with some sort of formal ties to each other. Although some group interviews may be considered casual, this does not preclude deliberately searching out informal groups for interviewing. When I wished to speak to women fruit vendors in Harare, I wandered the streets and parking areas surrounding Mbare market, the main market in Harare, until I located a group of vendors willing to speak to me. Beyond providing useful information on a range of topics and acting as a type of triangulation or check on each others' information, groups are also useful in helping to identify individuals who are accessible, highly knowledgeable on topics such as crops or marketing and willing to act as 'key informants' (Rhoades, 1982 14).

Although I relied extensively on key informants for interviews on a range of topics, my methods for identifying them differed from the group interview approach. Some key informants, such as farmers heavily involved in fruit sales, those acting as rural-based middle-men, or older people believed to have knowledge of the changing situation in the CAs, were mainly identified through the questionnaire. I also either directly approached vendors at market stalls to enquire who had produced a particular product, or if the stallholder knew of anyone who actively produced and/or sold a

particular product. This approach was especially helpful in locating artisans producing wood crafts for local sale.

Through the use of trend analysis, which involves people's accounts of how things important to them, such as land use or cropping patterns have changed over time and why, key informants can provide historical information which may otherwise prove inaccessible to an outsider. Older members of the community often have extensive knowledge of historical trends, both social and environmental (Abel *et al.*, 1989). While informants may not remember the exact date of events, they are likely to be able to relate occurrences to a significant event in their own lives, allowing for a chronology to be developed (Grandstaff and Grandstaff, 1987:140). This approach was useful in gaining information on how the marketing of fruit and other products has changed over time and why, as well as how certain practices and species have spread from place to place.

One other method useful in identifying key informants as well as building up a picture of a specific area of interest, is through a 'chain of interviews' approach. This approach may simply refer to the process discussed previously where one person or a group suggests a key informant for interviewing, or it may be a more deliberate, organised process where a sequence of informants is identified in order to gain expert knowledge on different stages of an activity (Chambers, 1992a:15). An example from my research is tracing the fruit marketing sequence from producers through local

middlemen and transporters to market stallholders and on to vendors. From their place in the 'chain' all are likely to have different perspectives on the issues that make up the system. Rather than seeing such a range of opinions as a problem to be overcome, attempting to reconcile the different views can be a useful exercise in building up a picture of a system which includes information flows and the source and location of power between sectors.

Although interviewing methods, especially semi-structured interviewing, have been suggested as the 'heart' of RRA (Rhoades, 1982, Grandstaff and Grandstaff, 1987, Chambers, 1987, McCracken *et al* , 1988), other methods frequently play a role in either providing a different perspective or making data collection more clear and succinct than if it were only gained through interviews (Conway, 1990:9).

Furthermore, many of the methods that make up the repertoire of RRA are not mutually exclusive but instead often feed into one another. When used appropriately, this interrelationship of methods can help produce

... a rich description of life in a farming community, [and] an understanding of how farmers, merchants, extension workers and others perceive their conditions and make decisions (Rhoades, 1982:5).

2.3.3 RRA Methods: Ranking Exercises

Preference ranking is an analytical game applicable to many fields, and is effective in helping investigate why people make the choices they do (Scoones and McCracken,

1989 88) The ranking of local peoples' preferences and practices can take a number of forms, however, I concentrated on two methods in my research. pairwise comparisons (PC) and direct matrix ranking (DMR). In both methods, a family of comparable 'things' is chosen, which in my case tended to consist of trees or, on occasion, marketing outlets or other relevant topics. Generally the choices to be discussed are made in consultation with the person being interviewed through questions such as 'what kinds of trees do people plant (or like to grow or wish they could grow etc) in this area?' To the list may also be added varieties of interest to the researcher^{*} In PC, the names of each item to be compared are written on a piece of paper and people are asked to choose which one they prefer between two choices. The reasons for each choice, such as whether the less preferred item is superior in any way, and anything else they can add about that particular comparison is asked for each pair before continuing the process with every possible pairwise combination (Conway, 1988:10) Although it is a simple procedure, PC can help uncover "a rich pattern of decision making . not obvious by direct observation or casual conversation" (*ibid.*:12).

DMR takes the ranking process a step further, and occasionally relies on PC for part of the procedure Following the establishment of a list of items, criteria for assessing these items are elicited in a number of ways through straight discussion of the item, by deriving criteria from the reasons behind the choices in PC, or more directly by asking

^{*} Experience has shown that between two and seven items tend to be realistic amounts for both ranking exercises (Chambers, 1988b:14, Chambers, 1992c)

what is 'good' and what is 'bad' about each item (Chambers, 1992b 8). Given that we are trying to gain an understanding of the complexities of decision making by local people (Conway, 1990 13), it is important that the ranking is based on locally derived criteria (National Environment Secretariat *et al*., 1990 61). If researchers wish to introduce their own criteria into the matrix, it must be clearly delineated from those chosen by the respondents to ensure their views are clearly known (Chambers, 1988b.15). Once the criteria have been established, all negative criteria such as 'difficult to grow' should be converted to positive ones as in 'easy to grow' to allow for ease of comparison. A matrix can now be constructed with the items across the top and the criteria down the side and respondents can be asked which is best by each criterion generally by using a questioning sequence as in 'which is easiest to grow', 'which is next easiest?' and so on. To conclude, it is useful to ask respondents 'if you could only have one of these, which would it be?', 'and if only one of the remainder' until all the items have been ranked against each other. This final 'forced choice' can help to clear up misunderstandings and reduce the chances of missing out important information by acting as a final check (Chambers, 1988b 14-15)

Where I employed these methods, I began with PC but soon moved on to using DMR. Due to my lack of experience, PC struck me as the simplest place to start, however, following some success with PC and with a growing awareness that people quickly related to the aim of the exercise, I began to be interested in the increased analytical possibilities that appeared with DMR. DMR adds a further 'layer' of information by

not only establishing what is preferred, but also by making explicit the rationale behind the choices, allowing for comparison of a number of factors 'across the board' and demonstrating how criteria interact in the decision-making process. DMR not only ranks the item but also helps rank the decision criteria themselves by exploring where respondents place their emphasis in final choices (Scoones and McCracken, 1989:89).

Ranking methods in general, and DMR in particular, has the potential to demonstrate quickly the technical knowledge of respondents, how people's values and use of items vary according to a variety of factors (Chambers, 1988b:16) and, in my experience with artisans especially, help in developing rapport by demonstrating a clear interest in the abilities and priorities of local people. Ranking is not an end in itself but is "an optional stage in a process of learning from and with people" (*ibid.*:15). By following DMR with an 'interview of the matrix', with the matrix as a starting point for further discussion, valuable information can be obtained which may not have been accessible using interviewing or ranking on their own (Chambers, 1992a:36).

2.3.4 RRA Methods: Calendars and Participant Observation

Two further RRA methods were used to a limited extent in the study: seasonal calendars and direct or participant observation. Seasonal calendars are valuable in identifying changes that occur throughout the year in a variety of household livelihood

activities (Conway, 1990:11). Furthermore, by including or overlaying different types of information, the interaction between the agricultural cycle and other biophysical and socioeconomic factors can be observed (Limpinuntana, 1987:157). The time scale can begin at any point during the year, though the beginning of the planting season may be more in keeping with rural peoples' conceptualisation of the agricultural cycle (McCracken *et al.*, 1988:35; Cromwell, 1990:18, National Environment Secretariat *et al.*, 1990:36). Calendars are created using another RRA method which employs ranking by local people, although the ranking is not of preferences as with PC or DMR, but of orders of magnitude. The approach to obtaining comparisons does, however, share some of the techniques used in DMR. Questioning sequences such as 'which month requires the most labour?', 'which is next busiest?' and then 'which is the least busy?' are used until the months have been ranked relative to each other (McCracken *et al.*, 1988:27,35; Conway, 1990:11). Relative estimates are often the only way to obtain information on some topics without extended residence in the study area. Furthermore, the seasonality of activities may be more critical than numerical values and in some cases, such as income, comparisons between months may be a much more acceptable approach than discussing absolute figures (National Environment Secretariat *et al.*, 1990:36; Chambers, 1992:36).

Although agriculture has typically been the main focus of seasonal calendars, I explored relationships between farming and craft work through the use of an 'expanded calendar' which included both agricultural and non-agricultural activities. As most of

the artisans I interviewed also grew crops of some kind, it was important to determine how agriculture and craft activities were connected in terms of meeting both community demands and the needs of artisan households. These calendars also assist in clarifying rural labour patterns and priorities and the conflicts which arise in this area (Cromwell, 1990:19). A variety of activity sequences, labour scheduling and other issues can be further explored by 'interviewing the calendar' in the same manner as was done with matrix rankings (Limpinuntana, 1987:157).

While interviews and other interactive approaches with rural people provide valuable insights into a range of issues, researcher participation in local activities can help reveal information that might otherwise be invisible or overlooked. Participating in activities can help in developing rapport as well as providing a means for assessing data obtained through other methods (Abel *et al.*, 1989:47). Although I arrived too late in Zimbabwe to participate in the main fruit marketing season, I was able to accompany artisans on two different occasions, once to assist with the collection of wood and once to spend time at a woodworker's outdoor 'workshop' where I could observe activities previously only talked about. The collection of wood in particular provided important insights into how specific trees are identified in advance to cutting, the logistical difficulties of obtaining wood and the amount of waste incurred in harvesting. Although some of the topics had been addressed in earlier conversations, actually being involved in the process clarified some points and brought others to the forefront for further exploration.

2.3.5 Limitations of RRA

The limitations of RRA are both specific to particular methods and general to the methodology as a whole. Not all of the drawbacks mentioned in the literature such as the danger of certain RRA methods increasing people's expectations (Scoones and McCracken, 1989:89) were experienced in my work to any significant extent. Rural people clearly have 'wish lists' for projects, but disclosing the aims of my research appeared to head off misunderstandings or false expectations. One problem mentioned in the literature I did experience is the lack of opportunities for learning these methods from experienced practitioners (*ibid.*; Joseph, 1991:7; Chambers, 1992a:40,45,50). My experience of RRA techniques is almost wholly self-taught, although I was fortunate to have been introduced to the potential of 'alternative' research methods at an earlier date. Otherwise, it was strictly a 'learning through doing' approach, using examples from the literature. Some of the methods and aims of RRA which appear simple and straightforward in the literature do not necessarily prove so in practice. For instance, the principle of optimal ignorance or 'knowing what is not worth knowing' requires not only as Chambers (1987:38) puts it "courage to implement", but also experience to know what data are extraneous. Developing such experience will take time as well as guidance. Writers on RRA methods have tended to stress the importance of improvisation and the dangers of formalism that could arise with the spread of manuals (Gibbs, 1987:202; Chambers, 1992a:40-41) but there is also a need for informed exposure to RRA principles and methods. There must be a balance in

researchers' exposure to these methods between unstructured and structured in order to support the numbers and capabilities of researchers to continue the spread and evolution of RRA

My own use of RRA methods could be criticised because I conducted my research without being part of a larger interdisciplinary team, a feature often deemed to be of importance to the success of RRAs (Gibbs, 1987:194, McCracken *et al.*, 1988; Scoones and McCracken, 1989). While I acknowledge that it would have been useful to have the inputs of researchers from other disciplines, such an approach was not possible during my time in the field

A further potential difficulty is that developing rapport cannot be guaranteed merely by following a set of instructions, much depends on the personal attitudes of those conducting the research

Reversals of behaviour and attitude, to respect farmers as people and to desire to learn from them, are essential ... to the practice of RRA (IDS Workshop, 1989:104).

However, behaviours and attitudes cannot be mandated. Much of the training of outside 'experts' in agriculture and other fields views modern specialised knowledge gained in and supported by institutions as superior to that of indigenous knowledge; such a view acts as a barrier to effective learning from and with local people (Chambers and Jiggins, 1986:4; Gibbs, 1987:201, Collinson, 1988:13; IDS Workshop, 1989:104). The question of whether the use of RRA methods can lead to alterations

in the behaviour and attitude of outsiders remains to be seen (Chambers, 1992a 44)

Without a core of committed professionals within institutions willing to provide alternatives to the *status quo*, the spread of RRA and other alternative research approaches may continue to be slow, and their use remain the exception, never the rule.

A further potential flaw of RRA is inappropriate application of the 'rapid' aspect of the methodology. The idea of rapid appraisal evolved partly in response to a need for information on development issues that was much more timely than traditional surveys and their often long delayed products (Chambers, 1987 36, Joseph, 1991 4) However, rapid does not mean rushed, nor does it mean simply justifying the research biases that RRA seeks to redress if RRA merely results in less time being spent in the field "the poorest are, once again, neither seen, listened to, nor learnt from" (Chambers, 1992a.40) and a major part of the rationale for RRA is lost Chambers (*ibid*) argues that 'rapid' is now a liability and might be more appropriately replaced with 'relaxed' in keeping with the intended focus on information sharing by and with local people

Despite claims to the contrary, RRA, in most cases, remains an extractive mode of research in that it aims more to improve the way outsiders learn rather than to empower local people to plan and take action (Chambers, 1992a 9-12) This is not to suggest that RRA does not contain some aspects of participation, in fact the level of participation within various RRAs can vary significantly (McCracken *et al* , 1988 65-

71) Many RRA methods remain key to participatory rural appraisal (PRA), an outgrowth of RRA. Although RRA and PRA share similar principles, in RRA outsiders do the investigation and analysis while in PRA outsiders facilitate while local people investigate, analyze and learn (Chambers, 1992a 13-14).

A significant danger for RRA, PRA and other alternative research methodologies, is the risk of faddism or appropriation. When 'new' approaches attract significant attention and at times unrealistic expectations, a danger is that their use will become 'required' either formally or informally, whether or not they are appropriate for a specific situation (Gibbs, 1987:202). Furthermore, when practised by a researcher lacking the capability, for whatever reason, to perform them well, methods can be discredited and disillusionment can set in (Chambers, 1992a:40,45). A related issue is the risk that new and/or fashionable concepts and practices will be appropriated to describe research that does not accurately reflect the methodology's philosophy. Research could be labelled as RRA when in fact no real listening to local people takes place, with outsiders having already decided what 'target groups' really need (Joseph, 1991:7). Researchers can support the quality spread of RRA by avoiding a fixation on any one approach and not losing sight of the fact that RRA, like all methods, is a tool, a means to an end, not an end in itself (Beebe, 1987:63; Gibbs, 1987:202).

Much of the criticism that has been levelled at RRA and other alternative approaches to research has stemmed from questions of confidence in the information derived

through these methods (Maguire, 1987, Jamieson, 1987, Gibbs, 1987, Chambers, 1992a) An extensive review of comparisons between alternative and more traditional, often positivist-informed research methods will not be entered into here However, Chambers (1992a 28-29,32), in a comparison of RRA and formal questionnaire research, found in the cases suitable for study that RRA outcomes "were variously more valid, less costly, more timely, and more useful" both in terms of the qualitative and quantitative data produced Rocheleau *et al.* (1989 21) claimed that their use of informal methods provided more detail and clarity of information than the far more time-consuming formal survey they conducted

A concern with the reliability of results from any research method is reasonable and proper However, it is important not to lose sight of the value of alternative methods by focusing exclusively on potential inabilities *vis-à-vis* other research methods Alternative methods such as RRA and PRA are valuable not because they can beat traditional methods at their 'own game', but because at minimum they allow for the voices of the researched to come through and in some cases have the potential "to enhance local people's understanding and ability to control their own reality" (Maguire, 1987:22) In the end, all research methods depend on their practitioners for quality of use. Are RRA methods any different from formal surveys in this regard? A definitive answer is difficult to provide. But what is clear is that

as research biases, mistakes and omissions are admitted and not lost in a mass of questionnaire codes, the decision maker can see how the information was generated [and] how important factors were revealed (Inglis, 1990:107 in Chambers, 1992a 29)

Through the use of RRA methods I was able to gain insights into the livelihood practices of local people which would have been impossible to obtain through the formal survey alone. Is the data I gathered by employing RRA suitable for universally valid generalisations? Probably no more so than could be argued to be the case for more quantitative methods. However, I feel the data collected is a valid reflection of those aspects of peoples' lives that they chose to share with me. Although these methods have the potential to improve upon standard, formal approaches, there is no guarantee that this will necessarily be the result. However, they can assist us

...to perceive how local people, ourselves, and all other parties to the development process are both subjects and objects, each with our own selective cognitive models, each acting in and being acted upon by a complex, imperfectly understood, and subjectively perceived world (Jamieson, 1987:102).

2.4 PRACTICAL PROBLEMS: THE HOUSEHOLD AS AN ANALYTICAL UNIT AND QUESTIONS OF WEALTH

In the course of my research and in the analysis stage following, what could be termed 'practical problems' arose which caused some complications in exploring certain issues surrounding the research. Two main problem areas were the use of 'the household' as a unit of analysis especially as it was used in the questionnaire survey, and attempts to stratify respondents along wealth lines in order to allow for some differentiation of results.

2.4.1 The Household as an Analytical Category

The problem of the household as an analytical category was mainly a problem identified in hindsight, that is, it was an issue that arose during the period of analysis. The difficulty stems from how 'the household' was conceptualized, or in a sense not conceptualized, within the questionnaire. A household was defined for the purpose of the questionnaire as comprising those who normally live and take their meals in the household⁴. The intention was not to suggest that the household is an undifferentiated unit unaffected by gender relations and divisions of power (Wilson, 1991: 31-2, Fortmann and Nabane, 1992: 1). Instead, the household was seen as a mutually understood unit between researcher and respondent around which information could be gathered. The flaw of the concept of the household within the questionnaire was therefore for the most part a flaw of omission, in other words it was primarily a problem "of leaving important questions unasked and hence unanswered" (Kabeer and Joekes, 1991: 2).

The important questions left unasked meant that within the confines of the questionnaire, only limited analysis along gender lines was possible. The gender of the head of the household was asked, as were questions on the gender division of labour in terms of who within the household was responsible for harvesting and marketing fruit. This is not to suggest that no other analysis along the lines of gender

⁴ This definition was taken from Zinyama (1986: 166).

is attempted in the thesis. In fact, gender differences surrounding a number of issues are explored as will become apparent, but these issues are explored through the analysis of interviews and other RRA techniques rather than through the questionnaire survey.

Finally, some clarification of definitions of the household used in the research is needed. Three main types of household are discussed in the research¹⁰. Male-headed households are those households where the man is resident at the home site the majority of the time. *De jure* female-headed households are households headed by widows and divorcees. *De facto* female-headed households are those households generally considered by the members to be male-headed in that the marriage around which the household is based has not been dissolved through death or divorce. However, the male household 'head' is generally only infrequently present, living and working most of the time in urban areas or elsewhere leaving the *de facto* female head to make most of the management decisions regarding agriculture and the day-to-day functioning of the household.

2.4.2 Questions of Wealth

One intention of my research was to find a successful method to differentiate the respondents to the survey according to some measure of their economic status. My

¹⁰ I recognize that compared to other proposed gender classifications (Haddad, 1991: 15), my typologies are quite simplistic.

original approach was to obtain detailed information on the annual earnings of households from a potentially wide range of sources, however, as previously mentioned, this approach was abandoned early in the research process. Two main problems were encountered during the pre-testing of the income portion of the questionnaire. First, there was a noticeable reluctance among some respondents to answer detailed questions regarding household earnings. Second, and perhaps a direct result of the first, eliciting and recording the information took an inordinately long period of time which contributed to pushing the time for completion of the whole questionnaire beyond what was considered reasonable¹¹

The difficulty in assigning absolute values to complex income sources such as remittances¹², further rendered impractical a request to household members for a detailed accounting of total income. Instead, sources of income were noted to assist in assigning relative household socioeconomic status. One exception was for crops where I asked what quantities were sold with the intention of later assigning cash equivalents. However, other studies have revealed significant problems in obtaining detailed accounts of household incomes due to the reluctance in reporting discussed earlier and the difficulty some respondents may have in recalling details of the sale of

¹¹ 'Reasonable' is, of course, a somewhat subjective measure. However, in my conversations with other experienced researchers in Zimbabwe, the consensus appeared to be that questionnaires should take no longer than an hour to complete and preferably less. Longer questionnaires are burdensome for respondents as well as more error prone over the course of the questioning period.

¹² Remittances are frequently provided as goods such as fertilizer, food and clothing, greatly complicating attempts to assign a cash value to this important source of household 'income'.

a range of crops¹³, it is therefore reasonable to assume that the amounts provided are conservative estimates due to under-reporting (Bell and Hotchkiss, 1991:219).

Examining the available studies on household income in Zimbabwe's CAs provides an illustration of the difficulties that can be encountered in trying to pursue 'absolute' figures in this area.

The most up to date data on income in the study area is from a questionnaire survey by Dore (pers. comm.) in Uzumba CA in 1991. This survey covered 459 randomly selected households and contained detailed questions on income sources. Households were divided into five income categories: very low, under Z\$500; low, between Z\$500 and Z\$1000; medium, Z\$1001 to Z\$1500; high, Z\$1501 to Z\$2500; and very high income, over Z\$2500. The average income in the sample is Z\$1375, a significantly higher figure than is found elsewhere. Shumba (1984) and CIMMYT (1982) (both quoted in Campbell *et al.*, 1991:39) provide a figure for Mangwende CA of Z\$717 per household per year, based on 1981/82 data which Campbell *et al.* have converted to 1989/90 dollars. In another study (Mudimu *et al.*, 1990, quoted and converted to 1989/90 dollars by Campbell *et al.*, 1991:39) the combined average annual incomes for Mutoko and Mudzi, the CA to the east of Mutoko, are given as Z\$146 for the 1988/89 season. For Mutoko CA alone, Govaerts (1985, quoted in Carter, 1992:31) estimates average yearly household income at Z\$442. Jackson and Collier (1988) in an ambitious survey of income and food security among 600 households spread across 11

¹³ Although it is not widely found, some respondents keep very detailed written records of their crop transactions. Others are able to recount a surprising amount of detail from memory.

CAs located in all the agroecological zones found in Zimbabwe, reported a mean household income of around Z\$700 for the 1984/85 season

Examining the income values provided for Zimbabwe's CAs leads to questions over the discrepancies existing between studies. One possibility is that not all of the studies necessarily include the same sources of income. For instance, Govaerts (1985) does not include in income the value of goods received in kind as remittances as is done in the Jackson and Collier (1988:14) study. Given that remittances, on average, account for approximately one-fifth of total income and that cash makes up perhaps half of that figure (*ibid.*), omission or inclusion of the value of goods such as clothing, food and fertiliser would significantly alter results. Furthermore, incomes vary between CAs for a number of reasons. CAs such as Mangwende in high potential agro-ecological zones are likely to have higher over-all incomes than CAs in zones IV or V. Proximity to markets and sources of employment may also be factors. Although Govaerts' (1985) income averages for Mutoko are three times those provided by Mudimu *et al* (1990) for Mutoko and Mudzi CAs combined, the difference may be explainable, Mutoko is partly located in NR III, while Mudzi is completely within NR IV, a lower potential area. Mudzi is also at a greater distance from larger markets and from employment opportunities. The presence of Mudzi in the income calculations of Mudimu *et al* therefore likely results in a lower figure than Mutoko would demonstrate on its own. Dore's figures for Uzumba are higher than those of other studies and could be the result of a few factors, among them the inclusion of all goods received as well as cash

in the remittance, and therefore income, total Part of Uzumba is also in an area of higher agricultural potential, with reasonable access to markets and employment.

Given the diversity of information on 'average' or 'expected' incomes in the CAs, it is wise to question the utility of such an approach, a more productive strategy may be to speak of ranges of incomes rather than relying on absolute figures The studies indicate that most household incomes fall in the Z\$500 - 1200 range, with households in high potential areas at the top end of the range and those in low potential areas near the bottom It is important to stress the complexity of the situation with regards to household incomes in the CAs. While Jackson and Collier (1988:17) state the average annual income is Z\$700, the median is Z\$450 suggesting a highly skewed distribution of income and "the existence of a substantially differentiated peasantry" (*ibid*:43). In fact, the wealthiest 10% of households controlled 36% of all income while the poorest 50% accounted for only approximately 16% (*ibid*:18).

Another approach to exploring patterns of rural differentiation that has been employed with some success is the technique known as wealth ranking which involves local people classifying households according to their economic well-being (Carter, 1993:15) Rather than outside researchers choosing what criteria should be used to determine economic status, local people themselves decide on what basis wealth can be determined (Scoones, 1988:13) Once criteria are chosen, households are grouped according to their relative wealth status by community members (*ibid*:16; Carter,

1993:27).

While wealth ranking can help provide valuable insights not only into differences between households but also about local perceptions of what constitutes wealth (Scoones, 1988:16), employing the method is not without its difficulties. Of particular relevance to my research is the reticence local people may have in discussing not only their own wealth but the status of others in their community¹⁴. This reticence can be overcome but often only after a level of trust has been established between researchers and the community (*ibid.*)¹⁵. In my research, the level of trust required to conduct an effective wealth ranking exercise with local community members would have been difficult to establish given the large number of different villages I worked in, some of which I visited for only one or two days. Even where the community accepts the process, ranking is not without its problems. Carter (1993) provides an informative critical discussion of a wealth ranking exercise conducted in Mutoko CA. Among other problems and inconsistencies, those conducting the ranking were found to ignore personal factors such as motivation, focussing instead on visible wealth. There was also considerable ignorance of the amounts and reliability of remittances from absent household members (*ibid.* 49). Furthermore, while ranking of the 'extremes', that is the very rich and the very poor, was fairly consistent, there were considerable differences

¹⁴ Carter (1993:59-60) provides an excellent discussion of how wealth ranking can fail without a period of careful preparation with community members.

¹⁵ For example, Scoones (1988:16) points out that his success with wealth ranking can be partly attributed to the community's involvement of nearly two years in a participatory research process.

found in the ranking of the groups in-between. Disagreements indicated that some respondents lacked information on the households being ranked or were basing their assessment on significantly different criteria (*ibid* 27-8). Finally, members of the community who practiced unconventional or experimental farming methods were often placed in strata to which they did not appear to belong. However, because they went against the opinion of extension workers and the community at large, they were assigned to the poorest strata although they were clearly better off than their ranking implied (*ibid* 69).

It is clear that no method for assessing wealth is likely to be without inconsistencies and other problems. In the end, I settled on an approach that combined certain aspects of both more relative and more absolute approaches to stratify households' wealth status. By examining the literature on economic differentiation in Zimbabwe, I was able to employ the more widely held criteria for wealth in the rural areas as a proxy for wealth status. The papers reviewed for this purpose (Scoones, 1988; Fortmann and Nabane, 1992; Carter, 1993) were in considerable agreement over the utility of cattle ownership as a measure of wealth, especially in the view of local people¹⁶. While cattle holding might be "the clearest manifestation of wealth" in the criteria of local people (Carter, 1993:27) other measures can also be employed in the ranking process. Generally speaking, the number of cattle owned, amount of labour hired, non-farm

¹⁶ During some of my interviews I also enquired of local people on their concepts of wealth. Livestock numbers were the first measure emphasized, the only other criteria practical for me to use in my analysis being the ownership of certain goods which according to one respondent are "an easy sign of wealth because they're in full view."

income and probably the size of the land holdings appear to decline from the wealthiest stratum to the poorest (*ibid.*:viii,37,41,44-5). I also found the more standard indicators for wealth (Fortmann and Nabane, 1992:37) of ownership and amount of goods owned such as cars or tractors¹⁷, scotchcarts¹⁸, bicycles and wheelbarrows to be strongly associated with other measures of wealth, especially cattle ownership¹⁹. Therefore, in order to stratify the different households according to economic criteria, the cattle and other goods holdings of households were broken down according to amounts owned. While this method is also not likely to be without its inconsistencies, I feel it will help in providing general indications of how households belonging to different wealth strata are involved in the various practices that are the focus of this thesis.

2.5 SUMMARY

My original attraction to RRA as a research approach came about in part because of the convergence between my biases and those of RRA. Simply put, the underlying assumption is that local people's knowledge, priorities and perspectives have generally

¹⁷ Obviously, a household owning a car or tractor would still qualify as likely being relatively wealthy whether any other goods were owned or not. However among the few households that owned these vehicles (n = 13) all but one do in fact own above average numbers of goods *ie* more than one and up to twelve of the goods listed.

¹⁸ Scotchcarts are two, or sometimes four, wheeled ox-drawn carts used in the CAs to move a variety of goods.

¹⁹ Chi-square = 138.93, with 12 degrees of freedom and a significance of .0000. Data were analyzed using SPSS version 3.1.

been undervalued and ignored in most development research, even with all the rhetoric to the contrary "top-down, centre-outwards, prescription in the name of science and modernity is alive and well" (Chambers, 1992a:43). Without significant adjustments in our approach to research, it appears likely that we will continue on the path where programmes frequently fail to make any significant difference to the lives of 'target groups', or much worse, result in a weakening of peoples' livelihood strategies. RRA, by searching out the poorest and putting emphasis on the knowledge and priorities of local people, acknowledges that biases exist in research, and therefore these should be made explicit to clarify how information is generated and conclusions reached (Scoones and McCracken, 1989:6; Inglis, 1990:107 in Chambers, 1992a:29). In the same way that errors can be 'embraced' in RRA as a learning tool (Chambers, 1992a:14,32), the biases that we all have can also be accepted as part of the process of research. Therefore, "the question is not whether we should take sides, since we inevitably will, but rather whose side are we on?" (Becker, 1970:15 in Maguire, 1987:27)

Although almost any form of research might be described as 'participatory' depending on how liberal a definition is used, I will not assert my experience could lay claim to that title to any great extent. Such a term must be used with care; like other buzz-terms - 'sustainable development' springs to mind here - it runs the risk of being cheapened and discredited through improper use, deliberate or otherwise. Despite the time I spent talking with people about their concerns and aspirations, they did not

decide in any significant way what the research topic should be, nor did they participate in the ultimate analysis of the research. What they did provide was a patient sharing of their knowledge, abilities, concerns and aspirations. Perhaps my essential approach is most clearly described in a quote from Wilson (1987:1)

I worked from the premise that the local people knew more than "we" ever could about the nature of their environment, and that the quickest and most reliable method would be to research through listening to them.

It remains to be seen if RRA, PRA or other alternative research approaches have the potential to replace more traditional forms of research. In my case, both the formal survey and RRA played key complementary roles, the former in clarifying rural peoples' level of involvement in tree product marketing, the latter more in the area of providing insight into the decision-making surrounding those activities. Being forced by circumstances to adjust my methodological approach was an interesting learning experience, it led me to re-evaluate some of my own prejudices and recognize the value of Chambers' (1987:38) comment - though he was speaking of statistics at the time - that methods should be treated "as servant not master". Despite the criticisms outlined earlier in the chapter, there is no question that where used appropriately, questionnaire surveys can continue to provide useful inputs into development research. Problems arise where either method are expected to serve all the purposes of research rather than meeting the needs they are best suited for. I feel the methods played complementary roles in building up a more complete picture of a complex situation than either could have attained on their own.

CHAPTER 3

FORESTRY PROGRAMMES AND POLICIES: HISTORICAL AND IDEOLOGICAL ROOTS

3.1 INTRODUCTION

Large-scale programme interventions in forestry and agriculture in many countries of the South have demonstrated a focus on standardised technical packages based mainly on externally defined 'problems'. The persistence of these programmes in the face of highly uneven results suggests there are factors other than merely objective measures of 'success' acting to support the continuation of this approach to development planning.

In this chapter it will be argued that state policies and programmes, many with their origins in the colonial period, which impact upon the area of tree use by rural people in Zimbabwe, have not only failed to support rural people in gaining access to the range of benefits available through trees but in some cases have acted to limit the abilities of rural people to manage tree resources effectively. An important reason for these failures is an approach to planning that views Northern technical planning as superior, undervaluing or completely ignoring the abilities of rural people. A key aspect of this process is the external construction of a degraded rural environment

perceived to result directly from the inefficient practices of local people. Local people are viewed as both destroyers of their environment and as victims of their own short-sighted behaviour who must be assisted with technical plans imposed from outside. The basis of this viewpoint will be critiqued by demonstrating how different arguments have been used by both colonial and post-colonial institutions to justify the same programming decisions.

The chapter is organised around a number of main themes. The first explores the ideology of modernization that informed much of the colonial policy surrounding woodlands and tree planting activities. Not only were exotic species to be introduced into the African areas but the landscape was to be transformed into an 'ordered' environment, an approach which ignored and disrupted the management practices of local people. An important tool in the colonial quest to transform the rural areas was the imposition of natural resource legislation which sought to regulate the use of resources. Forest policy in Independent Zimbabwe continued to be influenced by colonial programmes and approaches as well as by those of the international aid community. To varying degrees and with differing justifications, policies and programmes in the forestry area throughout the colonial period and after have been driven by the concerns of outsiders rather than those of local people.

3.2 COLONIAL FORESTRY PROGRAMMES: THE IDEOLOGY OF MODERNIZATION

Extension and research surrounding forestry first in colonial Rhodesia and then in independent Zimbabwe have, not surprisingly, served to support the spread of technical packages based on prevailing forestry programmes. However, these technical programmes clearly reflect a specific ideological approach to the environment. Extension, both for forestry and agriculture, demonstrated early in the colonial period an ideology of modernisation that sought to promote a more ordered, efficient environment (McGregor, 1991:59, Wilson, 1989:374). Such a programme for modernisation had two readily apparent impacts on trees in the rural environment. The first was that exotic tree species, especially Eucalyptus, were promoted as a superior choice for planting because of their 'modern' qualities which were in marked contrast to those of 'untamed' and 'unproductive' indigenous 'bush' trees (Rhodesian Agriculture Journal, 1929 in Scoones and Matose, 1992:10). Second, associated with the addition of 'improved' trees to the landscape was the removal of trees from areas where they were deemed to be inappropriate. Long before the colonisation of Rhodesia, the selective retention of trees within the agricultural landscape was a common practice (Wilson, 1989:369,372). Not only were trees left because of the useful products they provided, but under shifting cultivation practiced in some parts of Zimbabwe, there was little reason to invest tremendous effort in removing all trees and their stumps given that the land would be abandoned after a few years. Leaving some

specimens standing along with the stumps of others also helped to ensure quick regeneration of the woodland as many of the species coppice strongly (*ibid* 372)

Given the over-all benefits of retaining certain tree species in fields, the practice is a clear example of rational decision-making on the part of farmers (Clarke, 1988 2-3)

The presence of trees in farmers' fields conflicted with the colonial government's plans for 'modernising' the native reserves. A key aim of the centralisation plans first introduced by the Rhodesian government in the mid 1930s was to eliminate the "haphazard distribution of agricultural and grazing lands" seen by E D Alvord, the Agriculturalist for Natives as "wasteful and injurious" (Report of the Native Production and Trade Commission, 1944, quoted in Drinkwater, 1989 298). Centralisation involved the deliberate separation of arable and grazing land with linear villages and roads located in between (*ibid*). Apart from its 'modernising' aspects, not to mention the potential for improving control over the rural population, centralisation was argued to provide the possibility of agricultural intensification in the Native Reserves (McGregor, 1991 103). Stabilisation and rationalisation of arable land was seen as a first step in introducing 'improved' farming methods that would allow for the maintenance of the African population on both a spatially and ecologically limited land base (Wilson, 1989.370,372; Scoones and Matose, 1992 4). Centralisation, therefore, had a clear political aspect, namely to support the colonial government's policy of land apportionment. It was up to the Chief Agriculturalist for Natives to

[develop] the native reserves so as to enable them to carry a larger population, and so avoid, as far as possible, the necessity for acquisition

of more land for native occupation²⁰ (Chief Native Commissioner, Annual Report for 1932, quoted in Drinkwater, 1989:293).

The concern over raising food production in the reserves, coupled with the belief that trees reduced crop yields through competition and interfered with ploughing, caused government extension workers to emphasize the need for farmers to remove trees and their stumps from arable fields (Wilson, 1989:372). Apart from the suggested benefits of tree removal to crop production, the setting aside of land for grazing or forest land and the establishment of more 'permanent' agriculture was argued to have a conservationist effect in that indigenous woodland would now have the opportunity to recover undisturbed from shifting cultivators (McGregor, 1991:106). In fact, the impact of centralisation on woodland resources in the Reserves was "profoundly negative"²¹ (*ibid.*). Not only were trees cleared from land designated as 'arable' but in those areas where significant tree removal had taken place prior to the implementation

²⁰ Government policy was not without its seemingly contradictory aspects. While trying to raise the productivity of the Reserves to enable the support of the African population on a restricted land base, the state was also concerned that African farmers not compete with white farmers. Hence regulations were passed using the pretexts of reducing erosion and maintaining stream flows to halt African farmers producing wheat in vleis (wetlands) (Wilson, 1989:370) (Discussion of the regulations governing natural resource use can be found in section 3.3.1). Raising productivity therefore appeared to be a desirable goal as long as it was without negative ramifications for the white economy. Katerere (1988:3) also argues that the Reserves "were never intended to be viable agricultural productive units" because their main role was to function as labour reserves for the white farms.

²¹ A significant cause of deforestation during centralisation was an "imposed reversal of land use" (Scoones and Matose, 1992:4) whereby arable land was to be located in well-wooded toplands away from previously farmed wetlands while the latter areas were allocated for grazing/woodland. Unfortunately, wetland areas are by nature inhospitable to trees and therefore woodlands cut in drier areas were not compensated for by tree regeneration in the previously farmed wetland fields (Wilson, 1989:371-3; McGregor, 1991:107).

of centralisation²² and fields were subsequently designated as 'woodland', regeneration was often poor. The same result occurred where inconsistent planning resulted in plots originally designated as fields being re-designated as grazing/woodland a few years later²³ (*ibid* 107, Wilson, 1989:373)

While centralisation was not put into effect in all Reserve lands, the extension policy promoting the removal of trees from arable fields was widespread. No attempt was made to assess whether or not the practice of leaving trees in fields actually had any positive effects, whether ecological or economic, which might outweigh any possible reductions in field crop yields²⁴ (Wilson, 1989:374). Such research would acknowledge that local practices might have some redeeming features (*ibid*), an unlikely occurrence given the authorities'

unquestioning belief in the evolutionary superiority of western technical culture, and specifically of modern agricultural and pastoral methods over any of those practised by peasant farmers (Drinkwater, 1989:295)

Although the effects of extension messages promoting the removal of trees have had a

²² The promotion of de-stumping by agricultural demonstrators pre-dated the implementation of centralisation, at least in certain areas (McGregor, 1991:107), and, as will be seen, survived it as well.

²³ It is little wonder that people in the rural areas harbour some bitterness over centralisation and tree removal policies, not only because of the loss of resources that resulted but because they have come to be blamed for something - the shortage of trees - which they feel originated with these policies more than their own actions (Wilson, 1987:10, Wilson, 1989:373).

²⁴ Mr Muzoka, a farmer in Mangwende CA, notes that the shifting agriculture practised in his father's time was stopped by about 1941 by extension agents who also pressed people to de-stump. Mr Muzoka felt leaving the trees would have been better because it reduced erosion: rainfall "used to spray off trunks" that were left standing in fields.

significant impact on tree stocks in some areas, it must be noted that farmers did not merely passively go along with the recommendations²⁵. While resistance was not necessarily active in the sense of being confrontational, it was nevertheless effective as is attested to by the numbers of trees still remaining in fields (Campbell, 1987; Wilson, 1989). As Wilson (1989:375) points out, farmers may appear compliant during meetings with agricultural demonstrators but will employ "every possible obfuscating and delaying tactic" to avoid implementing plans they see as opposed to their best interests^{26,27}.

The removal of trees from particular areas and the planting of exotics in others were part of an attempt to bring 'order' to the reserves' environment. The justification used for encouraging the planting of gum woodlots was not the lack of available wood²⁸ but "a lack of efficient planning of trees in the landscape" (McGregor: 1991:59). By the 1930s, gum tree woodlots and the planting of more decorative exotics such as jacarandas along roadsides were key parts of land use planning for the native reserves

²⁵ According to Gumbo *et al* (1990:197) "farmers saw this enforced removal as not only an infringement on their traditional practices but an additional intervention from the colonial administration that they regarded as of little worth".

²⁶ Other farmers, such as those wishing to acquire the 'Master Farmer' certificate from extension officers, sometimes went against their better judgement and removed trees, an action they saw as "another of the many costs of achieving the desirable state of being 'modern', rather like wearing a suit and tie" (Wilson, 1989:375).

²⁷ See also the section on 'The Regulation and Control of Woodland Resources' for a discussion of how religious arguments were used in the struggle to conserve trees.

²⁸ Indeed McGregor (1991:242) notes that when the first woodlots were established by the colonial government in Shurugwi "there was no economic shortage of indigenous timber".

(Scoones and Matose, 1992:11) The needs and concerns of local people figured no more in the planning of tree planting activities than they did in attempts to pressure farmers to remove trees. Beginning in the 1930s, dense stands of indigenous trees were removed under forced labour schemes to make way for exotic plantations controlled by the government. It is little wonder that rural peoples' experience of government tree planting programmes during the colonial period was of "land alienation and oppression" (*ibid.* 55).

Forestry extension and research within Rhodesia were heavily influenced by developments elsewhere. Both the type and direction of research owed much to European forestry and the experience of forestry departments in other British colonies (Scoones and Matose, 1992:11). Over the years, Rhodesia/Zimbabwe has gained a good reputation in the area of breeding and silviculture for pines and eucalypts, demonstrating the long-standing commercial orientation of forestry research in the country. However, very little research has been conducted on indigenous woodland (*ibid.*; Katerere, 1988:3). No research was conducted on developing extension packages tailor-made to the African farming areas (*ibid.*; Campbell and Grundy, 1991:72).

The clear separation between agriculture and forestry, not to mention the subordinate role of forestry in comparison to the promotion of agriculture, were factors that had a detrimental impact on the planning for trees in the native reserves (Wilson, 1989:382,

McGregor, 1991 61-2). Apart from being strongly crop-driven, the agricultural extension services viewed forestry initiatives as likely to be in opposition to plans to raise agricultural production in the reserves (Katerere, 1988.3, Scoones and Matose, 1992 10). Therefore, while limited woodlots might be acceptable as a component in the planning for the new 'ordered' reserves, agriculturalists viewed trees on farms "as something alien, which must be eradicated from the landscape" (Casey and Muir, 1988 10). It should be noted that the view on separation between the two disciplines was more or less mutual, neither the agriculture nor forestry department made any real attempt to integrate the other within their planning agenda (Scoones and Matose, 1992.10)

3.3 REGULATION AND CONTROL OF WOODLAND RESOURCES

Two separate, but not necessarily mutually exclusive woodland management systems are at work in Zimbabwe's CAs: one initiated and imposed by the state, and one originating in local communities²⁹ (Nhira and Fortmann, 1991:9). In order to understand the current approach to woodland management, an examination of the historical basis of state regulatory measures and 'traditional' management is essential. Much of the current legislation governing natural resources is rooted in the colonial period. These laws were in fact "adopted at Independence with little if any change"

²⁹ The regulation and control of forest resources is a complex topic. I will limit myself to those issues which relate directly to the area of interest. Sources drawn upon for the following discussion that provide a more in-depth review of the topic are Scoones and Matose (1992), Nhira and Fortmann (1991) and McGregor (1991)

(Katerere, 1988:3). As do their modern-day counterparts, colonial authorities viewed rural people as users of natural resources whose destructive practices had to be controlled (Scoones and Matose, 1992:8, Katerere *et al.*, 1992:24). This outlook is clearly reflected in comments by a director of the Imperial Forestry Institute

[I]t is expecting too much of the uneducated African willingly to conserve forests on hillsides and in catchment areas. His whole tendency in the past has been to destroy forests, and he cannot understand the reason for laws framed to preserve them ... (Troup, 1940 in McGregor, 1991)

The predominant approach to combat 'poor resource management' by peasants was the establishment of a legal framework with emphasis on criminalisation of use³⁰ (Katerere *et al.*, 1992:6). While compliance with regulations was mandatory in the Native Reserves (subsequently the Tribal Trust Lands and since Independence, the CAs), the approach in the white farming areas (now the LSCFs) was purely voluntary and included direct incentives for conservation. This dualism between the commercial and communal areas remains apparent in current resource legislation (Scoones and Matose, 1992:4,25).

So-called 'traditional' management of resources has also been significantly influenced by the colonial period. Many local institutions, and therefore their roles in resource management, are in fact "constructs of colonial intervention"³¹ (Scoones and Matose,

³⁰ McGregor (1991:303) quotes a Natural Resources Board document from 1951 describing the implementation of the Land Husbandry Act. Meetings were organised in villages "so that a few prosecutions can take place, that is the first essential"

³¹ Determining which of the 'traditional' institutions have pre-colonial origins and which do not is in fact a complex task (Scoones and Matose, 1992:6)

1992:6) The manner in which local leadership was manipulated, and in a sense reinvented by the state to serve its needs is illustrated by McGregor's (1991:305) comments on a Natural Resources Board (NRB) programme of the 1960's.

the NRB *taught* chiefs their 'traditional' role of 'guardians of the soil' - the traditional idiom was in tune with the development ideology of the Rhodesian Front [government], and could also give the NRB's ideas legitimacy (my emphasis)

While foreign constructs of 'traditional' African culture prior to colonization remained relatively constant through the colonial period³², the manner in which they were manipulated by subsequent governments did vary. For example, during colonial times local authorities were excluded from land management and control at some times, only to see their 'traditional powers' restored to them with the backing of the state at others (*ibid*: 304, Scoones and Matose, 1992:6, Bruce, 1990:7,11)

The history of land administration in the communal areas has resulted in enormous confusion with alternating empowerment and disempowerment of lineage authorities, periods of intensive state intervention with land use planning and a changing and sometimes contradictory legislative framework (Thomas, 1991, in Scoones and Matose, 1992:7)

Although situations vary according to the specific circumstances of a location, it is against this historical backdrop that current resource management issues are played out

³² In fact, some of these 'myths' survived the transition to independent Zimbabwe. Cheater notes that "colonial constructions [of communal land tenure] have been written into Zimbabwe's land law, and selectively strengthened after Independence" (1990:188)

3.3.1 Natural Resource Legislation

Of the range of legislation that applies to natural resources, a few Acts have particular relevance to the exploitation of woodland resources³³. The *Natural Resources Act* of 1942, even after 25 amendments, remains a "highly interventionist piece of legislation" (Scoones and Matose, 1992:45). The Act aims at controlling the use of natural resources through the NRB which has the authority, in theory, to direct land users to perform or cease certain activities with regard to natural resources³⁴ (*ibid.*; Moyo *et al.*, 1991:92; McGregor, 1991:303-4). In practice, enforcement has been erratic. As was the case with the Board's colonial predecessors, the NRB has been unsuccessful in implementing the Act (Katerere *et al.*, 1992:23; Scoones and Matose, 1992:46). Widespread resistance to the Act has centred on perceptions of it as a legacy of the colonial era. Many of the regulations were a focus for nationalist resistance during that period and the rules are still perceived as arbitrary and unreasonable³⁵ (McGregor, 1991:303-4; Nhira and Fortmann, 1991:2; Moyo *et al.*, 1991:92).

The *Communal Land Act* of 1982 "represents another swing in the pendulum of

³³ A more complete listing of natural resource legislation can be found in Scoones and Matose, 1992.

³⁴ Apart from tree cutting, the Act's other impact on issues of concern in this thesis is the restriction on any gardening activities within 30 metres of a stream or *dumbo* (Scoones and Matose, 1992:46), effectively eliminating a significant site for tree planting

³⁵ In fact, some recommendations of the act, including the '30 metre rule', "have been shown to be based on shaky empirical foundations" (Scoones and Matose, 1992:46)

control over land" placing authority over CA land-use planning once again in the hands of the state (Scoones and Matose, 1992:41). The top-down planning style inherent to the Act has strong similarities to the technocratic land-use planning of the colonial period (*ibid* 42). Such an approach reduces the ability of local people to formulate land-use strategies sensitive to their own circumstances.

The *Forest Act* led to the establishment of the Forestry Commission as a government parastatal required to maintain itself financially, this requirement has led to questions as to the suitability of the FC to be responsible for CA forestry activities (Moyo *et al.*, 1991:93, Casey and Muir, 1988:2). The state has sweeping powers under the Act to regulate and restrict the cutting of indigenous trees on all land, including commercial farms. However, as with the Natural Resources Act, the FC has had only limited success in Forest Act enforcement³⁶ (Scoones and Matose, 1992:47-8).

Finally, the *Communal Land Forest Produce Act* first enacted in 1928 and little changed since then, reflects the duality in natural resources legislation. Unlike the Forest Act, which has provisions for the sale of tree products, this Act restricts the use of CA forest products to 'own use'³⁷ (Scoones and Matose, 1992:48).

³⁶ A case in point is the requirement that the FC be notified 14 days prior to the cutting of indigenous trees with the intention of selling the wood or producing goods for sale (Attwell *et al.*, 1989:77). The FC reports that very few of the required permits have been issued suggesting the "extensive wood extraction activities undertaken by commercial farmers" are for all intents and purposes illegal (Scoones and Matose, 1992:25).

³⁷ As with the Forest Act, the Communal Land Forest Produce Act aimed to regulate the rapacious extraction of wood for the mines. However, these Acts had only a marginal impact as the licenses granted to companies to continue cutting were very lenient (Scoones and Matose, 1992:47-9, McGregor).

No forest produce exploited in the exercise of such a right [of own use] shall be a) sold to anyone, or b) supplied to anyone who is not an inhabitant of that Communal Land"³⁸ (in Fortmann and Nabane, 1992:8)

While certain features of the Act have been considered positive due to their intent of halting access to CA forest products by outsiders (Moyo *et al.*, 1991:93), the Act also renders 'illegal' the majority of forest product management techniques currently undertaken by local people in the CAs, including a number of important livelihood strategies³⁹ (Scoones and Matose, 1992:49)

3.4 POST-INDEPENDENCE FORESTRY

Among the policies and programmes which survived the transition to Zimbabwe's Independence without major modification was the approach to tree planting in the African areas, renamed the Communal Areas (CAs) following Independence. Although the justifications for continuing with this approach may have altered, the basic technical 'package' for forestry extension in the CAs remained the planting of eucalyptics, primarily gum trees, in woodlots (Scoones and Matose, 1992:11, McGregor, 1991:69). The argument for a programme fixation on gums was no longer, or not explicitly, 'modernisation' although it could be argued that the ideological basis for the

1991:52)

³⁸ Although as Attwell *et al.* (1989:77) point out, exceptions to regulations may be allowed if trees are cut in the process of clearing land for crops or homesites

³⁹ As Scoones and Matose (1992:49) note, "without a permit or licence, virtually any use of woodland is illegal" under the Act

programme remained intact (Deweese, 1992:47). Instead, arguments for encouraging rural people to plant trees centred on the specific need for rural afforestation to tackle externally perceived shortages in fuelwood and pole supply and to ease the demands on indigenous woodlands (World Bank, 1991:iii, Campbell *et al*, N.D.:3)

3.4.1 The 'Woodfuel Crisis' and Rural Afforestation in Zimbabwe

Beginning in the mid 1970s, much attention was focused on an impending 'woodfuel crisis' brought about by a rising demand for woodfuel which far outstripped the supply of woody biomass. The 'gap theory' spawned from this perspective on rural energy supply used estimates on the consumption of woodfuels - and occasionally other tree products - in a given area for comparison with available wood stocks and expected regeneration (Leach and Mearns, 1988:5-6, McGregor, 1991:67). Without any intervention, policy makers subscribing to this model⁴⁰ assumed that the 'gap' generally recorded between supply and demand would continue to widen until a catastrophic depletion in tree stocks resulted (Deweese, 1989:1160, Leach and Mearns, 1988:6-7). Given that a basic premise of such theorizing is that tree cutting for woodfuel is chiefly to blame for deforestation, 'solving' the energy supply problem would have the added benefit of significantly reducing the loss of tree cover (*ibid*:2,9). When deciding on an approach to solve the woodfuel problem, "the bias inherent in most

⁴⁰ 'Gap theory' regarding woodfuel supplies has in fact been highly influential in the institutions responsible for much of the donor activities surrounding forestry planning in Africa including the UNDP, the World Bank and the IAO (Leach and Mearns, 1988:6)

analyses [was] that aid-financed project interventions [were] the solution" (Dewees, 1989:1161). In fact, the perceived need for a massive effort to close the supply/demand gap was used to justify significant investment in a great number of large-scale, centrally directed woodlot programmes emphasizing fuel provision (Leach and Mearns, 1988:7)

In keeping with concerns voiced elsewhere by policy makers, at the time of Zimbabwe's Independence in 1980, a great deal of attention was suddenly focused on wood energy and the potential for impending collapse in the fuelwood supply in the CAs (Hancock, 1991:94). The woodfuel deficits identified in a study conducted by the Whitsun Foundation (a non-profit development organization in Zimbabwe) at the end of the 1970s helped justify the creation of the US\$ 10.6 million Rural Afforestation Project (RAP) by the Forestry Commission of Zimbabwe and the World Bank. The RAP, begun in 1983, had "a very strong emphasis on woodlot development for fuelwood and construction poles" (World Bank, 1991:11.5.12). Although there were proposals to provide a range of tree species to rural households through the project, in the end the project focused primarily on the production and distribution of three species of *Eucalyptus*⁴¹ (World Bank, 1991:11.5.15, World Bank, 1983 in Campbell *et al.*, N.D.:2).

Why was the decision made to concentrate on *Eucalyptus* production? While

⁴¹ Dewees (1992:48) estimates that between 90 and 95% of the seedlings produced as part of the RAP were *Eucalyptus* varieties.

arguments from the colonial period referring to the species' 'modern' qualities might have held sway then, it is difficult to conceive of such reasoning being invoked to support choices for a multi-million dollar reforestation programme in the 1980s

However, Scoones and Matose (1992 11) argue that

many of the debates surrounding forestry policy for the past 60 years apply today. The same arguments and justifications . . . employed by Forestry departments in the 1920s . . . are used in contemporary discussions. Similar arguments about 'unproductive bush' as against superior and productive exotics are also employed in contemporary discussions about tree planting and management strategy

As it had been the main choice for pre-Independence woodlot programmes, a further consideration favouring Eucalyptus was the considerable experience that had been acquired within the country in producing the species within the favoured woodlot format. Katerere (1986 125) suggests that this experience strongly influenced the direction of post-Independence forestry planning. As Hancock (1991 94) puts it "species favoured [for programmes] are promoted . . . because they are well researched and understood" by those in forestry planning positions. While one might assume that the knowledge of a species' silvicultural and management requirements is not the only or best criterion to use as the basis for programme planning, it is possible to understand why such knowledge would steer planners towards the promotion of Eucalyptus woodlots (Campbell *et al* , N.D.:14). The influence of commercial forestry employing exotic plantations has already been discussed with reference to its effect on forestry research within the country. One of the results of this influence is that out of a range of possible forestry initiatives "only Eucalyptus woodlots have been researched in anything but the most cursory of fashions" (*ibid*)

Apart from the role of simple inertia in species' choice, other factors also served to support a decision to base afforestation around eucalypts. Casey and Muir (1988:1) note that a World Bank forestry sector policy paper of 1978 advocates growing Australian Eucalyptus to address critical fuelwood shortages based on the fast growth rate of gums relative to "other known species". No mention was made of the poor burning qualities of Eucalyptus. Because of the limited research on indigenous trees, there was little likelihood of them becoming 'known species' and therefore no assessment of how they would compare to well-known exotic varieties for potential use in planting programmes⁴².

The decision taken within the RAP to emphasize woodlot production with Eucalypts provides a clear example of what Dewees (1992:26) has described as the lack of an "institutional memory" that can be found within the state planning bureaucracy. Eucalyptus woodlots established during the colonial period were widely viewed as failures⁴³. However, a combination of ideological influences, the inertia of forestry planning and the requirement for a technical package in a climate where few were

⁴² Campbell *et al.* (ND:4) note that preliminary research conducted outside of Zimbabwe suggests that some indigenous species could be as productive as Eucalyptus in fuelwood production, especially given the poor performance of Eucalyptus in comparison with expected yields. Studies in Senegal also suggest so-called 'scrub' species of *Acacia* produce roughly equal amounts of fuelwood per hectare as Eucalyptus with less management and no establishment costs (Leach and Mearns, 1988:172).

⁴³ Among the reasons for the unpopularity and failure of pre-independence woodlot programmes is that local people did not share the government's view that tree planting was required to ensure adequate supplies of wood (Katerere, 1988:3). Consequently, coercive practices were often required for woodlot establishment leaving this form of tree planting associated with government oppression (Clarke 1991b:2). Not surprisingly, the condition of colonial-era woodlots is often poor (McGregor, 1991:243).

available, resulted in a continued reliance on exotic woodlots, an approach which remains the basic model for forestry extension to this day (Scoones and Matose, 1992:11, Clarke, 1991b:2)

3.4.2 Shortcomings of the 'Crisis' Theories

Although the idea of a 'woodfuel crisis' played a useful role in emphasizing to policy makers the important role played by trees in the lives of people in the South, as a planning tool it contains a number of serious deficiencies (Deweese, 1989:1170). First, much of the data used to support gap theory is incomplete. For example, national estimates of consumption and standing tree stocks, key to the entire projection of deficits, are often extremely rough (Leach and Mearns, 1988:8). The situation in Zimbabwe with regard to tree stock estimates is no exception. Following a review of the range of attempts to quantify the remaining woodland resource in the country, Bradley (1990:2) concluded that the estimates provided "fall a long way short of the minimum necessary for effective planning"⁴⁴. In fact, the most generous estimate of woodland cover reviewed is four times that of the lowest estimate made by the Whitsun Foundation report. As Leach and Mearns (1988:8) argue: "this numbers game is played with weak numbers"

Furthermore, many of the rough estimates employed tend to focus only on significantly

⁴⁴ The deficiencies of official statistics in Africa for assessing environmental degradation - as well as a host of other 'crises' - have been noted by Watts (1989:8-10)

treed areas rather than also including the sources of woodfuel which exist outside of 'forests' or 'woodlands'. Farms, common grazing lands and other areas can actually be important biomass sources and neglecting them can lead to "gross underestimates of the resources which are actually used for fuels" (Leach and Mearns, 1988: 8).

McGregor (1991: 200-01) notes that in contrast to deliberate collecting trips, frequently assumed to be the major or only source of woodfuel entering the household, fuel collection is often more 'opportunistic' where women on their way back from work snap off bits of brush fences or collect small twigs or branches from hedges and other scattered trees not located in 'the forest'. Even exotic fruit trees around the homestead can be a useful, albeit minor, source of fuel (Fortmann and Nabane, 1992: 30). Many gap studies also consider cut over areas to be 'lost' sources of woodfuel ignoring the fact that the regrowth of shrubs will provide a source of burnable material (Leach and Mearns, 1988: 8).

A further issue arising in the Zimbabwean context is the danger of 'double-counting' the amount of wood households consume for fuel and other purposes (Deweese, 1992: 33). In her research in Shurugwi CA, McGregor (1991: 215, 233) found that wood used as construction material, such as for garden fencing and temporary granaries, is ultimately recycled as fuel⁴. Therefore, any estimates of household wood use based on adding together construction and fuelwood totals, without an awareness

⁴ It is unclear to what degree this situation is replicated in the rest of the country. However, as burning old construction wood has advantages beyond mere conservation of the resource, including superior quality and proximity to the household (McGregor, 1991: 194), it is possible that fuelwood 'recycling' is found in other parts of Zimbabwe as well.

that last year's construction material is this year's woodfuel, can significantly inflate total consumption figures

The actual forecasting methods employed are also cause for concern in woodfuel modelling. Woodfuel gap projections are generally based on the continuation of existing consumption patterns which, when rising population is factored into the equation, makes for ominous predictions of the imminent collapse of the resource base (Dewees, 1989 1160, Leach and Mearns, 1988 8). Such forecasting however, treats the actors in this drama, rural people - and especially women as those most concerned with woodfuel usage - as passive onlookers unable or unlikely to respond to changing conditions. It is perhaps not so much that planners are unaware that people will make adjustments in current consumption, gathering practices and so on, it is more that these adjustments are next to impossible to quantify for inclusion in the modelling exercise. Therefore, most models function on the basis of 'trends continued' even though realistically, trends will not continue as the woodfuel situation alters (*ibid* 8-9). As Dewees (1989 1161) points out

rural people are *already* responding to increased woodfuel demands in ways which are innovative and imaginative and which involve far lower economic costs than many project interventions [emphasis in original].

Studies conducted over a range of CAs in Zimbabwe do in fact reveal a variety of strategies, including the wood 'recycling' described above, employed by rural people to deal with whatever woodfuel supply situation they face in their area. In comparing

woodfuel usage in two villages, one in a well-wooded zone and the other in a heavily deforested area. Hancock (1990 in Bradley, 1990: 14) found that women in the latter village utilize various practices such as extinguishing fires immediately after use, lowering the grate and constructing windbreaks to conserve fuel. Savings were not insignificant: households in the deforested zone consumed 60% of the fuel used per household in the well-wooded area. Furthermore, the methods employed in reducing fuel use had no significant effect on traditional food preparation practices (Hancock, 1991: 94). Woodfuel consumption is clearly not a static variable, there is in fact a dynamic relationship between fuel usage and a host of factors including supply (Deweese, 1989: 1161). By failing to consider - or simply being unable to include - the modifications rural people make in their use of woodfuels in the face of changes in supply, labour availability and other factors, gap analysis tends to oversiate the degree to which external interventions to balance woodfuel supply and demand are required⁴ (Leach and Mearns, 1988: 9).

Of crucial importance to the entire 'woodfuel crisis' debate is the central role that policy makers assign to fuel harvesting in deforestation. The supposed link between woodfuel use and deforestation, as well as the corollary that deforested areas contain inadequate supplies of fuel to meet human needs have together formed the basis for a

⁴ An example from Gulu CA demonstrates not only the danger in ignoring local strategies in discussions of woodfuel supply, but also the general difficulties with simple trend analysis. Haney (1984 in Hancock, 1987: 2) predicted that if all remaining wood stocks in Gulu were cut, resulting supplies would only last three months. However, although "no significant tree planting programme has been initiated... Gulu's residents are still cooking three meals a day, brewing beer and burning bricks, three years later" (Hancock, 1987: 2).

large percentage of tree planting projects during the last 15 years (Deweese, 1989:1165). Included in this group is the Government of Zimbabwe/World Bank Rural Afforestation Project (RAP). The Project Completion Report (World Bank, 1991:3) notes "a tendency in past reports (including the Bank's own appraisal report) to attribute forest destruction to over harvesting of fuelwood". If woodfuel harvesting is the main cause of deforestation, then projects directly aimed at providing abundant fuel supplies will *ipso facto* arrest the loss of tree cover.

In Zimbabwe as in many other parts of the world, the connections between woodfuel use and deforestation used in project justification are not reflected in reality.

Deforestation is now accepted to be much more a result of expanding demands for agricultural land⁴⁷ (Deweese, 1989:1165, Leach and Mearns, 1988:9-15). Studies in Zimbabwe employing the use of aerial photographs spanning more than two decades, provide confirmation that the prime factor in deforestation is clearance for agriculture (Whitlow, 1988, du Toit *et al* , 1984, Campbell and du Toit, 1988). In fact, in some areas woodland depletion was already severe by the early 1960s⁴⁸; despite demands for fuelwood and other wood products, deforestation rates in these sparsely wooded areas since that time have been relatively insignificant, reaffirming the minor role played by wood use in forest depletion (Whitlow, 1988:6 Deweese, 1989:1166).

⁴⁷ Although as recently as 1989 a study was still claiming that tree cutting for woodfuel was the main cause of deforestation in Zimbabwe (Kamau, 1989:9).

⁴⁸ Apart from the centralisation policies already discussed, factors in this early deforestation were - depending on the area - over-cutting for running the mines, supplies for the growing towns as well as arable expansion by the African population (Wilson, 1987:10-11).

When the strategies for fuel collection are examined, the reasons why woodfuel use is not a key factor in deforestation become apparent. Live wood is not a favoured fuel. McGregor (1991:193) points out that women prefer dead wood because it weighs less, is easier to harvest and it can be burnt immediately. According to the Baseline Survey on wood usage in Zimbabwe's CAs conducted by du Toit *et al.* (1984), over 80% of households meet almost all of their fuelwood needs through burning dead wood. Although in more deforested areas a greater number of households rely at least to some degree on live cutting, most woodfuel harvested is not cut (du Toit *et al.*, 1984:71; McGregor, 1991:193). Even where live wood is cut for fuel, women are generally careful to take only one coppice shoot per tree and to distribute their cutting over a broad area⁴⁹ (*ibid.*:198).

Densely populated areas with a long history of settlement contain limited but relatively stable woodland cover. In contrast, areas of high in-migration, such as the Resettlement Areas (RAs), where land is being cleared for agriculture are experiencing the highest rates of deforestation in Zimbabwe (Bradley, 1990:9). Campbell and Grundy (1991:40-1) report that RAs and neighbouring commercial farms are an important source of woodfuel for CA residents. McGregor (1991:195,198-9) notes that Shurugwi CA residents practice live cutting in the RAs and commercial farms, generally with little care. As McGregor suggests, it may be that women target the best quality firewood which is unavailable elsewhere, or possibly (in the case of

⁴⁹ Similar sustainable harvesting practices have been reported elsewhere, in Sierra Leone, Inglis (1988:4) notes women selectively cut fuel from rapidly growing species and those that coppice well

the RAs) the breakdown of local management results in essentially "an open access situation where resettlement resources are open to anyone" (Scoones and Matose, 1992:20). In any case, as the emphasis in the RAs has generally been on land clearance for farming, often with much of the cut wood simply being burnt in place (*ibid.*:21), live woodfuel cutting by residents of neighbouring areas is unlikely to be responsible for a significant proportion of woodland depletion.

While the conversion of woodland to a diverse area of selectively cleared agricultural land with scattered, coppiced trees (Scoones and Matose, 1992:5) has been negatively viewed by planners and resource managers from outside the rural areas, "given increasing population pressure, much of this conversion of savannah woodland to agriculture is a logical shift in land use" by rural people (World Bank, 1991:3). Furthermore, the selective removal of larger trees while conserving certain specimens and pollarding/coppicing others, does not necessarily result in a less useful resource, in fact the opposite may be true (Scoones and Matose, 1992:5). The production of tree fodder and woodfuel can actually be enhanced by harvesting: it has been suggested that heavily pruned farm trees might grow ten times as fast as the same trees left to mature undisturbed, thus producing increased amounts of biomass⁵⁰ (*ibid.*; Leach and Mearns, 1988:48). Unfortunately, little research appears to have been conducted on

⁵⁰ In areas such as the Himalaya where tree fodder is an essential part of the agricultural system, older women train young women in the art of pollarding to maximize the sustainable harvest from the forest. When done correctly, pollarding appears to increase forest density and fodder production (Shiva, 1989:60).

the productivity of regularly coppiced/pollarded woodlands⁵¹ and the possibility of higher production rates under such circumstances has not entered into most analyses of woodfuel supply⁵² (Deweese, 1989:1171). Given the apparent ability of rural people to obtain adequate fuel supplies even in apparently heavily cut over areas as well as the conclusion that woodfuel use is not a major cause of deforestation, it appears the "perceived need to plant Eucalyptus trees in community woodlots - for the future provision of woodfuel - may be misplaced" (Bradley, 1990:9).

3.4.3 Differing Perspectives of Rural 'Problems'

Earlier discussions of the inadequacies of gap theory in the Zimbabwean context is not meant to suggest that there are no shortages of woodfuel in Zimbabwe, nor that in some cases obtaining adequate fuel supplies does not constitute a hardship for people. However, any shortages of woodfuel in the CAs tend to be restricted to certain locations and it is inappropriate to speak of a 'woodfuel crisis' in any sort of a national sense (World Bank, 1991:2, Deweese, 1992:31, Katerere, 1988:4, Bradley, 1990:15, McGregor, 1991:191). The level of deforestation in Zimbabwe's CAs demonstrates considerable heterogeneity. Even in some of the densely populated districts where most arable land has been put into production, scattered and important woodland

⁵¹ Campbell *et al.* (1991b:52) suggest exploring productivity increases with various coppicing strategies as a part of a greater research effort to be undertaken in Zimbabwe on indigenous forests.

⁵² Yields in plantations established as part of the RAP have only been 20 to 30% of the production rates anticipated during project planning (World Bank, 1991:iv).

resources remain on the rocky hills which cannot be farmed (Bradley, 1990:5-6, Wilson, 1987:65). It appears that the degree to which shortages are spreading as well as the limits, if any, to rural peoples' ability to adapt to changing circumstances in woodfuel supply remain unclear¹¹. What does seem clear however, is that rural people do not perceive shortages of woodfuel with anything like the degree of urgency that has been demonstrated at times by government planners and reflected in the projects they create (Arnold, 1990:13, Dewees, 1989:1167). This apparent lack of concern on the part of rural people has been suggested as arising from an inability to 'understand exponential growth' or to 'see the long view' (*ibid*, Inglis, 1988:9,12). Comments such as the following are common, especially in the literature on why farmers may not take up tree planting

the minimum five years time horizon [in tree planting programmes for woodfuel provision] for a return on their investment is difficult for people struggling to manage from one year to the next to appreciate (Hancock, 1991:94)

Chambers (1991:7) argues that in contrast to the prejudice of outsiders, many rural people do in fact take a long-term view as manifested in the activities they undertake. Perhaps rural people simply did not consider tree planting as the appropriate or most productive strategy for meeting their fuel needs? Most rural households do not appear to perceive a crisis in the fuel supply situation, a point made abundantly clear in the Baseline Survey conducted *after* the commencement of the RAP

¹¹ For example, Katerere (1988:4) suggests the trends are towards woodfuel shortages in more places affecting more people, while McGregor (1991:191) questions whether we can speak of a crisis in supply even in deforested areas

Dewees (1989 1170) has noted that Baseline Surveys conducted as part of an already determined programme are highly 'value-laden'²² exercises as

it would indeed be an institutional dilemma if an agency which had been given the mandate to develop a woodfuel project intervention discovered that in fact woodfuel was not a serious constraint in the proposed project area

The Baseline Survey (du Toit *et al* , 1984) conducted as part of the Zimbabwe RAP was unusual for two reasons: first, it was undertaken following the commencement of the Project, and second, it did provide information suggesting the fuelwood aspect of the programme was over-emphasized. Farmers' responses demonstrated that they did not share in the view that there were serious woodfuel shortages, over 50% of respondents considered fuel easy to obtain, while nearly 70% felt fuel supplies were adequate for household needs²³ (Dewees, 1989 1166, World Bank, 1991 12,14). Despite these and other "compelling findings, the Baseline Survey had a negligible impact on project implementation" (*ibid* 12).

3.5 LOCAL INSTITUTIONS AND NATURAL RESOURCE MANAGEMENT

While the natural resource regulations previously discussed remain 'on the books', a range of factors act to limit their implementation on the ground. Certain regulations

²² "Obviously research must be conducted prior to implementing any programme. Dewees' (1989 1170) argument is that the form the research takes must be much more open-ended than appears currently to be the case. Pre-programme research has been used and unfortunately probably still is used as much to validate externally determined problems as it is to explore the issues in the first place.

²³ "There was apparently no significant difference between women and men in their perceptions of woodfuel availability (Dewees, 1992 32).

are essentially "unenforceable due to the absurdities apparent in [their] drafting"⁵⁶ (Scoones and Matose, 1992 49) especially in the face of intensive pressures on resources (Moyo *et al* , 1991 91) Enforcement is also made difficult by the lack of resources available for policing given the large areas covered by the regulations^{57 58} (Attwell *et al* , 1989 77, Mohamed, 1992 in Katerere *et al* , 1992 23).

A further factor in the implementation of land-use planning, including that surrounding natural resources, is the effectiveness of local institutions responsible for resources. Depending on local history, including events during the liberation struggle, government intervention, migration patterns and other factors, the relative strengths and political legitimacy of institutions will vary greatly from place to place (Scoones and Matose, 1992 18). In some areas there has been considerable overlap between the previous

⁵⁶ One of the 'absurdities' noted by Scoones and Matose (1992 49) is the extension of the 30 metre rule of the Natural Resources Act to a 100m distance from watercourse in the Communal Land Forest Product Act from which no tree products can be removed. Such a swathe in some CAs would essentially place most woodland out of bounds. The increase to 100m is apparently due to a mathematical error caused by "translating the earlier drafting in feet to metres".

⁵⁷ Where the police are responsible for enforcement of tree-cutting regulations, they may consider 'real' crime more of a priority (Mohamed, 1992 in Katerere *et al* , 1992 23). Furthermore, local people may learn fairly quickly when the police do not patrol and it is therefore safe to 'steal' trees (Fortmann and Nabane, 1992 33).

⁵⁸ Fuelwood harvesting in the Resettlement Areas provides a good example of the ineffectiveness and impracticality of some natural resource legislation. RA farmers are not allowed to cut and sell fuelwood without permission of the local authorities. Even where permission is granted, sales are only allowed within the RA (Attwell *et al* , 1989 71), pointing to the absurdity of some regulations. It is unlikely sales of fuelwood are feasible within the RA given that most households in these areas will find wood easily accessible and that trees cut during land clearance are sometimes simply burnt to dispose of them (Scoones and Matose, 1992 21). Despite these "stringent regulations", fuelwood from RAs continues to reach the Harare market (Attwell *et al* , 1989 77).

power structure of lineage leaders - chiefs, headmen, *sabhukus*⁵⁹, kraalheads - and new institutions such as Village Development Committees (VIDCOs), while in other areas the relationship has been less harmonious⁶⁰ (*ibid*, Moyo *et al*, 1991 107, McGregor, 1991 309-10) Where lineage leaders have been excluded from the new institutions, some VIDCOs have experienced difficulties in implementing measures due to a lack of political legitimacy in the eyes of the local population (Katerere *et al*, 1992 22, Wilson, 1987 60) Wilson (*ibid*) reports that VIDCO members have often been perceived by local people as being too inexperienced for leadership roles and too eager to impose the edicts of the state instead of developing their own strategies However, in recent years

... there is increasing evidence of a convergence between post-Independence elected local government structures and 'traditional' leadership, as *sabhukus* and others negotiate their way into the modern political process⁶¹ (Scoones and Matose, 1992 19)

The result is that while local power struggles may continue, there appears to be potential for a more concerted approach to resource management developing at the

⁵⁹ *Sabhuku*, 'holders of the book', are 'traditional' leaders that were appointed by the colonial government as local administrators (Scoones and Matose, 1992 6) They have at times been accused of collaborating with the previous regime, leading to friction between them and local members of the governing party (Abel *et al*, 1989 43)

⁶⁰ During the period immediately after 1984 when VIDCOs were first created, lineage leaders were excluded from representation on the committees (Scoones and Matose, 1992 6), however, in many cases it did not take long for lineage leaders to gain back "some *de facto* influence" despite [power] being officially in the hands of local authorities" (Stoneman and Chiffe 1989 133) As Bruce (1990 8) notes, where headmen have VIDCO positions "it is not always clear upon which source of legitimacy they are drawing in making land administration decisions"

⁶¹ I came across an example of this with an artisan seeking permission to cut trees After he approached the VIDCO chairman for permission the chairman consulted the local headman before the request moved to a higher level

local level⁶² (*ibid.*:7,19).

VIDCOs generally see themselves as responsible for woodland management at the local level and are encouraged by the government to enforce policies to that end (Wilson, 1987:60; McGregor, 1991:311). Apart from the problems described above, difficulties arise from the manner in which VIDCO boundaries⁶³ have been delineated by outside administrators without taking into account lineage clusters, previous resource control boundaries or current resource endowments (Scoones and Matose, 1992:19; McGregor, 1991:314). The result is that some communities have been left with inadequate access to woodland leading, in some cases, to resource conflicts between adjacent communities (Nhira and Fortmann, 1991:25; Wilson, 1987:60). Wilson (*ibid.*) suggests that attempts by communities to manage woodlands for their exclusive use by refusing access to outsiders have met with only limited success. In other areas the emphasis appears to be more on controlling access whereby outsiders are supposed to ask permission from the VIDCO before engaging in cutting (McGregor, 1991:313). In these cases consent is generally given, perhaps due to the realization that resource endowments are more an accident of geography and history rather than wasteful practices, or perhaps because with the knowledge that not all

⁶² There are dissenting opinions however. Mukamuri (1991:151) questions whether the VIDCO system can ever co-exist effectively with the traditional structure.

⁶³ Scoones and Matose (1992:19) and Murombedzi (1991:2) state that each VIDCO is to be made up of 100 households. McGregor says that VIDCOs in Shurugwi CA comprise 150 - 170 households or about a thousand people (1991:9). In my study area I was told of VIDCOs of less than 100 households. While VIDCO size may vary, the key point is that boundaries are essentially artificially demarcated.

cutting could be stopped, it is better to have some control over how it is done"⁶⁴ (*ibid.*, Wilson, 1987 60-1)

The perceptions of authorities responsible for enforcing regulations also has an important effect on natural resource legislation enforcement, or the lack thereof. Nhira and Fortmann (1991 2) argue that "the emergence of a developmental rather than a control perspective" has rendered legislation largely ineffective. In practical terms, this translates into a reluctance on the part of some local authorities to prosecute people who have no alternative but to use trees (Katerere *et al.*, 1992 23). As a Natural Resources officer in the study area told me, "you can't stop people from doing these things - they do them to survive". Furthermore, locally elected bodies may shy away from implementing regulations because "unpopular [enforcement] activities are likely to affect their power base" (Katerere *et al.*, 1992 23).

No communities are likely to be without rules regarding the use of trees, whether the rules have been created externally but are implemented by local institutions, or are of local origin (Wilson, 1987 12). Apart from the externally created controls on tree use previously described, Nhira and Fortmann (1991 9-10) list three community management systems at work in woodlands: sacred controls, pragmatic controls and the civil contract. *Sacred controls* generally involve prohibitions or taboos on cutting

⁶⁴ Or as Nhira and Fortmann (1991 24-5) point out: it may simply be that permission is rare refused because "it is hard for people to interfere with their neighbours' struggle for a livelihood by whatever means".

2

MICROCOPY RESOLUTION TEST CHART
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1963-A REFERENCE MATERIAL
1010A1
ANALYTICAL TEST CHART NO. 21

either particular species, particular specimens or cutting in certain sacred groves, these taboos are dependant on individual belief and or fear of sanction by the community and 'traditional' leaders (*ibid* 9, Katerere *et al* 18, McGregor, 1991 290-97) The basis of sacred control is that the trees involved are owned by the whole community - not only the present and future inhabitants but also the ancestors - and therefore no individual has the right to cut them (Campbell and Grundy, 1991 35, Wilson, 1987 58) *Pragmatic controls* are norms of tree use that aim at maintaining the supply of certain products, such as fruit, and at avoiding destructive practices in general including the cutting of live trees for firewood (Nhira and Fortmann, 1991 9,20) *The civil contract* refers to norms of daily conduct and seeks to "restrain excessively avaricious behaviour" (*ibid* 10) Although in some areas it has been undermined by resource shortages, the civil contract previously meant that fuelwood or poles could be gathered and left in the forest for later collection without fear of theft (*ibid* , McGregor, 1991 315)

While the basis for the various local management systems described above may be different, their effects are by no means mutually exclusive For example, indigenous fruit trees make up perhaps half or more of the tree species considered 'sacred', not only is cutting productive specimens forbidden, but various taboos also exist against

⁶⁶ Wilson (1987 12) reports coming across cases where individuals had been stopped part way through felling a tree "by critical comments of passers by, or malicious rumour"

marketing the fruit of these trees"⁶⁶ (Campbell and du Toit, 1988 339, Clarke, 1988.3, Grundy 1990 in Campbell and Grundy, 1991 35, McGregor, 1991 294, Gumbo *et al* , 1990 193) At the same time, indigenous fruit trees are maintained for pragmatic reasons because they are an important component of rural diets, especially childrens' (Clarke, 1988 2, Katerere *et al* , 1992 18, Campbell, 1987 384, Nhira and Fortmann, 1991 9,20,27, McGregor, 1991.298, Wilson, 1989 377)

The relative strengths of each management system will vary significantly from place to place depending on a host of factors such as the strength of traditional religious leaders, the amount of immigration into an area and local resource endowments. Generally speaking, it appears that sacred controls are currently weakening in many areas of Zimbabwe (Campbell and du Toit, 1988 339, Clarke, 1988 3; McGregor, 1991 297,300,302, Nhira and Fortmann, 1991 17) In those areas where significant immigration has occurred, new residents are unlikely to respect traditional religious leaders and taboos on resource use where they conflict with immigrant beliefs (*ibid* 19, McGregor, 1991 297, Gumbo *et al* , 1990.201-3) Followers of the African Independent Christian Churches are also unlikely to show reverence, and they may in fact be hostile, to local religious leaders or their proscriptions on resource use (Nhira and Fortmann, 1991 19,39,48). It must be noted that the breakdown of sacred controls does not necessarily indicate the failure of a "comprehensive environmental

⁶⁶ As these trees belong to God and are therefore no individual's property, it is offensive to the ancestors to market indigenous fruit (Gumbo *et al* , 1990 203) In a similar fashion, these trees are common property even if they are located within a home yard although if they have been planted or transplanted they may be considered to fall under a form of 'ownership' (McGregor, 1991 294-5,315)

management strategy – as the purpose of many of the controls was not solely conservationist even if that was the effect" (McGregor, 1991:297). Mukamuri (1991:147), for example, argues that traditional religion functions not to conserve resources in general, but to strengthen "the political hegemony of the ruling elite"⁶⁷. Apart from providing access to resources for chiefs and their families (Wilson, 1987:61), religious controls also help enhance authority by ensuring chiefs are approached for permission to cut trees (Mukamuri, 1991:162; Kamau, 1989:42). In response to attempts by the state to institute 'scientific' resource management policies, such as removing trees from arable fields, sacred controls have also been manipulated by both ruling elites and individual farmers, the former for reasons of control, the latter to maintain an important resource (Wilson, 1989:381). Wilson (1987:59) argues that emphasizing the spiritual importance of fruit trees was seen by local people as less confrontational

than try[ing] to persuade the extension workers that the value of the fruit and shade out did the costs in crop damage, let alone that some of the trees were actually improving soil fertility and crop yields, a discussion which would never have been countenanced by the authorities

As many of the resource policies of the colonial state remain in place in independent Zimbabwe, various 'traditional' religious idioms are still invoked by various groups to

⁶⁷ Some controls were conservationist in the sense they 'conserved' resources for later use by local elites. Mukamuri (pers. comm. in Nhira and Fortmann, 1991:18-19) suggests the elite 'guardians' of sacred woodlands use this resource "like a bun in a pocket [to be] chipped – all the way on your journey". An example of elites' manipulation of sacred controls is a "sacred hill with a haircut" where members of the ruling lineage and their friends had opened up new fields.

resist inappropriate state initiatives⁶⁸ (McGregor, 1991:299)

What impact do the state and local management systems described above actually have on resource use? The situation is quite complex and depends a great deal on the origins of respective resource management systems. State legislation surrounding natural resources appears to be, at best, irrelevant to the practices of local communities and, at worst, functions to deprive communities of the ability to manage their resources in a manner appropriate to local conditions. A great deal of the legislation as it currently stands is in effect unenforceable legally, administratively and politically. In a number of cases, regulations run counter to common sense, indigenous knowledge and recent empirical evidence, resulting in a loss of credibility for natural resource legislation (Scoones and Matose, 1992:41,46). Because the legislation is applied unevenly, its impact on different user groups is also quite uneven. While farmers forced off garden plots deemed in violation of the 30m rule obviously keenly feel the effects of legislation (Bell and Roberts, 1991:306; pers. obs.), those people engaging in the sale of products derived from CA woodlands do not appear particularly concerned with any prohibitions on the practice. In general, the impact of the state on resource use by artisans and others who use woodlands to generate income is in the area of resource extraction and appears to be experienced mainly as it is expressed through

⁶⁸ 'Tradition' is also invoked in day-to-day conflicts. Matose (in Wilson, 1987:58-9) recounts the story of an old man who dissuaded a road crew from cutting a very large tree near his home by telling them the ancestors lived in it and they would be angry if their home was destroyed. After the crew left, the old man was asked if ancestors really lived in the tree? His response was that the story was just to frighten the crew.

local institutions

Apart from some responsibility for enforcement of regulations promulgated at higher levels of government, post-Independence local institutions have also created a diverse range of controls over the exploitation of forest resources (Clarke and Matose, 1992 6-7; Nhira and Fortmann, 1991, Campbell and Grundy, 1991 36, Wilson, 1987 12)

These regulations vary between areas in some cases a total ban on the cutting of live wood has been imposed⁶⁹, although written permission to cut can still be obtained⁷⁰ (McGregor, 1991 308-9, pers obs). In another site I was told that no permission was required prior to cutting as long as the artisan concerned stayed in his 'area' although it was not completely clear what the boundaries of his area were⁷¹. Through my conversations with artisans it became apparent that the process whereby communities attempt to assert exclusive rights to woodlands is among the resource management issues of most concern to craftsmen. Two artisans reported having to negotiate with political leaders in neighbouring communities to obtain wood. One said he has problems because people are "jealous" though he is mainly successful in getting permission; the other craftsman who is running out of the "very specific trees" he needs, has had problems in his negotiations with headmen and VIDCOs to the point

⁶⁹ Some of these bans appear to originate at the district level, others much more locally (McGregor, 1991 308, Wilson, 1990 in Campbell and Grundy, 1991 36)

⁷⁰ The craftsman I spoke to reported a somewhat bureaucratic, costly route to obtaining written permission for tree cutting. Not only did his application have to pass through four levels of approval but he had to pay out approximately Z\$200 in bribes to obtain a Z\$5 cutting license

⁷¹ Although the number of cases is too small for any definite conclusions, there appeared to be a greater attempt at regulating tree cutting in the more deforested parts of the study area

where he has been refused permission to cut trees

With the weakening influence of traditional leaders in some areas of Zimbabwe has come a decline in the strength of sacred controls over trees and woodland resources. However, where these controls provide benefits to the community at large they have persisted, albeit with a somewhat different rationale to support their enforcement; in some cases controls have been given extra weight through the power of the state (McGregor, 1991:319). Furthermore, pragmatic controls and, to a lesser extent, some aspects of the social contract, remain effective in managing trees and woodland resources⁷² (Nhira and Fortmann, 1991:13). The continued existence of certain local resource management systems is clearly demonstrated by the manner in which most fruit trees are left standing even in heavily deforested areas⁷³ (Campbell and du Toit, 1988:339). When there is an urgent need for wood, fruit trees will likely be pruned rather than cut down completely⁷⁴ (McGregor, 1991:298) and with the *Mupfura* (*Sclerocarya birrea*) which produces a valuable fruit, it is the non-fruiting males that are predominantly cut for the species' useful timber (Wilson, 1987:38-9; Gumbo *et al.*,

⁷² Nhira and Fortmann (1991) provide data from seven different locations around Zimbabwe supporting a view of weakening sacred controls, strong pragmatic controls and variable strength in the social contract with regard to woodland resources

⁷³ In contrast, there is some evidence that prohibitions on cutting non-fruit sacred trees - either individual specimens or part of a larger stand - may be more commonly ignored (McGregor, 1991:297, Nhira and Fortmann, 1991:17-20, Campbell and Grundy, 1991:39)

⁷⁴ Although as Nhira and Fortmann (1991:56) point out, some fruit tree species might be cut because they are particularly good for making crafts from. Indeed, one of the artisans told me he cut *mutohwe* (*Azanza garckeana*) to use in making spoons even though he knows he is not supposed to because it is a valuable fruit tree

1990:207-10) Locally-created controls on tree cutting mean that even in Zimbabwe's more deforested CAs, favoured fruit species have remained more or less constant in terms of canopy cover relative to the original woodland (Campbell, 1987:378-9)

The above example of the selective retention of indigenous fruit trees during land clearance and afterwards, contradicts the perception underlying much state legislation and current policy discussion in Zimbabwe that the situation in the communal woodlands is one of "unregulated individualistic competition" leading to widespread forest destruction (World Bank, 1990 in Scoones and Matose, 1992:18) In fact, woodland use is more a case of common property management⁷⁵, although aspects of private tenure - where individuals have annexed woodland adjacent to their plots - and open access use⁷⁶ are also present to varying degrees (Fortmann and Nabane, 1992:8, Nhira and Fortmann, 1991:20-1, Campbell and Grundy, 1991:39, Scoones and Matose, 1992:26) Unfortunately, common property management regimes have been undermined by the very interventions of successive governments that sought to 'protect' woodlands from rural people (*ibid* 26,49) Existing legislation, based as it is

⁷⁵ A common property management system is characterised by

- no individual has exclusive rights to the resource,
- there are functioning membership criteria,
- guidelines for resource use are communally defined,
- group members have secure future access to the resource,
- an enforcement mechanism exists to punish violators (Swallow, 1989, Bromley and Cernea, 1989, Swallow and Bromley, 1992 in Scoones and Matose, 1992:26)

⁷⁶ Open access use is a particular problem in the Resettlement Areas (RAs) where, because the immigrants come from a wide variety of backgrounds, authority structures are weak and exclusion rules practically unenforceable. The result is that RA resources essentially are open to anyone (Scoones and Matose, 1992:20, Nhira and Fortmann, 1991:55, McGregor, 1991:313)

on "long standing conventions, questionable scientific truisms and parochial natural resource interests" is clearly in urgent need of review (Moyo *et al.*, 1991:132).

3.6 SUMMARY

This chapter has shown how outsiders' perspectives of the environment and the African population's place within it has had a major influence on policies effecting the use of trees in Zimbabwe's CAs. Outsiders' perceptions of a woodfuel 'crisis' in the rural areas led to an attempt to 'solve' a problem that in effect does not exist in the form perceived by planners. Furthermore, the supposed impact of the woodfuel crisis - widespread deforestation - has much less to do with fuelwood use than with inherited patterns of land allocation which have placed a serious strain on land resources within the CAs. Although no longer explicitly based on the colonial argument for 'modernization', forestry programmes in Independent Zimbabwe have continued to be driven by many of the same ideological influences. In much the same way, natural resource legislation of the same period, based on a perception that resources must be protected *from* people, was adopted at Independence with little change. Effective local management of woodland resources has in fact been undercut by policies based on the erroneous assumption that resource use in the CAs is unregulated.

CHAPTER 4

FORESTRY POLICY IN PRACTICE: ZIMBABWE'S RURAL AFFORESTATION PROJECT

4.1 INTRODUCTION

This chapter continues the discussion of the underlying factors influencing forestry planning by focussing on Zimbabwe's Rural Afforestation Project (RAP). The RAP is argued to be an example of a technical planning approach where priorities are established by outsiders and the resulting plans 'sold' to local people through extension. The technical planning approach has tended to obscure the issues of greatest concern to the rural people targeted for development. Based on a development model which emphasizes the transfer of externally-developed packages and grounded in the ideology of "rural dweller inferiority" (Clarke, 1991b: 10), such programmes promote a simplistic, reductionist view of rural development. A fixation on the part of many planners working in forestry/agroforestry for more technical packages *for* farmers, ignores the host of tree-based activities already undertaken *by* farmers. In fact, rural people are already heavily involved in tree growing, often with minimal external support. Farmers' priorities in tree growing, including the provision of income, have not been adequately integrated into current extension models and, it will be argued, could be integrated only with difficulty. The complexity and diversity

of rural people's tree growing and management activities are not compatible with the current reliance in forestry extension on standardised technical packages.

4.2 THE IMPACT OF THE RURAL AFFORESTATION PROJECT

Assessing the impact of the RAP in Zimbabwe's CAs can only be done in general terms. Follow-up work within the project to gauge the effectiveness of project interventions has been minimal⁷⁷ (Deweese, 1992:48; Campbell and Grundy, 1991:86; World Bank, 1991:13). Nevertheless, by examining Project goals, some comments can be made on how the RAP met these goals and how these approaches meshed with strategies followed by rural people in meeting their tree-based needs.

The objectives of the RAP were to:

- (i) develop people's awareness of the need for afforestation and to encourage farmers (particularly in CAs) to participate in tree planting;
- (ii) increase supplies of fuelwood and poles, conserve indigenous wood resources, bring about the more efficient use of wood as fuel and as building materials, and to arrest the physical deterioration of the CAs;
- (iii) promote tree planting and management as an integral part of farm activities, including the raising of livestock (World Bank, 1991:4).

The first objective is difficult to assess, based as it is on an erroneous perception of the situation in the rural areas. As the Bank's own appraisal report states:

⁷⁷ The World Bank's Project Completion Report (1991:13) identified the failure to implement effective procedures for monitoring and evaluating various Project elements as "one of the most significant failings of the Project".

in common with Bank experience elsewhere, there remains a tendency in both Bank and Government approaches to rural forestry strategies to underestimate the extent to which local communities and small farmers are already aware of the need for protection of indigenous woodlands and are spontaneously taking up tree planting (World Bank, 1991 v)

Although rural dwellers may not perceive the need for afforestation in the manner envisaged by the RAP, there is every reason to suggest they are aware of the need to maintain trees in the landscape. Local management strategies for indigenous woodland are in place and functioning in many areas, although in some cases their effectiveness has been reduced due to factors such as government interference. Judging from the presence of numerous species and numbers of exotic fruit trees around farm homesteads (at least in the three CAs that make up the study area), rural people have long engaged in tree planting practices even if most of the planting was not done to meet the 'needs' defined by the Project.

The educational component of the Project, implicit in the first and third objectives outlined above, met with mixed success. On the one hand, apart from their primary role of producing seedlings, nurseries developed as part of the RAP served as effective centres for training activities (Deweese, 1992:49). More than 10,000 members of women's groups, farmer clubs and youth groups, along with teachers and extension officers from various government departments participated in the hundreds of courses on nursery management and afforestation conducted over the six year course of the Project (World Bank, 1991:10,45-6). Obviously without any feedback from participants assessing the usefulness of the information imparted and without

knowledge of course contents, it is difficult to comment with certainty on the effectiveness of this aspect of the programme. However, given the evidence that rural people actively modify and adapt information and packages to their own needs (Chambers *et al.*, 1989), there is room for optimism that the courses provided some ideas for people wishing to establish their own nurseries with a mix of species of their choice⁷⁸.

The development of the other educational aspects of the Project provides less room for optimism. The intention of Project planners was to develop "appropriate extension messages" to be disseminated by the Project in collaboration with AGRITEX⁷⁹ (World Bank, 1991:11). Unfortunately, a host of institutional and organizational factors combined to reduce the opportunity for an 'appropriate' extension programme to be developed

In order to understand the difficulties encountered in the establishment and execution of the RAP, it is essential that the institutional basis of the Forestry Commission (FC) of Zimbabwe, as the implementing agency for the project, be examined. The FC was

⁷⁸ Given the focus of the RAP on eucalypts, it seems likely that the focus in both the nursery management and afforestation courses would also be on that species. The degree of usefulness of such information for raising and rearing other exotic species or indigenous trees is unknown but there appears to already be an understanding of the requirements for raising primarily exotic fruit trees among some rural people.

⁷⁹ AGRITEX (Agricultural, Technical and Extension Services) is the government department primarily responsible for providing on-farm agricultural extension services to farmers regardless of tenure type; *ie.* AGRITEX provides services to the CAs and the large scale commercial farms alike (Moyo *et al.*, 1991:100-01).

established as a parastatal organization in 1954 by the colonial government chiefly to manage industrial timber operations. Most of the FC's activities have centred on producing commercial timber on state land, largely in the form of exotic plantations, as well as managing and protecting indigenous forests under its control (Casey and Muir, 1988:2, World Bank, 1991 iii,3). At Independence, as part of the Government of Zimbabwe's emphasis on development in the CAs, the FC was expected to transform itself from solely a commercial enterprise into a developmental organization as well. The transition was a difficult one, many of the institutional problems encountered during the implementation of the RAP

were clearly the outcome of the racial and professional integration of an institution which, before Independence, had been predominantly European and oriented towards commercial forestry (*ibid* 3)

Those working within the FC on the RAP were generally accorded lower status within the organization, reflected by lower wages, less opportunity for advancement and a decline in staff morale (*ibid*). The FC clearly retained a bias towards production forestry⁸⁰, which, given its background and the experience of other national forestry organizations in the South, is not unexpected (Casey and Muir, 1987:33)

At the time the RAP was implemented, the FC was without a suitable extension programme for the educational component of the Project, the intention was that AGRITEX would incorporate information on planting, maintenance and cropping of

⁸⁰ It can be argued that this bias is reflected in the type of rural forestry programmes supported by state forestry departments such as the FC. As O'Keefe and Munslow (1988:5) argue 'community forestry' programmes such as the RAP, are "simply a scaled-down version of the conventional monocultural approach from forestry plantations"

trees as part of on-farm extension (Mugabe and Taguta, 1985 in Arnold, 1990 13, Casey and Muir, 1986 4-5). Although the model for tree planting envisaged in the RAP is perhaps not as strong an integration of trees in the farm system as Casey and Muir (1987 35) suggest⁸¹, the intention was nominally to integrate tree planting with other farm activities. Given the emphasis on commercial forestry in the training of most foresters, few have an understanding of the social dynamics within rural communities (Casey and Muir, 1988 9). Furthermore, foresters have traditionally lacked an understanding or appreciation of the role of trees within the farm system (Makoni, 1990 29). The lack of experience and "complete reorientation" that would be involved for the FC to mount an effective extension programme for 'social forestry' led to the logical decision to involve AGRITEX⁸² in the Project (*ibid* 2).

Apprehension over the extension approach began to be voiced by the FC during the latter stages of the planning process. The FC was concerned that AGRITEX would not adequately promote tree planting during extension visits but would instead concentrate on the purely agricultural aspect of its mandate (World Bank, 1991:6). To what extent this concern was accurate is not addressed further in the literature; however, the debate suggests interesting parallels with pre-independence institutional

⁸¹ Casey and Muir (1987 35) argue that "the planting of trees on farms is not fundamentally a forestry issue, it is a farm system and social issue". I would suggest that the dominant form of planting promoted under the RAP - woodlots of Eucalyptus is to a great degree an attempt to promote a forestry model at the farm level. Other forms of on-farm tree planting much more accurately reflect Casey and Muir's arguments.

⁸² Without the resources available from the RAP it seems unlikely AGRITEX could develop its own social forestry extension programme; however, AGRITEX has had an agroforestry specialist at its Head Office since the late 1980s (Casey and Muir, 1986 5. Wilson, 1989 375).

conflicts. As was the case prior to Independence, agricultural extension remained hostile towards the presence of trees in arable land at least into the early 1980s and possibly beyond⁸³. Attempts to integrate trees into farm systems will often face the problem of an "administrative gap" as programmes uneasily straddle the forestry and agricultural sectors (O'Keefe and Munslow, 1988:9).

Quite simply, the forestry administration does not *like* people. The very sector that could provide intervention, namely agriculture, is one that does not *like* or *know* trees. The administrative 'gap' is probably the most significant constraint on programme development in Southern Africa [emphasis in original](*ibid*).

While the preceding generalizations are quite sweeping, they are not without foundation. For forestry departments like the FC, a major concern has been to 'protect' designated forests or woodlands 'from' rural people, as already stated, agricultural extension, when not indifferent to trees, has been hostile to their presence. Whatever the roots of the conflict between the FC and AGRITEX⁸⁴, the final result was that planned collaboration on developing and extending the Project's extension message did not occur, leaving the FC to establish its own small extension unit (World Bank,

⁸³ There is some confusion as to when and to what degree the message that farmers should remove trees from fields has been revised by extension officers. Clarke (1991b:8) claims the official policy towards trees in fields was changed soon after Independence, while other observers (Wilson, 1989:375; Kamau, 1989:54) note it was still present or had only recently been altered in the late 1980s. Campbell *et al* (1991a:107) and Nhira and Fortmann (1991:8) suggest the hostility towards trees on the part of agricultural extensionists was still in existence very recently. It seems possible that while *official* policy may have been changed, disseminating such information to field officers may not have had a high priority and, as Clarke (1991b:8) notes, the extension system currently in place is "very inflexible inherently slow to respond to changing circumstances and needs".

⁸⁴ The World Bank (1991:9) blamed the failure on "inadequate resources allocated for the work" and the "lack of clearly defined guidelines for collaboration". In the same document, the Government of Zimbabwe mentions problems of "weak institutional communications and collaboration and at times resistance from key government departments" (*ibid*:20).

1991:11) Forestry extension through the period of the RAP remained inadequate (Casey and Muir, 1986:5), supporting the view of the World Bank (1991:v) that "a well defined extension programme should have been in place before a rural forestry ... programme was implemented" Even by the modest and very traditional expectations for extension within the RAP, this aspect of the Project can be considered more or less a failure

The second objective of the Project, to increase woodfuel and pole supplies in the hopes of arresting deforestation in the CAs, was to be accomplished through a combination of centralised nursery establishment, the planting of urban and rural block plantations and the creation of a support fund to encourage rural people to start nurseries or woodlots (World Bank, 1991:iii-iv,4-5, Casey and Muir, 1988:3). The provision of seedlings to farmers was a major aspect of the RAP. In terms of meeting its goals, the nursery programme can be deemed successful: during the project period 79 rural nurseries were established, well beyond the 48 planned, and seedling production targets were ultimately attained (*ibid.*; World Bank, 1991:9). Over the six years beginning in 1983 that the Project was in place, about 13 million seedlings were distributed, 10 million of the seedlings were sold and the remainder were given away or used for demonstration purposes (World Bank, 1990:9-10; Campbell *et al.*, N.D.:2). Apart from the successful attainment of production goals, the nursery and tree distribution component of the RAP can be critiqued on two aspects in particular: the type of seedlings grown and the high cost of production.

As noted earlier, RAP nursery production was focused on Eucalyptus species in spite of observations that rural people were interested in a range of tree species and types. Recommendations to expand the range of species and potential approaches to tree planting within the Project were never implemented (World Bank, 1991 5,12,15). The Baseline survey, as already noted completed after the initiation of the Project, found that tree planting by farmers is in fact a common practice. Fruit trees were overwhelmingly the species of choice for farmers, followed by trees that provide building poles, the provision of fuelwood is a relatively minor factor in people's decision to plant trees (*ibid.* 12,14, du Toit *et al.*, 1984 99,109,111,119). There seems little question that if the nursery programme had made an attempt at eliciting rural people's priorities for tree planting, a much wider choice of species for production would have been indicated⁸⁵.

Numerous criticisms have been levelled at the choice of Eucalyptus for woodlot programmes

- 1) Eucalyptus tends to grow poorly in conditions of low rainfall and limited fertility soils found in many of the CAs⁸⁶ and is also quite vulnerable to termite damage (Haugen, 1987 in Leach and Mearns, 1988.135, Bradley, 1990.23, Clarke, 1991b:2),

⁸⁵ From the Government of Zimbabwe's perspective, the emphasis on centralized nursery and seedling production in Project design had an 'alienating' effect on farmers (World Bank, 1991 19)

⁸⁶ The Baseline Survey (du Toit *et al.*, 1984 119) stressed the importance of promoting a variety of trees as part of the RAP due to "the certainty that survival rates of eucalypt plantings will be low in the drier and more degraded [CAs]"

- 2) Eucalyptus is considered a poor quality fuel because it burns too fast, does not produce good coals and the copious smoke imparts an unpleasant flavour to food⁸⁷ (*ibid.*; McGregor, 1991:243); and
- 3) a number of detrimental effects of the growing trees have been reported, including competition with crops stemming from high demands on soil moisture and fertility and allelopathic effects leading to inhibition in the understorey of useful grasses, herbs and perhaps mushrooms (*ibid.*:243-4, Bradley, 1990:23, pers. comm., Natural Resources Officer)

While arguments have been made for Eucalyptus planting as a strategy to control erosion, the opposite may be true. Spicer (pers. comm. in Campbell and Grundy, 1991:63) notes that the initial establishment of Eucalyptus woodlots can result in increased erosion due to the large area of exposed soil that results during land preparation.

Although the preceding arguments might be taken as suggesting Eucalyptus have no redeeming value in the rural context, the species is popular with farmers for certain uses. As Dewees (1992:48) notes, "it would be unfair to suggest that farmers don't

⁸⁷ The survey by Attwell *et al.* (1989:46) on patterns of fuelwood utilisation found 80% of surveyed households felt Eucalyptus wood "was unsuitable for cooking purposes" even though a much lower percentage actually had experience with the species. Based on the response of some households in relatively deforested areas who say they use 'any available species' for cooking and heating, it has been suggested that the unpopularity of gums for cooking is not necessarily a major problem as households facing fuel shortages will ultimately turn to Eucalyptus for fuel (Campbell and du Toit, 1988:339). I would suggest this is a problematic argument: does 'any available species' necessarily include Eucalyptus, or does it refer to any available *indigenous* species? It would appear Eucalyptus was not on the list of possible fuel species although it was commonly used for construction (*ibid.*:337). In the end the question must be asked, why concentrate on a species for fuel that rural people - the 'user group' in question - do not want?

want Eucalyptus" since prior to the RAP, 11% of farmers said they had purchased gum seedlings from private sources. Unlike fuelwood, where introduced species are generally considered a distant second choice to indigenous fuels, exotics are quite popular for use as construction poles and may even be used by households in still relatively well-wooded areas (Campbell and du Toit, 1988:336). The most common exotic species, Eucalyptus, has long straight poles which are highly valued and "preferred for modern homes" in rural areas (Bradley, 1990:17, McGregor, 1991:214).

Those farmers who did plant Eucalyptus woodlots for poles took a different approach than the woodlot model promoted under the RAP. In contrast to the average of 750 trees planners envisaged each farmer planting, most farmers planted ten or fewer trees (du Toit *et al.*, 1984:103, Casey and Muir, 1988:4). While farmer behaviour in this case may be indicative of certain constraints such as on land and/or labour, or simply a decision that a small woodlot was adequate for household needs, it may also be that farmers were undertaking experiments with woodlots to assess how they fit into the farm system, a form of investigative behaviour acknowledged to be practiced by farmers everywhere⁶⁸ (Rhoades, 1989, Rocheleau *et al.*, 1989, IDS Workshop, 1989b, Bunch, 1989, Box, 1989).

⁶⁸ As Juma (1987, in IDS Workshop, 1989b:34) puts it "a farmer is a person who experiments constantly because he [*sic.*] is constantly moving into the unknown". The reason I draw attention to the small size of the woodlots as possibly indicative of an experimental approach by farmers, is that there is considerable evidence that farmers undertake small-scale trials of new plant materials, often in homegardens, before committing themselves to more widespread planting (Ninez, 1984:9-11).

With the information available it is impossible to assess with certainty the effect that the RAP has had or will have on one of the priority areas for the Project - deforestation within the CAs. Because, unlike fuelwood, most construction wood is cut live (Campbell and Grundy, 1991:42), the provision of a desirable construction species like Eucalyptus could conceivably have the effect of reducing such harvesting from the indigenous woodland. Of considerable interest within such a process, however, would be to what extent a recycling of Eucalyptus construction wood as fuelwood would occur. Would the considerable convenience of using what has been a 'traditional' source of fuel - old poles, fences and the like - outweigh problems associated with the burning qualities of Eucalyptus? If not, would the effect be to increase live cutting of trees for fuelwood? Only a programme of further research could provide an indication of the implications of increased use of Eucalyptus in this manner.

Much has been written on the high cost of the subsidies which are an important part of the RAP. Seedling sales in particular have been heavily subsidised: production costs per Eucalyptus seedling were Z\$0.41 when nursery overheads were included, but seedlings were sold for between Z\$0.03 and Z\$0.05 each (Campbell *et al.*, N.D.:2; World Bank, 1991 in Campbell and Grundy, 1991:85). For those farmers interested in and able to take advantage of the trees produced through the RAP, the subsidies available are large. Dewees (1992:49) estimates that for every hectare of trees planted by farmers, they received a subsidy of Z\$847 which, in his opinion, should raise "equity and distribution concerns". The high cost of the nursery programme raised

questions as to its sustainability and in recent years this aspect of the RAP has been de-emphasized in favour of increased support to smaller, dispersed nurseries producing a wider range of species (World Bank, 1991:12). In recent years seedling subsidies have begun to be phased out resulting in price increases to Z\$0.25 per seedling (Campbell *et al.*, N.D.:2). It is anticipated that subsidies will continue to be reduced as the country continues through its Economic Structural Adjustment Programme (Campbell and Grundy, 1991:85).

The experience of the Project seems to justify support for decentralized nurseries run by groups other than the FC. Woodlots established with trees grown by farmers or schools provided with support funds through the RAP cost only about one-third of those planted with FC nursery stock (World Bank, 1991:v). In fact, Casey and Muir (1986:13) claim 89 schools in Masvingo Province produced 85,000 seedlings in one year at a tenth of the cost of seedlings produced in Project nurseries⁸⁹. The top-down approach of centralized nursery establishment and the lack of consultation and investigation prior to initiation that was the hallmark of the RAP, resulted in a system that failed to take full advantage of an already well-established rural nursery network run by a variety of groups (Casey and Muir, 1988:5). Building on the system already in place might not only have been more cost-effective (*ibid.*) but it may also have reflected more closely, by way of the types of trees produced, issues of relevance to rural people.

⁸⁹ School tree nurseries also have the potential positive spin-off of students taking away tree raising skills to employ on their own farms.

Although the planting of rural and urban block plantations to provide woodfuel had initially been advised against because woodfuel markets were poorly understood, the World Bank appraisal mission chose to overlook concerns and include plantations in the Project (World Bank, 1991:14). The circumstances surrounding efforts to establish these plantations provide a further example of the previously discussed lack of 'institutional memory' regarding attempts at rural development in Zimbabwe. Once again government officials were planning to clear 'useless brush' to plant superior exotics. As was the case during the colonial period, local people did not share the view of forestry planners and effectively opposed the clearance of indigenous forests and their replacement with Eucalyptus. Of the plantation target of 1050 hectares, only 188 were planted "because of strong opposition by local people" (World Bank, 1991:10). It is interesting that in the Project Completion Report, no mention is made of *why* local people resisted forest clearance. Instead the only comment is that "doubts were raised about the financial viability of this component" (*ibid.*). Nothing is said regarding rural peoples' priorities or why they would prefer indigenous forest to a stand of Eucalyptus trees. As Bradley (1992:9) notes "there seems to be little recognition of [the value of woodlands to small farmer livelihoods] within land use planning agencies". This is indicated by the RAP Completion Report even after the experiences with local resistance to plantation establishment.

Economic justification for the RAP was based on the benefits of fuelwood production *versus* the alternative cost of using coal (World Bank, 1991:16). It is now widely

accepted that the rates of return estimated for the Project were unrealistic and, certainly in terms of fuelwood provision, "returns to Eucalyptus production are consistently negative" (Deweese, 1992:50). O'Keefe and Munslow (1988:3), assessing conventional interventions such as the RAP in fuelwood supply, note the high cost of these forestry programmes: "in many cases it would be cheaper to import kerosene than to go ahead with [these] initiatives". Information on the market for woodfuel and poles in Project areas was virtually non-existent prior to implementation of the RAP and it became clear over the course of the Project that rural people rarely turn to the market to meet their woodfuel needs⁹⁰ (World Bank, 1991:v). Farmers who established woodlots appeared much more interested in harvesting Eucalyptus for construction poles than for fuel⁹¹ (Casey and Muir, 1988:4). As discussed earlier, Eucalyptus is quite popular for building purposes. Therefore, while the RAP might be said to have failed in its intention of providing abundant fuelwood, it has been more successful in providing useable wood for construction, albeit at a high cost⁹².

⁹⁰ Information on woodfuel markets in Zimbabwe can be found in section 7.3. While Casey and Muir (1988:4) argue that there is also "a limited demand in [the CAs]" for construction poles, as discussed in section 7.4, nearly a quarter of the households in some parts of the country purchase these poles.

⁹¹ Studies from India, Malawi, Costa Rica and Haiti also indicate that the harvesting of so-called fuelwood trees for construction poles is in fact a common practice (Godoy, 1992:716).

⁹² Deweese (1989:1169) makes the point that planners are often criticised when rural people take project outputs and use them in a manner somewhat or completely different than intended in project design. An alternative interpretation is that farmers are making a rational choice given the conditions they face. Using the fuelwood versus poles example, Deweese states: "the point is, from the farmer's perspective, building poles make much more sense. No one thought to ask if there were rural housing shortages".

The fixation on and exaggeration of a woodfuel and deforestation 'crisis' during the past decade led to inappropriate policies and programmes that not only had limited success in meeting biomass supply and environmental goals, but also served to divert attention and resources from programmes which could have done much more in the area of improved livelihoods and environmental sustainability (Scoones and Matose, 1992:5, Leach and Mearns, 1988:7-8; Arnold, N.D.:1). Simplistic approaches, such as the widespread planting of exotic woodlots, based on externally perceived 'needs' "invariably [ignore] the biological, social, cultural and economic environments of the intended beneficiaries" (Katerere, 1986:125). Eucalyptus, as one part of a broad approach, can play a useful role in tree planting in the rural areas. However, establishing it as the major component in Zimbabwe's rural forestry extension programme has been a serious error in judgement as gums will never meet more than a fraction of people's tree-related needs (Bradley, 1990:24; Chidari *et al.*, 1992:113). Furthermore, focussing on trees primarily as a source of energy without gaining an understanding of how trees function within the farm system, serves to obscure the vital and diverse role trees play in rural livelihoods.

People's primary needs from trees are often construction timber, food, medicines, tools, fodder for their cattle, shade around the home and a hundred and one other uses. Quite simply, fuelwood is what is left over [emphasis in original] (O'Keefe and Munslow, 1988:1).

Even in the face of extensive research promoting alternative models for supporting tree

planting by rural people⁹³, Eucalyptus woodlots remain an important focus for forestry extension in Zimbabwe⁹⁴ (McGregor, 1991:68, Scoones and Matose, 1992:11, Campbell and Grundy, 1991:57). In spite of the evidence suggesting its dominant position in past forestry programmes was misguided, Eucalyptus continues to enjoy favour among forestry planners. Dewees (1992:51) notes

it is disturbing that the [FC], as well as other organizations with responsibility for forestry extension continue to promote Eucalyptus to CA farmers as a generally high cost/low return option. Precisely why this has been the case is unclear, though McGregor (1991) suggests that Eucalyptus has been so firmly tied to the 'ideology of modernization' in Zimbabwe so as to limit the ability of institutions to respond to the real needs of rural people.

Therefore, it is not merely a case as Arnold (N.D.:1) argues, of project design being based on inadequate information about the farm system and the place of trees within that system, instead the research used to develop programming is, in a sense, filtered through an ideological screen to 'fit' with the perspectives held by planners. The ideological basis for much of this planning is the belief in the superiority of Northern technical planning over the management practices of rural people. Once again, the carry-over between Rhodesia and Zimbabwe of the justifications used for programmes and policies is clearly apparent. Drinkwater (1989:292), speaking of 1920s Rhodesia argues

a crucial element in the reasoning of the colonial authorities in the lead

⁹³ As Clarke (1991b:2) notes, the evidence also shows that "woodlot programmes [have generally been] expensive failures throughout Africa"

⁹⁴ The promotion of Eucalyptus planting to farmers in the CAs remains an important focus in the second phase of the World Bank funded RAP (World Bank, 1990; in Campbell and Grundy, 1991:52; Scoones and Matose, 1992:11)

up to and implementation of technical development policies, was that the African peoples did not know what their 'real' interests were. Without government direction, through feckless and ignorant practices they would destroy their environment

The comments above can be compared to those of Clarke (1991b.10):

the 'ideology of native inferiority' has become thoroughly entrenched in the current pedagogy, although its form has changed slightly to one of 'rural dweller inferiority'. Attitudes which portray rural people as backward, ignorant, incapable of making rational decisions and engaged in willfully destroying their environment are still very prevalent amongst urban educated elites in post independent Zimbabwe.

The structures supporting the dominant development paradigm of the superiority and indeed necessity of Northern technical planning are clearly very durable. But how is it that this model for development is able to maintain its position and what are the practical implications of such a process?

4.3 'NORMAL PROFESSIONALISM' AND TECHNICAL EXTENSION IN ZIMBABWE

The RAP is a recent manifestation of an approach to rural planning that has a long history in Zimbabwe, that of the 'technical plan' first initiated during the late 1920s. Among the main policies introduced under the guise of technical planning, the centralisation policy already described was perhaps the longest lived (Scoones and Matose, 1992 54, Drinkwater, 1989:287). Clearly, the model underlying these various programmes has proven to be extremely persistent. A few factors underlie the strong continuities in both approaches to development planning and state policies. At the

time of Zimbabwe's independence, state institutions with their long tradition of centralised planning were handed over essentially intact to the new government (Clarke, 1991b 9) Those who work for these institutions "are trained and socialised into the language of goals, policies, programmes and plans" tending to accept that the most rational approach to development in the CAs is through the imposition of externally created plans (Drinkwater, 1989 288)

The process of socialisation in these bureaucracies is a clear example of what Chambers (1988a.4) describes as 'normal professionalism' "the thinking, values, methods and behaviour dominant in a profession or discipline" Closely associated with normal professionalism is 'first thinking' where the focus for planning and interventions in a host of development issues, including the environment and resources, is driven by the interests and concerns of outsiders (*ibid* 4-6). Within this viewpoint, attention is generally focussed first on 'things', for example the environment, woodfuel, deforestation and trees, while

people come later, if at all, and often as residuals and problems after technical solutions have been sought and found to physical problems (*ibid* 7)

The RAP is a prime example of normal professionalism and first thinking In this case, an externally determined 'crisis' in the supply of woodfuel, associated with apparently uncontrolled forest clearance to meet fuel needs was to be 'solved' by a technical programme to increase the supply of wood Apart from having 'caused' the

'problem'/'crisis' in the first place, rural people had to be educated first, that there was a crisis and, second, to take up the model of Eucalyptus woodlots being proposed as the technical solution⁴

The approach to promoting technical plans such as the RAP which originate from a centralized planning structure, is, not surprisingly, a direct result of the process by which these plans are created. Normal professionalism stresses the superiority of Northern modern science and the knowledge it creates, this superior knowledge, created 'at the centre' must somehow be translated and diffused to those groups that are 'targeted' to carry out the plans (Chambers and Jiggins, 1986:4-5,13). The conventional method for diffusing this knowledge is known as the 'transfer-of-technology' (TOT) approach to development. With TOT, priorities for research are derived from the concerns and interests of outsiders such as scientists, planners or other interested parties, but, most importantly, only rarely the supposed 'clients'. Outsiders then develop technical plans, plant varieties, methods and so on which are to be diffused to the target group by extensionists (Chambers, 1989:181-2). The emphasis on the top-down diffusion of knowledge suggests that normal professionalism and the TOT model of extension are closely linked (Chambers and Jiggins, 1986:6)

⁴ Objective one of the RAP listed earlier is concerned with the "campaign to increase public awareness of the fuelwood problem" (World Bank, 1991:4). In the minority of cases where local people do see a fuelwood 'problem' it appears they perceive the problem and its solutions in a considerably different manner than do external planners

Considerable optimism has surrounded the TOT model in the past with the World Bank's version of TOT, the Training and Visit system, being described as "one of the most acclaimed solutions to the problems of agricultural development"⁹⁶ (Stamp, 1990 153). The optimism expressed for this model of extension is partly structured on the belief that there is actually an abundance of technological solutions to development problems which can be passed on to client groups without the need for local adaptive research (Horton, 1984 47). Against this backdrop of unbridled enthusiasm is the reality of 'poor adoption' of these extension messages by the majority of farmers operating within what has been described as 'Third' or 'CDR' agriculture"⁹⁷ characterized as complex, diverse and risk-prone. CDR agriculture tends to be rain-fed and reliant on fragile and/or degraded soils and on a variety of microenvironments (Chambers *et al*, 1989 xvi,xviii, Chambers, 1991 6), conditions which clearly describe the dominant agricultural system found in Zimbabwe's CAs.

Chambers and Jiggins (1986 1) contend that one of the positive outcomes of the World Bank's Training and Visit model of extension has been to demonstrate the real shortage of technology adaptable to the needs and constraints of resource-poor farming

⁹⁶ Although much of the discussion in the literature centres on extension in the context of agriculture, the arguments clearly hold true for a much broader range of issues

⁹⁷ 'First' agriculture is the industrial approach to farming which is dominant in countries of the North, based on high levels of inputs, capitalization and, in many cases, subsidies. 'Second' or green revolution agriculture is found in well-endowed areas of the South under conditions of reliable rainfall or irrigation and also employs significant inputs in the production of high-yielding varieties. Industrial and green revolution agriculture both operate under relatively simplified farming systems, tending towards monocultural production and the use of inputs to moderate the risk of crop failure (Chambers *et al*, 1989 xvi-xviii)

households operating within CDR agriculture. The reasons for this divergence between what extensionists are offering and what CDR farmers apparently need are, by now, relatively well-known. In contrast to the conditions found in industrial and Green Revolution agriculture which correspond relatively closely to conditions on research stations, resource-poor farmers (RPFs)⁹⁸ operate in considerably different physical, social and economic environments from those found on research stations or resource-rich farms (Chambers *et al*, 1989:xviii). Furthermore, the complexity which is the mark of most resource-poor farming discriminates against CDR agriculture in the research agenda

Methodologically, normal agricultural science is reductionist, excelling in exploring the relationships of a restricted number of variables in controlled conditions....[T]he reductionism which enables agricultural research to serve the simplified farming systems of resource-rich farmers at the same time has difficulty coming to terms with and serving the interactive complexity⁹⁹ of many resource-poor farming systems (Chambers and Jiggins, 1986:1-2).

RPFs, primarily because of environmental and credit constraints, do not have the option of isolating themselves from risk in the manner envisaged by standard agricultural research and extension approaches¹⁰⁰. Instead of adopting the standardised

⁹⁸ Apart from the physical characteristics of resource-limited or resource-poor farms already described under CDR agriculture, households operating under this system generally have limited access to purchased inputs and to credit, they often face seasonal shortages of cash and are mostly dependant on household labour which can be a constraint at peak times (Chambers and Ghildyal, 1985:7).

⁹⁹ The narrow, specialised approach of modern agricultural education also leaves little room for effective interaction with other disciplines (Conway, 1985:32-3), a problem of particular concern given the complex, multi-disciplinary nature of development issues

¹⁰⁰ Chambers (1989:186) explains the differences thus: in "industrial and Green Revolution agriculture, production has been raised through packages, with the environment managed and controlled to fit the genotype. The third agriculture, being complex, diverse and risk-prone, requires the reverse, with searches for genotypes to fit environments"

technological packages promoted by extensionists, these farmers rely on diversifying and, in a sense, complicating their activities to reach a level of stability with their farming systems¹⁰¹ (Chambers, 1991:6). Scientists on the other hand, if they have been educated from a syllabus based on industrial or Green Revolution agriculture, will be oriented towards inputs and monocropping systems in stark opposition to the apparent 'chaos' common to much small-scale agriculture in the South (Collinson, 1988:13).

Other pressures and motivations act to maintain the dominance of normal professionalism and the TOT approach, in turn limiting the potential for RPFs' concerns to enter the research agenda. For example, the differing value placed on various research activities generally serves to support the *status quo*, the demand for research of 'high scientific standard' by institutions or for inclusion in journals seems reasonable enough but in practice has served to maintain the hierarchical research structure. "Hence, the quest for conventionally defined scientific rigour comes at the expense of relevance" by serving to maintain the strict divisions between researchers 'above' and farmers 'below' (Horton, 1986:100-1). A further difficulty is that RPFs generally do not have the political influence of resource-rich farmers producing industrial or commonly marketed food crops. Relative to the scattered, diverse interests of RPFs, resource-rich farmers provide a fairly stable 'market' for

¹⁰¹ Farmers in Zimbabwe generally employ a land use system far more diverse than the officially recommended model and some of the practices have drawn criticism from extension workers, however, farmers cannot risk replacing their systems with the simplified model promoted by extensionists (Arnold, 1990:4, Nyamapfene, 1989:386)

conventional agricultural research and technology package development and are better able to sponsor or lobby for research to meet their needs (Chambers and Jiggins, 1986 2,5-6)

As part of the hierarchical approach inherent to normal professionalism, there are few opportunities for the interests and concerns of RPFs to reach the agenda of the centralized research structure. Again, education and training play a role here. The conventional approach stresses that learning is 'from above' and teaching 'to below' (Chambers and Jiggins, 1986:4). As Stamp (1990:153) points out, "recipients, as communities or individuals, are constructed by development discourse as subjects to be managed" reinforcing the top-down, centre-periphery model of knowledge creation. Farmers are viewed as passive 'adopters' of superior technologies. In theory, the 'clients' of the TOT model in our case RPFs, are able to participate in research by providing 'feedback' to scientists through the extension service. In practice, such participation is rare because effective mechanisms to facilitate this 'upward'¹⁰² flow of information from farmers to researchers or planners are generally lacking in the face of a model that promotes a one-way flow of information (Clarke, 1991b:8). As Chambers and Jiggins (1986:4) note: "agricultural science...is output-oriented rather than client-oriented; scientists develop the product and extension has to sell it". The normal professionalism which shapes the outlook of researchers and policy makers is

¹⁰² The language used in discussing the TOT model provides interesting clues to the philosophical outlook underlying it. As Stamp (1990:153) suggests, "researchers and policymakers should be more aware of the power relations and domination over local knowledge entrained in this logic of dissemination"

not restricted to them; extension workers

have been educated into [a] paradigm stressing the use of inputs. Simple feedback models, suggesting that extension will provide network-linkage [between farmers and researchers], are therefore likely to fail¹⁰³ (Box, 1989:67)

If RPFs and researchers as well as policy-makers are to come together to focus on issues of mutual concern, effective communication is obviously essential. A focus on models and 'network-linkages' to facilitate communication between the various groups can at times over-look an important constraint on this process: the social distance that exists between rural people and essentially urban-based policy-makers and researchers. Assumptions that 'mechanically sound' systems of communication will result in the satisfactory exchange of information ignore the key issue of the *quality* of that communication (Chambers, 1989:190). Outsiders' superior attitudes regarding the value of modern knowledge relative to the knowledge of rural people will not be conducive to a quality exchange of information. By the time they have completed their education, agricultural scientists have generally been strongly conditioned to view their knowledge as superior to farmers' (Chambers and Jiggins, 1986:4). Some professionals will "consider it demeaning to learn from and with farmers" especially resource-poor ones (IDS Workshop, 1989c:169). Urban-based professionals may feel

¹⁰³ Although it is important to note that those development practitioners who work at the local level, such as some extensionists, "have realised not only that [rural] people have a differently constructed view of reality from that presented by the state, but that their view has its own validity too" (Drinkwater, 1989:289). Local practitioners sharing such a view have the potential to act as potent intermediaries between rural people and the state planning structure, if they are also able to overcome their position low down in the development hierarchy (*ibid*:303-4; Chambers, 1991:6).

much more comfortable working with resource-rich farmers who, as Chambers and Jiggins (1986 1,5) point out, are likely to hold somewhat similar attitudes and values. As these farmers utilize products of conventional agricultural research, they in a sense validate the paradigm within which most scientists and policy-makers are operating. Researchers who venture out into the field with their normal professional biases often adopt a critical stance towards farmers that immediately creates barriers to understanding and communication on both sides. The minority of RPFs who express any interest in conventional agricultural packages tend to adapt extension advice to their own needs and may be viewed in a negative light as 'non-adopters' rather than as the experimenters they truly are (*ibid.*:20). As Chambers and Jiggins (1986:22) note, "power and status are sharply polarised between scientists and poor farmers." This relationship is not only expressed when scientists lecture rather than listen to farmers, but also when farmers react deferentially in their dealings with outsiders¹⁰⁴ (*ibid.*; Chambers, 1991:9) Chambers argues

the neglect of personal attitudes and behaviour has been a stunning oversight in rural development practice. Training, attitudinal change, skill acquisition, 'motivation' - all these have been for 'them', for rural people, more than for 'us', the professional elites (*ibid.*).

¹⁰⁴ Therefore, the inability and ignorance which outsiders sometimes use to label RPFs may largely be an "artifact of our self-validating attitudes and behaviour" (Chambers, 1991:9)

4.3.1 Responding to Criticism: Farming Systems Research

Simply put, normal professionalism and the first thinking which is associated with it, as well as the TOT model which supports and is supported by this paradigm, all work against serving the needs of CDR farmers. One reaction from within the agricultural development community to the recognised shortcomings of the TOT approach has been the development of Farming Systems Research (FSR)¹⁰⁵

FSR defines an approach which seeks to develop or generate agricultural technology within the context of the whole farm system, as distinct from reliance on interventions based on individual commodities or factors (Goodman, 1989:77-8).

Therefore, through FSR an attempt was being made to avoid the reductionism of normal agricultural research. Associated with the acknowledgement of the importance of the whole farm system, including biological, economic and human dimensions, is the need both to involve farmers in research and to learn from them (Farrington and Martin, 1988b:8, Chambers and Jiggins, 1986:10).

FSR has clearly been a significant improvement over the standard TOT model. An increased understanding of resource-poor farming systems has been achieved and agricultural research has to some degree been positively affected by shifting a portion of the experimental trials to the farm (*ibid* .10-11). However, while FSR has been a

¹⁰⁵ FSR primarily developed as a response to the failures of the green revolution which not only failed to improve the welfare of RPFs but also, it was argued, led to increased inequality in rural areas. Significant support for the development and promotion of FSR came from the international agricultural research centres and their major donors as a way of responding to certain aspects of the criticism (Davidson, 1987:70, Farrington and Martin, 1988b:17, Oasa and Swanson, 1986:8).

useful improvement over conventional research practice, it is essentially an adaptation of TOT more than a radical departure. As Davidson (1987:71) argues, FSR is essentially "a conservative or incrementalist approach to agricultural development" designed to function within the conventional TOT paradigm. In practice, the farmer's role in FSR has tended to be limited to the provision of land and labour, the creation of a 'control' plot through normal farming activities and finally, a reaction to the results of the experiment (Sumberg and Okali, 1989:110). While farmers' assessments of problems may be a starting point for research, farmers' experimental capacities are generally ignored and outsiders remain in control of deciding priorities, diagnosing and evaluating problems and prescribing solutions (Chambers and Jiggins, 1986:11,13). As with the conventional TOT approach, the focus in FSR has generally been to persuade farmers to adopt selected 'modern' techniques rather than to attempt to build on some of the successful practices farmers are already using (Nyamapfene, 1989:389).

Therefore, with FSR

the paradigm remains a centre-periphery model; knowledge production is centralised and hence knowledge has to be translated and diffused to the users on the periphery (*ibid* :13).

Some other criticisms of FSR as it has been practised¹⁰⁶ have centred on its high cost (Oasa and Swanson, 1986:18; Horton, 1986:101; Goodman, 1989:105; Farrington and Martin, 1988b:21), its tendency to focus attention on resource-rich farmers (Chambers and Jiggins, 1986:12), problems of effective collaboration between multidisciplinary teams - natural scientists have at times reacted negatively to what they see as an

¹⁰⁶ As Farrington and Martin (1988b:19) note, some of the criticisms levelled at FSR "relate more to the application of FSR than to the concepts involved"

'infringement' by social scientists in the research process (*ibid* 11, Farrington and Martin, 1988b:18) - and also the lack of acknowledgement of the importance of preparing researchers for effective communication with farmers¹⁰⁷ (*ibid* 19, Chambers and Jiggins, 1986:12). It has also been argued (Maxwell, 1986) that FSR has failed to take sufficient account of the fact that farming systems are dynamic and continually undergoing change.

A further failure of FSR - and one common to the TOT model which FSR grew out of - is that despite its supposed 'systems' focus, FSR fails to consider adequately the broader socioeconomic and political framework within which farm systems operate. Although FSR aims to acquire an understanding of the total farming system, in practice FSR generally fails to adequately conceptualize the connections between farm system and the world outside¹⁰⁸ (Biggs and Gibbon, 1986 in Farrington and Martin, 1988b:17). Part of this difficulty stems from the implicit technological determinism

¹⁰⁷ Chambers and Jiggins (1986:12) point out that although grasping the rationale behind farmers' decision-making is essential to gaining a clearer understanding of the farm system, "scientists based in commodity or disciplinary programmes typically display impatience with investigation of farmers' system constructs. Nor do they readily admit the need to make apparent to farmers the assumptions on which their own mental constructs are based, if a balanced dialogue is to take place"

¹⁰⁸ I must stress again the important difference between how FSR has been conceptualized and how it has been applied in practice. Maxwell (1986:69-70), as part of a review of the literature on 'determinants' of farming systems - the natural and socioeconomic factors that produce "a particular configuration of resource availability and factor use at the farm level" - lists what he calls 'exogenous socioeconomic factors', among them institutions, government policies and marketing structures, as among the important determinants for consideration in research on farming systems. However if, as seems to be the case, FSR in practice has failed to adequately conceptualize the connections between factors within and outside the farm-gate, the failure is then in the area of practice. As Chambers and Jiggins (1986:12) point out, "agricultural scientists, with their preference for the visual and substantial, are liable to undervalue or overlook aspects of farming systems which may be critical but small in cash value or volume, or which cannot be seen"

that is a feature of FSR. The failures of the Green Revolution, as perceived from within the international agricultural research centres and their largest donors, stemmed from the lack of the 'right' kind of technology for use by RPFs. Therefore, finding the 'right' technology should lead to production improvements (Oasa and Swanson, 1986:10). These improvements are anticipated to rise out of the introduction of new practices or technologies developed from the process of farmer-scientist cooperation.

Increases in production are thus conceived of as simply a matter of the judicious application of technology.... Initial factor distributions and the technical process of production are thus separated and treated as analytically different issues. [FSR] concentrates on the latter, on the grounds that development can take place without significant rural reform. In sum, this requires attention solely within the 'farm-gate' and effectively renders macro-level considerations of distribution and equity moot (Davidson, 1987:72).

Therefore, rather than concerning themselves with "the structural impediments of a particular political economy" researchers and development planners focus on technological factors as the key element needing to be altered to bring about desired changes (Oasa and Swanson, 1986:7).

Both Davidson (*ibid.*) and Oasa and Swanson (1986:11-12) point out an apparent reluctance to expand the debate to include structures of the macroenvironment which might be acting to constrain 'development' for RPFs. As has already been pointed out, FSR can be described as a conservative approach to agricultural development which seeks to improve production from within the prevailing institutional structure surrounding development (Davidson, 1987:71). Such an approach can be considered politically 'safe' as not only is there no requirement for change in the

macroenvironment implied but also FSR is viewed as complementary to traditional top-down development structures and therefore does not threaten the latter's position in the over-all hierarchy¹⁰⁹ (*ibid.*:72, Oasa and Swanson, 1986 11-12)

The assumption that increasing the production of a given commodity will lead directly to benefits for RPFs fails to provide a clear understanding of exactly how the farm household - and for that matter different members of the household - will benefit from this process. Will any resulting benefits in terms of production increases necessarily accrue to members of the household or will the benefits instead be captured by external parties? As Oasa and Swanson (1986 18) point out

the interests of the 'top', or those who control and benefit from the status quo, are most often at odds with those of the 'bottom', or the proposed clients of [FSR]. Any value retained by small farmers and peasants is value lost to those who purchase, process and then market, their commodities. Unfortunately, the 'top' has not been problematized

It is clear that research aimed at improving the situation of RPFs must move beyond a fixation on technical 'solutions'. Obviously, sound technical programmes are and will remain a key part of any development programme, but in concert with such approaches must come the recognition that farming systems need to be conceptualized also "as the social interactions and contradictions occurring between [and, I would also

¹⁰⁹ It appears that those working within the conventional top-down structure have not always welcomed the development of FSR. Furthermore, it has been demonstrated that maintaining such 'client-oriented' programmes is extremely difficult after the initial phase (Merrill-Sands, 1988 in IDS Workshop, 1989c 169). "Like a magnetic field, the pull of the normal is always there and reasserts itself once countervailing forces weaken" (IDS Workshop, 1989c 169)

argue, within] the various elements - farm households, the state, ... research centres and international agencies - of the development community" (Davidson, 1987:75-6).

In other words, research and planning must attempt a broader approach, one that more accurately considers the position of the farm system in the larger political economy.

4.4 TOT IN CONTEXT: FORESTRY RESEARCH AND EXTENSION IN ZIMBABWE'S CAs

The earlier discussion of forestry programmes in Zimbabwe's CAs provided numerous examples of how normal professionalism and the conventional TOT approach to extension were played out in the context of forestry planning for the CAs. This section will focus further on how research and extension for forestry programmes are impacted upon by what has been the dominant model in development planning. I will attempt to demonstrate that the conventional TOT approach is poorly suited to meet the demands of research and planning which aims to support tree-growing and tree management activities by rural people

As has already been pointed out, the standard approach to extension in Zimbabwe, whether it be focused on forestry or agriculture, has essentially involved the promotion of a limited number of technical packages within a top-down structure inherited from the colonial period (Scoones *et al.*, 1993:211). While the number of agencies providing extension services in the CAs has greatly expanded since Independence, the

change in the quality of the message has not been so pronounced (*ibid.* 214, Arnold, 1990 11) For the most part, extension in Zimbabwe has remained highly interventionist and supply-led, with few mechanisms in place for services to respond to farmer requests (Scoones and Matose, 1992 58-9) Obviously, more CA farmers are being reached by the extension services and this is an important achievement¹¹⁰, however, it is questionable whether the advice being disseminated is appropriate to the needs of the 'marginalized majority' of the CAs (Roth, 1990 86, Friedrich, 1990 427) Extension activities and the research which supports them generally tend to benefit commercial farmers and better-off farmers in the CAs (Arnold, 1990 11) In a study conducted in Mutoko CA, Govaerts (1987 in Carter, 1993 12) found that 50% of farmers had received extension advice at some point However, when farmers in the same area are disaggregated according to socioeconomic status, a more complex picture emerges In a recent study in Mutoko that involved breaking the population down along wealth status lines, Carter (1993 41) found that "more farmers in the first [wealthiest] stratum received advice than in any other" Furthermore, some members of the poorer strata felt that the information available from AGRITEX did not apply to them but was "for richer people who could afford to purchase adequate inorganic fertilisers"¹¹¹ (*ibid.* 67)

¹¹⁰ In the early 1980s, average extension coverage in the CAs was one extension worker to 750 farm households, by 1990, coverage had been improved to one extension worker per 540 households (Scoones *et al.*, 1993 214) Obviously, extension workers still face an enormous task in reaching their 'clients' hence the emphasis placed on providing extension advice to groups rather than only individual farmers, although 'master farmers' may receive more individual attention (Arnold 1990 11,22 Klemola 1991 183)

¹¹¹ Klemola (1991 183) also found in southern Zimbabwe that certain farmers felt extension advice was "useless" because they lacked adequate capital, land draught power and labour to implement the

Apart from simply containing the wrong 'message' for RPFs, the technical packages promoted through extension in Zimbabwe need to be examined on another level. The restrictive nature of the technical package approach followed in standard extension practice has ramifications for social forestry programming in Zimbabwe and elsewhere. As Clarke (1991b:7) points out, rigid technical packages are as ill-suited for meeting the needs of social forestry research and extension as they are for responding to the needs of CDR agriculture. In contrast to the complex, diverse and dynamic relationship that exists between rural people and tree resources, the tendency of bureaucracies in development and elsewhere to standardise and simplify their approaches leaves them unable to respond effectively to the complex situation 'on the ground' (*ibid.*, Chambers, 1991:6-7). Given the range in resources and environments in the CAs, the attempt of the RAP to respond by creating 'recommendation domains' for different species of Eucalyptus based on average rainfall figures at the district level clearly appears to be an inadequate response to local level diversity (Clarke, 1991b:7).

The development of these technical packages for later diffusion also poses somewhat unique problems for social forestry. To begin with, Zimbabwean farmers are already employing an enormous variety of on-farm tree planting practices. Given the range of practices involved, exploring the possible combinations as well the efficacy of each is an impractical task employing standard research approaches (Clarke and Matose, 1992:6, Clarke, 1991a:221). Unlike annual crops where fairly rapid replications of

experiments can be done, trees require a relatively long time to grow which places limits on the number of possible options that can be formally tested (Rocheleau, *et al.*, 1989:15-16). As Clarke and Matose (1992:6) point out, developing just one technical package might take scientists 10 years or more to 'perfect' on-station

4.4.1 Agroforestry

The standard conceptualization by outside agencies of on-farm tree planting has tended to involve a very narrow focus. Apart from the obvious example of the Eucalyptus woodlot already discussed at length in the context of Zimbabwe, the argument can also be made that another model of on-farm tree growing, agroforestry, has been constructed within very narrow confines by standard development thinking

Agroforestry has been formally defined as "a holistic approach to land use, based on the combination of trees and shrubs with crops, pastures or animals on the same land unit, either in sequence or at the same time" (Lundgren, 1982 quoted in Rocheleau *et al.*, 1989:15). The 'discovery' of agroforestry and its incorporation into scientifically planned approaches to development provides an interesting example of the process whereby 'traditional' practices are shaped to fit into the conventional development paradigm. Although agroforestry is a 'new' approach in the sense of its fairly recent acceptance as a valid strategy for farm planning within development institutions, the actual roots of agroforestry are anything but new. Agroforestry, while "often invoked as a new solution to rural development needs" is in fact "merely a new word used to

describe age-old land-use practices [common] in many parts of the world" (Rocheleau *et al* , 1989 14-15)

While firmly based in traditional practices, agroforestry has undergone an interesting transformation in its passage from 'local science' to 'formal science'. Under the dominant development paradigm where normal professionalism and its attendant TOT model under various guises remain the order of the day, local science/indigenous knowledge appears to be perceived as "discontinuous, disqualified, illegitimate" until subjected to "a unitary body of theory which would filter, hierarchise and order [it] in the name of some true knowledge and some arbitrary idea of what constitutes a science" (Foucault, 1980 in Stamp, 1990 132). Applied to agroforestry, the process has involved the extraction, appropriation and abridgement of local practice by outsiders where the one-way flow of information under normal professionalism might be seen as temporarily shifting direction but not changing its essential nature (Rocheleau, 1991:158). As Wilson (1989:382) describes it, agroforestry, "neatly rooted in innovative African agriculture, is being sequestered by scientists and turned into another technocratic package". From the enormous range of traditional practices that influenced the formal science of agroforestry, conventional research has concentrated on the development of a limited number of technical packages for eventual transfer to farmers (Clarke and Matose, 1992:5).

A good example of the reductionist aspect of agroforestry science is alley-cropping,

which involves growing crops between rows of fast-growing trees mainly with the intention of producing nutrient-rich mulch to fertilize the crops but also, in some cases, to provide fuelwood and fodder as useful by-products (Sumberg and Okali, 1989:112, Campbell *et al*, N D 8) In fact, this "most celebrated product of scientific agroforestry" is, in the form envisioned by planners, rarely, if ever, found to be employed by farmers once project influence has waned (Clarke and Matose, 1992:2) Instead, farmers frequently reject alley-cropping outright or select only limited components of the technology¹¹² (*ibid*, Rocheleau *et al* 18, Sumberg and Okali, 1989:113, Jama, 1987 in IDS Workshop, 1989d:46) Agroforestry science within development institutions focuses on "the systematic placement of trees relative to crops and pastures" in contrast with rural people's concerns "about the fit of the whole agroforestry practice, and trees in general, into the larger landscape" (Rocheleau *et al*, 1989:15). While farmers' practices of leaving scattered trees in fields might be viewed as 'messy' and 'traditional' (Wilson, 1989:374), modern agroforestry, exemplified by alley-cropping, aims to integrate trees into the farm system in an orderly manner, employing straight lines and 'optimum' spacing to maximize yields (Sumberg and Okali, 1989:113).

¹¹² This selection of only some components of externally developed packages is in keeping with experiences elsewhere Rhoades (1989:5) reports a follow-up study on a potato storage system - considered a successful case of technology development by one of the international agricultural research centres, though it should be mentioned that this technology was learned from farmers in the first place - revealed that 98% of the approximately 4,000 farmers surveyed had not 'adopted' the package as presented but had 'adapted' it to their own conditions Given that farmers still found the technology useful suggests that this process should not be viewed negatively although it could be used to support arguments for a shift in the approach to research and extension

Agroforestry, rooted in long-standing traditional practices in Africa and elsewhere, has, to a certain degree, been transformed through normal professionalism to fit within the conventional TOT approach to research and extension. The acknowledgement that modern agroforestry is derived from traditional practice is not irreconcilable with Clarke and Matose's (1992:5) assertion that the focus of conventional agroforestry research has been "on bringing new technology to farmers rather than building on existing practices" because of the transformation entailed in the shift from 'local practice' to 'scientized package'. As Wilson (1989:382) remarks

[agroforestry] systems are being enthusiastically picked up by donors desperate for ecological projects in Africa, and unfortunately thrust down farmers' throats like any other western package.

This approach has led to attempts to promote systems based on practices in one area in other areas with no consideration of any locally existing agroforestry systems¹¹³ (*ibid.*).

The manner in which indigenous agroforestry knowledge has been 'extracted, appropriated and abridged' through the conventional development process, suggests that even what Chambers (1988a:24) describes as 'gap' institutions working on areas such as agroforestry with considerable potential for the poor, are under considerable pressure to conform to normal professional practice¹¹⁴.

¹¹³ In fact, alley-cropping is a good example of a foreign system that, in Zimbabwe at least and probably in many other areas, would require major modifications of the existing farming system if it were to be implemented (Campbell *et al.*, N.D.:10).

¹¹⁴ It may be useful to explore what these institutions have had to do in the way of adapting to normal professional practice in order to ensure their continued support by the major donors. In other words, have 'gap' institutions such as ICRAF (International Centre for Research in Agroforestry) been able to remain focused on "neglected gaps, linkages and potentials important to poor rural people" (Chambers, 1988a:24) or have normal institutional pressures steered them in other directions?

4.5 SUMMARY

The view of approaches such as agroforestry as some sort of 'miracle cure' for the problems of rural areas (Clarke and Matose, 1992:1) has tended to ignore the possibility that a more fundamental change in research and extension is needed rather than simply getting the message 'right'. Claiming that we only need more or better technical 'packages' for farmers accepts that the current system is not where the problem lies. Forestry programmes are in effect little changed since colonial times and are at best only marginally more responsive to the realities of peoples' interactions with tree resources. The result of a planning approach that focuses on technical packages for farmers will be the continued neglect of the activities farmers are already engaging in with tree growing. As will be argued further, building on the practices that rural people are already engaging in with respect to trees, often with little or no support from external organisations, may prove to provide fertile ground for tree planting programmes in the future that would better reflect the needs and aspirations of resource-poor farmers.

CHAPTER 5

TREE PLANTING PRACTICES AND MOTIVATIONS

5.1 INTRODUCTION

The dominant approach to forestry extension and programming in Zimbabwe's CAs with its emphasis on seedling provision,

presupposes an inability on the part of farmers to cultivate and manage trees on their own, or without the extensive subsidies and inputs which the public sector and NGOs are able to provide (Deweese, 1992:48).

On the contrary, tree growing by CA households, often without any assistance from external organizations such as the Forestry Commission (FC), is a well-established activity. However, the focus of farmers' activities in this area differs importantly from the approach to planting promoted by the FC and others.

In this chapter, farmers' tree planting practices including the numbers and types of trees planted, as well as the form this planting takes, will be examined in detail using both the available literature and information gathered over the course of the research. Constraints on tree planting, both biophysical and socioeconomic, will also be assessed for their impact in the CAs. The second part of the chapter will explore the differing motivations which influence farmer decisions surrounding planting activities.

Although motivations in tree planting, as in other aspects of farmer decision-making,

are clearly complex, an argument will be made that the potential for cash returns from tree growing plays an important role in farmers' decisions to grow trees. Furthermore, conflicting views of priorities in tree growing between planners and rural people have important ramifications for the effectiveness of forestry programmes.

5.2 PARTICIPATION IN TREE PLANTING

Given the focus of many tree-planting programmes in providing materials for, and information on, planting trees, it might be construed by some observers that tree planting by small-scale farmers is not a well-established activity. In fact, the opposite is true. The baseline survey (du Toit *et al.*, 1984) completed early on in the RAP found that 61% of households reported planting at least one tree, other studies found planting rates ranging from 70% (Katerere, 1986:125) to over 90% (Hancock, 1991:95). In Mutoko CA, Carter (1993:6) notes that a planted exotic fruit species - Mango - makes up the major component of woody vegetation in cultivated areas. In the research done for this thesis, 305 households, or nearly 69% of the total sample, had planted trees in the past five years although there was a considerable range between the 20 research sites from a low of 41% to a high of 96%.

5.2.1 Numbers and Types of Trees Planted

While over-all participation in tree planting is high among CA households, the

numbers of trees planted are generally not large. Hancock (1989 in Campbell *et al.*, 1991a:105) found that on average households plant approximately 7 trees. Fortmann and Nabane (1992:25-6) found that among tree planters, women planted an average of 7.5 trees in comparison to men's 13. Presumably, both these studies lump together fruit trees and Eucalyptus, although some planters of the latter tree would be expected to produce some large numbers in the form of large-scale woodlot plantings¹¹⁵.

However, even with Eucalyptus the plantings are not necessarily large; the Baseline Survey undertaken at the beginning of the RAP found that 63% of Eucalyptus planters had planted 10 trees or fewer "indicating that in general plantings are not being made in the form of conventional woodlots or on a rotation basis" (du Toit *et al.*, 1984:103). In my study area, data on the numbers of seedlings planted over the past few years that are still surviving show 55% of planting households have fewer than 5 trees and 90% have less than 25. Those households engaging in large-scale plantings such as for woodlots with 50 trees or more make up a small group, accounting for only about 3% of all planters. Among farmers that reported selling products from on-farm trees, many of which were likely planted longer ago than five years, the average number of trees owned ranged from about 1.5 for avocados to 77 for bananas¹¹⁶.

¹¹⁵ Fortmann and Nabane (1992:26) do in fact compensate for this to some degree by leaving out of their calculation two farmers that had planted "exceedingly large numbers of trees". The effect of outliers is clear from my own data on numbers of seedlings planted in the past 5 years still surviving: while the mean is nearly 17 trees per household, the median is 5. The very large numbers of trees, *ie.* over 50, planted by a few households in the study area in the past five years are almost exclusively Eucalyptus.

¹¹⁶ There is enormous variation between households in the numbers of trees owned: for example, the median number of banana trees owned by marketing households - 35 - is less than half the mean.

Studies have indicated that the vast majority of trees planted by small-scale farmers have been fruit trees (du Toit *et al.*, 1984:99, Katerere, 1986:125, Hancock, 1991:95, Campbell *et al.*, 1991b:10,13). In my own study, 88% of the 305 tree planting households planted fruit-bearing trees, the remainder planting mainly Eucalyptus. Almost all of the trees planted are exotic species, Campbell and Grundy (1991:61), in a review of the literature, found that planting of indigenous trees is undertaken by between 1% and 10% of households, mostly for the purpose of creating live fences¹¹⁷. In areas where seedlings of indigenous species have been made readily available, farmers show some enthusiasm for planting these trees although little enthusiasm for purchasing them (*ibid.*, Gumbo *et al.*, 1990, Scoones *et al.*, 1993:213).

Campbell and Grundy (1991:61) note that the choice of fruit trees to plant varies from place to place. In my study sites, mangoes were by far the most popular species (planted by 45% of tree planting households), followed by pawpaws (29%) and Eucalyptus (28%) (for a more complete listing see Table 5.1). Those households

¹¹⁷ Unfortunately, I am unable to provide an accurate figure for the planting of indigenous trees, the reasons for which provide some indication of the difficulties that can be encountered in research of this kind. First of all, I realize in hindsight that there was a tendency on the part of both enumerators and farmers to emphasize exotic trees over indigenous trees in their discussions. It is important to keep in mind that exotic trees are considered 'modern' by many people and therefore more worthy of comment than indigenous species. The situation is further complicated by the discrepancies which sometimes occur with tree names. For example, exotic species might be given Shona names, either of indigenous species, or based on some other attribute of the tree. Therefore, Mexican Apple becomes 'foreign' *muzhanje* (*Uapaca kirkiana*) in some cases although it might also be known as '*mudyandararama*' which loosely translates as 'who plants it, plants for others', a comment on the fact that the tree may take 10 or more years to fruit and the planter might be dead by that point. Another tree I was unable to identify - the farmer was quite emphatic that it was not indigenous - was called 'foreign' *mukute* (*Syzygium guineense*). Based on the possibly incomplete information I received, it appears that the percentage of households planting indigenous species would fall somewhere within the low end of Campbell and Grundy's (1991:61) estimate.

planting trees commonly plant a variety of species, with 66% of households planting at least two species and some planting as many as seven. Of some interest is the fact that gum tree planters account for the highest proportion of the 34% of households that are 'monoculture' tree planters. Of the 84 households that planted Eucalyptus over the past five years, 33 (39%) planted only Eucalyptus compared to the next highest percentage of 21% for mangoes and approximately 10% for planters of fruit trees as a whole¹¹⁸. It is not completely clear why this should be the case, but a possible reason is that Eucalyptus seedlings have generally been easier to obtain at lower cost¹¹⁹ than seedlings of other species and, therefore, persons wishing to plant trees may still be able to acquire gum seedlings when other species are unavailable for reasons such as cost and access. The difficulties rural people face in growing trees once they have overcome initial supply constraints makes even more impressive the levels of tree planting observed. The determination of people to plant trees is perhaps especially striking in the case of fruit trees given the relative lack of institutional support that has prevailed in the CAs for this activity (Hancock, 1991:95).

¹¹⁸ This contradicts other studies on tree planting in the CAs. For example, Campbell and Grundy (1991:60) point out that "if a household had planted for purposes other than fruit provision, then in almost all cases they had planted fruit trees as well"

¹¹⁹ Including being given away for free during National Tree Planting Day (Katerere, 1986:126). I was also told by a teacher in one of my study sites that the FC was active in the area handing out free gum seedlings.

5.2.2 Sites Used for Planting Trees

Although farmers plant trees in a variety of sites, planting activities are clearly concentrated in certain areas. As data on planting location were only gathered for planted trees that are already sources of marketed products, the information available on planting sites may not be an up-to-date portrayal of where trees are being planted now. However, from my field observations it appears the sites where mature trees are found remain popular locations for new planting activities.

The overwhelming majority of planted trees are concentrated in three areas: in close proximity to the homestead, in and around the 'homefield', that is the fields immediately adjacent to the homestead¹²⁰, and in the garden area¹²¹ (Arnold, 1990:26, Campbell *et al.*, 1991a:105, Campbell and Grundy, 1991:83-4, Scoones and Matose, 1992:15, Chidari *et al.*, 1992:7; Scoones *et al.*, 1993:219-20). As will be mentioned in the section on tenure, these three sites generally have the advantage of being protected by fencing and/or by the presence of people in the dwelling area. As one respondent put it, a good place to plant trees is where you can "keep an eye on them". Therefore, not only can roaming livestock be scared away from trees, but thieves might also be

¹²⁰ Campbell *et al.* (1991a:102) point out that almost no trees are planted in the main fields and the only planted trees likely to be found there are remnant plantings from old homesteads.

¹²¹ Garden areas are usually associated with *dambos* (also sometimes referred to as *vleis*) a form of wetland created by an underlying layer of unjointed granite that causes drainage to be impeded. The resulting wetland environments tend to manifest as shallow grassy depressions that retain moisture during the dry season and are therefore an important resource for some agricultural activities (Carter, 1993:6, Bell and Hotchkiss, 1991:202).

Table 5.1 Tree Planting and Forestry Extension Exposure

TREE VARIETY	PERCENTAGE OF HOUSEHOLDS PLANTING	PLANTING SITES ¹		EXTENSION EXPOSURE AMONG PLANTERS
Mango	45%	a	33%	29%
		b	12%	
		c	16%	
		d	29%	
Pawpaw	29%	a	46%	22%
		c	27%	
		d	27%	
Eucalyptus	28%	a	60% ²	39%
		b	20%	
Avocado	26%	a	56%	32%
		b	22%	
		c	11%	
Mexican Apple	21%	a	65%	23%
		b	10%	
		c	10%	
		d	10%	
Guava	19%	a	34%	19%
		b	11%	
		c	22%	
		d	22%	
Lemon	16%	a	63%	30%
		b	13%	
		c	17%	
		d	8%	
Orange	15%	³		44%
Peach	14%	⁴		25%
Mulberry	14%	⁴		18%
Banana	13%	a	5%	30%
		b	7%	
		c	81%	
		d	5%	
ALL VARIETIES				30%

¹ The codes used in planting sites are (a) homesites, (b) homefields, (c) gardens and (d) some combination of the three

² The sample size here is only 5 cases, because the information was gathered from pole sellers only.

³ Information on lemon and orange planting sites was gathered under the general heading of 'citrus'

⁴ No data were obtained on planting sites for Peach or Mulberry

Source: Questionnaire Data

dissuaded, at least in the area around the home. The main advantage of the garden area, apart from the likelihood that it is fenced, is the presence of relatively abundant water, especially important for producing bananas.

The number one planting site for most trees is around the homesite (Table 5.1).

Farmers marketing products from planted trees reported that, depending on the species, between 56% and 92% of their planted trees were located either wholly or in part¹²², on or immediately surrounding the homesite. Examining the figures for the three main planting niches indicates that between 89 and 100% of trees currently providing marketed products were planted exclusively or partly in homesites, homefields or gardens. Among planted trees, bananas were the one exception to the primacy of the homesite niche for planting¹²³, with 81% of households reporting their bananas were only grown in the garden area. Other variations, but with a less obvious rationale behind them, were observed between different species. These variations may be due to differing amounts of care the various species require, questions of aesthetics or perceptions held by households of the value of different species. Further research would be required to clarify household decision-making surrounding planting sites.

¹²² Many farmers do not limit their planting to only one planting niche, therefore the same species could be found in up to four different locations, all owned by the same household.

¹²³ The area within and immediately surrounding homesites also appears to be a popular area for eucalyptus planters. Although the sample size is very small, all the respondents who reported selling poles they had planted stated that the trees were grown either in the homesite or homefield. These findings support other figures reported by Campbell and Grundy (1991:69) suggesting the area around the homesite may be as, or more, important a site for gum tree planting than in or around the arable fields.

Households' determination of the best sites for planting trees is also affected by external factors other than those of a biophysical nature. As already discussed in Chapter three, farmers' access to garden areas known as *vleis* or *dambos* are, in a number of areas, circumscribed by government regulations on streambank cultivation. However, Bell and Roberts (1990:136-7, 1991:315) note how social and environmental conditions have combined to produce a highly uneven pattern in *dambo* utilisation. Not only has the application of legislation been uneven throughout the country but peasant responses to the regulations have also been diverse. Furthermore, not all of a given *dambo* necessarily falls within the confines of the restricted zone less than 30 m from a stream course (Carter, 1993:25, Bell and Roberts, 1990:137-9). Nevertheless, in those areas technically in violation where the regulations remain strictly enforced, households suffer from the loss of access to valuable land and water resources (Bell and Roberts, 1991:315) for the production of vegetable and certain fruit crops. The major concern over the continuing restriction of access to *dambo* sites is clearly not the resulting loss of an important niche for tree planting activities. Instead, the largest cost comes in the loss of both food production and the significant income that can be earned through the sale of vegetable crops. The examination of access to and use of *dambo* sites does show however,

... both the active role played by natural conditions in shaping patterns of resource use, and the reciprocal relationship which consequently exists between environment and society (Bell and Roberts, 1991:316)

5.2.3 Sources for Planting Materials

Although the Rural Afforestation Programme (RAP) almost certainly became the most important source of Eucalyptus seedlings during the mid-to-late 1980s period of nursery expansion and subsidies (Burford, 1989 in Campbell and Grundy, 1991: 68), seedlings were available from other sources prior to and during the programme. In the du Toit *et al.* survey of 1984 conducted before the RAP reached full capacity, the Forestry Commission accounted for only nine percent of total gum seedling supply, the rest coming from District Councils, schools/missions and private suppliers. Some of these operations were unable to compete with the low prices offered by government nurseries and folded, while others received support funds through the RAP (Campbell *et al.*, N.D. 2). While RAP nurseries have become the most important source of Eucalyptus, they have played a comparatively minor role in providing seedlings of other species such as fruit trees¹²⁴. Even though in many cases their operation has been turned over to District Councils, for the most part the focus of these nurseries remains on Eucalyptus (*ibid.*; Campbell and Grundy, 1991: 58).

Given that RAP nurseries cannot account for the variety and sheer numbers of trees planted by rural households, what are the origins of these trees?¹²⁵ The majority do

¹²⁴ The Forestry Commission was offering fruit tree seedlings for Z\$2.50, ten times the price of gum seedlings. It should be noted however, that the production of fruit trees is likely to be more costly compared to eucalyptus (Campbell *et al.*, N.D. 2).

¹²⁵ Unfortunately, as Arnold (1990: 23) notes, studies frequently report the planting of large numbers of trees yet often fail to explain how people acquired the trees in the first place.

not appear to be purchased the 1985 Zimbabwe Energy Accounting Project (ZEAP) survey found that only 16% of tree-growing households had purchased seedlings (Campbell and Grundy, 1991:68). This figure is identical to the rate reported from the study area where 49 of 305 tree-planting households reported buying trees. The most important source for trees reported by 57% of growers in the ZEAP study was 'self-production' either through propagation or by collection from the wild, the latter presumably mainly of indigenous trees¹²⁶ (*ibid.*).

Interviews in the study area revealed widespread home-production of fruit-tree species. One elderly informant explained how mangoes had first come into his area with domestic servants returning for holidays with instructions from "Master or Madam [on] how to germinate" the trees. Another farmer, Mr. Muzoka, mentions how in the 1950s before mangoes became common in the rural areas "you felt lucky if you came across a mango stone dropped on the path" that you could take home to plant. People wishing to grow trees now generally have an easier time obtaining seed; Grundy (pers. comm.) reports children are sometimes sent to collect discarded pits of fruit in bus stations and markets in order to produce seedlings for home use or sale. Another source for home propagation is from neighbours or relatives who generally provide seed or fruits on request.

The direct purchase of seed does not appear to be a common practice in the study

¹²⁶ Although some exotic trees were also mentioned in interviews as having escaped into the communal grazing land

area¹²⁷ An indirect method of seed purchase involves buying fruit with the intention of propagating plants from the seed (Campbell *et al.*, N D .1) Mrs Mawere, a well-off farmer in northern Mutoko whose homesite and garden area provide numerous examples of experimentation, grew a fruit tree¹²⁸ from seed obtained from fruit her husband had purchased in a Harare supermarket

Urban areas are also a significant source of purchased seedlings, mainly of fruit trees, with migrant workers carrying them back to rural areas during holidays (Campbell *et al.*, N D .2). Rural people may also ask friends on their way to Harare to purchase seedlings for them (Fortmann and Nabane, 1992:27). Conveniently located near to the main bus stand at Mbare market is a tree nursery operated by municipal workers. A variety of fruit trees are offered for sale and it would appear to be a prime location for sales to rural people on their way home.

Another source for seedlings in the study area are nurseries established through the Mashonaland East Fruit and Vegetable Programme (MEFVP), managed by the Agricultural Development Authority (ADA), which commenced operations in late

¹²⁷ Campbell *et al.* (N D .1) note that the Forestry Commission is the major source of seed for sale but provides only a limited variety. By far the majority of varieties offered are exotics, mainly pine and Eucalyptus, with very few indigenous or exotic fruit species.

¹²⁸ Unfortunately the tree was not in fruit at the time of my visit and I was unable to identify it because the sample I carried to Harare was thrown out accidentally. Mrs Mawere called it a 'foreign mukute' meaning it is an exotic version of an indigenous tree with edible fruit known in English as 'waterberry'. When I discussed the matter with some people at the university they were highly sceptical that waterberries - or something closely related to it - would be marketed in a Harare supermarket. However, they may have been mistaken, not the first time for academics discussing indigenous practices!

1987 As part of the programme focus was to improve the quantity and quality of mango production, a range of methods were planned to support the spread of improved varieties, among them the distribution of seedlings (EEC, 1991:27). While the original intention was to establish village level nurseries where grafting rootstock would be produced, a range of problems including inability to secure improved variety materials for grafting and conflicts over labour provision by farmers¹²⁹ meant these nurseries were "more or less a failure" (*ibid*:28, Dube, 1991:7; ADA Staff Interview). In the end, the choice was made to concentrate on centralised nurseries - such as the one located in Mutoko town - using paid help to produce seedlings for sale at break-even prices of between Z\$5 and Z\$7.50 (*ibid*.). Due to the strong interest demonstrated by farmers in other fruit trees, the nursery also sells various citrus varieties, pawpaw and avocado seedlings, to mid-1992, mangoes had accounted for 51% of sales and citrus for 44% (EEC, 1991:30, MEFVP, 1992).

Although the most striking examples appear to be among better off farmers, willing and able to afford experimentation with alternative tree varieties (Clarke, pers. comm., Campbell and Grundy, 1991:69), my research indicates farmers are willing to purchase trees. In general it appears that for those farmers who resort to the market, it is not an 'either/or' thing; that is, households may pursue a range of strategies to acquire the

¹²⁹ An ADA staff member summarised the problems at the nurseries as women were "too busy [with other work] but were assigned to come and work by their husbands anyway"

trees they need, and are not 'either' tree-buying households 'or' tree-producing ones¹³⁰

Farmers rely on a variety of sources for their trees and it seems likely decisions to buy are based on a wide range of considerations apart from cost

5.2.4 Constraints to Tree Planting

No in-depth data were gathered on over-all tree mortality in the study area, but indications are that it is fairly high¹³¹. Hancock (1991:95) suggests that survival rates for seedlings can be as low as 5%¹³², while du Toit *et al* (1984:105) quote a more optimistic study (Mhungu, 1983) suggesting mortality rates of 'only' 46%. The reasons for such poor survival levels are many and will of course vary between sites but the main reasons for seedling deaths appear to be lack of water and termite damage, followed to a lesser degree by uncontrolled livestock browsing

The relatively severe droughts over the past decade have resulted in the deaths of a large number of young trees¹³³ (Makoni, 1990:29) except in those cases where

¹³⁰ As Mrs Chipfunde explained it, her mangoes and guavas she grew from seed, the orange tree was bought in town, the bananas came from slips given by a neighbour and the 'foreign *mukute*' seeds were given to her and others in the area by someone else

¹³¹ Only 5% of households planting trees in the last five years reported that none had survived. However, as respondents were not asked what proportion of the trees they planted had survived there could in fact have been significant seedling mortality

¹³² Of course survival rates can be even lower. Clarke (pers. comm. in Campbell and Grundy, 1991:66) estimates that survival of Eucalyptus in some CAs is "virtually nil"

¹³³ Losses due to the drought have been very serious in some cases. One farmer, attempting to diversify his tree growing activities with a valuable oil-producing tree, claims to have lost close to

significant effort has been invested in watering trees by hand¹³⁴. A number of farmers reported that as the drought has continued, certain trees have been dying¹³⁵. Even without the added stress of drought, supplementing moisture levels through watering may still be required as the conditions in most of the CAs are marginal for many of the introduced species, including the Eucalyptus promoted through the RAP (*ibid.*; du Toit *et al.*, 1984 107). A large majority (86%) of tree-planting households did in fact say that they watered their tree seedlings. Despite the superior conditions for growing seedlings found in the better-watered CAs such as those located in Natural Region IIa and IIb, no significant difference was found in planting levels between the Natural Regions (NRs) covered in the study. In fact, planting rates in NR IV, the driest NR covered in the study, were marginally higher than those in NR II, 67.8% of households to 67.2%. The highest percentage of planting was found in NR III where 73.3% of households reported planting at least one tree during the last five years.

Z\$6000 worth of seedlings, essentially his entire investment, during the drought. The Mashonaland East Fruit and Vegetable Programme has seen a significant portion of its work aimed at disseminating improved varieties of fruit trees to farmers put at risk by the drought. At the time I interviewed the Acting Field Manager of the Programme in late June of 1992, he estimated that perhaps as many as 60% of the seedlings produced under the project had already died in the drought.

¹³⁴ Watering seedlings by hand of course depends on there being adequate water for the purpose. In one case I came across, household members who had been watering their moisture-demanding naatchies (tangerines) by hand during the drought, were forced to acknowledge that as the drought worsened their well levels were dropping to a point where it was no longer advisable to carry on the practice and the trees would have to be abandoned. Furthermore, given the amount of effort required in watering trees by hand, it is unlikely to occur where farmers' commitment to trees is minimal such as was reported with free gum seedlings handed out in at least two of my study sites. Most of the seedlings in this case have died.

¹³⁵ Vulnerability to water shortages of course varies between species. Bananas and naatchies appear to be especially sensitive to shortages even after becoming established but, as might be expected, all species seem to be vulnerable as seedlings.

Termites are also a major problem for tree planting households. Research has shown that in areas where woodland has been removed, termites increase in number and can become the number one cause of seedling death¹³⁶ (Campbell and Grundy, 1991:66). Chemicals, such as Dieldrin and Aldrin, traditionally used to control termites around tree seedlings are now out of favour due to "their extreme toxicity" (Campbell *et al.*, N.D.:2). The use of such chemicals has also proven to be costly and therefore likely out of reach for many CA farmers¹³⁷ (Makoni, 1990:29). Different respondents felt that 'bad soils' *i.e.* sandy, with low fertility, were much more likely to have termite problems and that there was local variation in the degree of termite infestation¹³⁸.

Livestock have also been mentioned in the literature as a potential problem in establishing seedlings. Goats have been identified as a particular menace in the case of communal woodlots of gums established under the RAF (Makoni, 1990:29, Clarke, pers. comm. in Campbell and Grundy, 1991:66) and the cost of adequate fencing is one of the main expenses in tree planting activities (Campbell *et al.*, 1991b:53). While a few farmers in the study did note problems with livestock browsing on seedlings or

¹³⁶ A wealthy headman in Mangwende CA who decided to begin a building pole business has had 60% of his plantation destroyed outright and many of his remaining seedlings damaged by termites.

¹³⁷ Given that termites can remain a danger to seedlings up to two years after planting (Campbell and Grundy, 1991:66), costs of control could be significant if a large number of trees are involved. I was told by one household that they had previously purchased chemicals for controlling termites with money borrowed through the Agricultural Finance Corporation (AFC) "but that is now finished - [we] can't get more loans". The result in their case was an inability to grow certain trees.

¹³⁸ Therefore, a farmer planning a sizeable gum plantation had picked out a location he claimed did not have a termite problem. Obviously most CA farmers would not have the flexibility of the previous respondent, a relatively wealthy farmer, to significantly shift the location of their tree-planting activities.

young trees, a number of actions are taken to reduce the risk of damage¹³⁹. It appears households will attempt to protect trees that are highly valued¹⁴⁰; these activities often involve the construction of woven branch or thorn bush 'cages' to protect individual trees. Campbell *et al.* (*ibid*) make an important point in noting that much attention in agroforestry development has been focussed on intercropping trees with annual crops in field areas "where there is usually no protection from livestock during the dry season". This approach will be costly if it is to be effective as large areas or multiple individual trees would have to be fenced off from roaming livestock. Attempting to restrict access to the fields also interferes with traditional practices of providing access to crop residues for cattle belonging to community members. To some degree rules of access have already altered and no doubt will continue to do so but a number of questions remain regarding the practicality of promoting tree growing in field areas¹⁴¹.

A variety of other problems that can be encountered in growing trees were mentioned by respondents. While termites are an important pest in young trees, farmers were able to identify other pests that could create problems in more mature trees. These

¹³⁹ In the questionnaire survey, 258 - nearly 85% - of the 305 tree planting households said they took some action to protect young seedlings from grazing animals

¹⁴⁰ I draw attention to the idea of protection for 'highly valued' trees because, although I was unable to reach a firm conclusion on the topic, it appears people will go to considerable lengths to protect certain favoured trees while not exerting themselves for others. And this may not be as simple as fruit trees being favoured as a category versus non-fruit trees. For example, one household I spoke to complained that planting mango seedlings was a problem because of goats yet they had constructed fairly elaborate thorn structures to protect young pawpaw trees. I was unfortunately unable to determine further their priorities in trees

¹⁴¹ This topic will be further discussed in the section on tenure

pests and the seriousness of the problem appear to vary significantly between species. oranges and naatchies are considered especially vulnerable to attack by insect pests, while pawpaws and bananas are perceived by a number of farmers as requiring much less care and generally being without serious pest problems. Many were unable to provide a reason why their trees may have died; one farmer felt it was because the seed she tried to grow trees from was bad, others felt it was due to poor and worsening soil conditions which prevented growing certain trees¹⁴²

Although many households have clearly been able to access tree seedlings through a variety of sources, there is a perception among other households that there is a shortage of available seedlings (Campbell and Grundy, 1991:74). It has also been argued, I think with justification, that the species farmers appear to desire most are difficult to acquire in some areas (Nhira and Fortmann, 1991:8,64). In the baseline survey already discussed, among non-planting households the unavailability of seedlings was the primary reason given for not planting trees (du Toit *et al* , 1984:109). It is clear that a strategy of supplying seedlings through centralised nurseries could never reach the majority of the rural population. Although his argument may be somewhat pessimistic, failing to acknowledge the lengths - and distance - that people will go to acquire seedlings, Dewees (1992:49) points out that nurseries established as part of the RAP to serve a radius of approximately 10 kms,

¹⁴² One household had been told by an extension worker that the reason their avocado trees only reached three feet and then died was due to a soil deficiency that they needed to test for. Unfortunately, the advice was of limited help because the family lacked the money to pay for the test.

only reached about 0.2% of all CA land. The expense of creating adequate numbers of nurseries to serve even ten percent of CA lands would be prohibitive. However, the question may not be so much how can the supply of tree seedlings be expanded overall, but which types of seedlings should see an increase in availability.

The possibility must also be raised that tree planting is in some way a function of the relative wealth of the household. Fortmann and Nabane (1992:26) argue that their study demonstrates poverty has a definite effect on tree planting in that "poorer women were significantly less likely to plant trees in their homestead than more wealthy women". The Baseline Survey on the other hand, found no significant correlation between either overall tree planting and wealth or fruit tree planting and wealth (du Toit *et al.*, 1984:102). It is of course possible that if the latter study had differentiated the data according to gender the results may also have differed.

From my own data I cannot assess the role of wealth in tree planting with a high degree of certainty. Nevertheless, from the analysis that has been possible I have not found any indication of a connection between wealth and planting rates. Employing a proxy of cattle ownership for wealth as discussed in the methodology, there was no association found between wealth and planting activities over the past five years. In fact, comparing planting by only the 'richest' and 'poorest' groups, planting rates are extremely close, only 0.3% apart¹⁴³. Some indication of the effect of poverty on

¹⁴³ The 'richest' group owns, or owned, between 11 and 65 cattle, the latter number being the most reported by any household. The 'poorest' group owns no cattle. Among the sample as a whole, mean

planting might also be gained by examining the participation of *de jure* female headed (widows and divorcees) households in tree planting. It has been suggested that *de jure* female-headed households are more likely to be poor than male headed households, even those with a *de facto* female head (Fortmann and Nabane, 1992:10, Carter, 1993:ix). In comparing tree planting between female and male headed households, it appears female headed households are significantly more likely to have planted trees over the past five years, with 80% of households planting compared to 66% for male headed households. Although a household being female-headed is not a confirmation of poverty, it appears those female-headed households in the study area who own no cattle are very likely to be poor¹⁴⁴. However, even among widows and divorcees who own no cattle (n=25), planting rates are still high at 76% of households. Although women headed households who own more than 11 cattle (n=14) do demonstrate a higher planting rate of 86%, the difference between the two groups was not found to be significant. While there may be an association between poverty and lower rates of tree planting in some cases, it is difficult to suggest reasons for this phenomenon. It would not seem to be related to any need for households to purchase seedlings as, in Zimbabwe at least, most households appear to be able to acquire their planting stock by means other than through the market.

cattle ownership is 5.3 per household while the median is 4. Actual planting figures for the two groups are 66.1% of households owning 11 or more cattle plant trees while 66.4% of those owning no cattle plant trees.

¹⁴⁴ I base this association on the wealth ranking exercise carried out by Carter (1993).

Other factors anticipated by the World Bank and other researchers as being important influences on households' tree planting activities revolved around land and labour availability, willingness to invest money in planting and an unfamiliarity with "the concept of cultivating trees" (du Toit *et al.*, 1984:109). In fact none of the potential problems outlined above were regarded as particularly significant by rural respondents to the Baseline Survey (*ibid.*). The point that rural people have little experience in tree cultivation is clearly incorrect given the extensive tree planting outside of project initiatives. However, the availability of land does enter into people's considerations of tree planting activities to some degree. Among a few farmers, a concern was expressed that planting more trees would infringe on the land available for annual crops. The fact that only 29% of respondents to the Baseline Survey that had planted gums reported planting them in field areas was taken as suggestive of a concern that such planting not infringe on arable land needed for crops (du Toit *et al.*, 1984:107).

An important aspect of the discussion on constraints to planting is the different perspectives involved. Although they do not explore the issue in depth, Campbell and Grundy (1991:67) draw attention to the key point that

perhaps the scale of plantings envisaged by the World Bank (1982) ... are at a level where land [availability] ... may become problematic.

Furthermore, as du Toit *et al.* (1984:109) point out,

the cultivation of a small number of fruit trees in a compound is clearly a very different matter to the establishment of a woodlot for pole production....

Not only is land unlikely to be an issue when the number of trees, and therefore the

land required, is limited, but the amount of labour involved in planting and looking after the relatively small number of trees most households plant will be minor compared to the effort involved in woodlot management¹⁴⁵. At the same time, care must be taken to avoid confusing the apparent lack of constraints in terms of land, labour and cash investment in current planting practices with a willingness, particularly on the part of resource-poor farmers, to undertake activities which could radically alter, and place significant burdens on, the farm management systems currently in place.

5.2.5 Tenure Systems in Zimbabwe: A Constraint on Tree Planting?

Much has been written regarding the impact of tenure on tree planting. However, prior to assessing any impact, some explanation of the tenure system in place in Zimbabwe's CAs is required¹⁴⁶. Land tenure in Zimbabwe's CAs is generally referred to as a form of 'communal' tenure with its roots in traditional practice:

¹⁴⁵ Grundy (1990, in Campbell and Grundy, 1991:67) notes that labour constraints may not be an issue because much of the work currently done in caring for planted trees is performed by children or on *chisi* (rest) days when no agricultural work is done. Based on calculations from the RAP Phase II proposal (quoted in Campbell *et al.*, N.D.:4), labour requirements for a one hectare woodlot work out to approximately 17.5 'man-days' per year over a 15 year period. However, there are considerable variations in the labour required from year-to-year; for example, in the first year, 54 man-days are needed, while in non-harvest years after year 2, it is estimated only 3 man-days per year are required for maintenance. The peak year for labour is year 10 (63 man-days) when the largest of the three harvests is anticipated. Given that research has indicated the average number of household members engaged in full-time agricultural work in the CAs may be as low as two (Zinyama, 1986:171, Gumbo *et al.*, 1990:207), the relatively large woodlots promoted under the RAP could place considerable demands on household labour. As Campbell *et al.* (1991a:106) point out, "labour constraints [have] a great bearing on the type and form any intervention will take"

¹⁴⁶ This section will concern itself with the effects of tenure on tree planting

In this system the community, represented by the chief, owns the land but allocates heritable rights to households to cultivate land, and permits them to graze their livestock on unallocated community lands as common grazing¹⁴⁷ (Holleman, 1952 in Fortmann and Bruce, 1993:200).

It is important to note there is some debate concerning the 'traditional' nature of the communal tenure model. A number of researchers (Cheater, 1990; Scoones and Wilson, 1989; Cheater, 1988; Ranger, 1985, 1988; Cousins, 1990 in Bruce, 1990:2-3) have theorized that the 'communal' system of land tenure is instead largely a construct of the colonial period which greatly overstates any communal aspects of the system¹⁴⁸. 'Communal' tenure may in fact have served a useful role for the colonial government as a form of indirect control, through the chiefs, over land resources¹⁴⁹. The authors mentioned above (in Bruce, 1990:2-3) further draw attention to

evidence of self-selection of land rather than chiefly allocation in the early colonial period, of significant inequalities in landholding, of the early emergence of individual entrepreneurs in farming, and of native readiness to buy land in the freehold areas...

as suggestive of "significant individualistic elements within the tenure system" which

¹⁴⁷ As discussed earlier, traditional leaders such as chiefs and headmen supposedly saw their responsibilities in the area of land allocation taken over by Village Development Committees (VIDCOs) or other local government institutions. Although the extent to which it occurs is unknown, in practice these traditional leaders retain considerable influence over property allocation (World Bank, 1986 in Fortmann and Bruce, 1993:200).

¹⁴⁸ The possibility of colonial origins for supposedly 'traditional' practices elsewhere suggest such the process is not unique to Zimbabwe. Watts (1983:75) provides an example from northern Nigeria where the existence of communal tenure was 'invented' by outsiders to facilitate the imposition of a colonial project and quotes another researcher (Bremen) as arguing the 'traditional' Javanese village "was more a product of the colonial mind than a longstanding ethnographic reality".

¹⁴⁹ Cheater (1990:203) notes that this "...colonial construction of 'customs' [was] convenient to the development of the new state".

were ignored at the time and since (Cheater, 1990 in Bruce, 1990:3). Bruce suggests that the development of the communal system may have been more a consequence of the impact of colonial policies, such as the relatively rapid process whereby the African population was crowded onto reserves, than a deliberate attempt by the authorities to alter the tenure system on a wide-scale (1990:2-3). In either case, the evidence indicates that, as social creations, tenure rules are dynamic and responsive to social change (Bruce *et al.*, 1985:x). Therefore, "tenure law is not rigid, as it is often portrayed, but flexible and innovative" as farmers respond to opportunities and constraints by altering their land-use systems (Regional Working Group on Africa, 1987:337; Gaidzanwa, 1988:16-17).

Whatever their origins, communal tenure rules continue more or less to govern rights to land in Zimbabwe's CAs. Rights to use allocated arable fields are only assured during the rainy season; following the harvest, land reverts to communal grazing although it is understood that the rights to use it for cropping the following year normally remain with the same farmer (Wilson, 1987:61). Indigenous trees are not considered to be 'owned' by the holder of usufruct rights to the fields where the trees are found unless they have been deliberately planted⁵⁰. Otherwise, as discussed earlier, indigenous trees are the property of the community as a whole and no-one has exclusive rights to their products (*ibid.*).

⁵ In a similar fashion, it is possible for a person to claim 'ownership' of a woodland product if they invest effort in it such as by cutting firewood and leaving it in the bush for future collection. Indigenous fruit still on a wild tree cannot be claimed to be owned as no effort has been put into its production (Wilson, 1987:61).

Although the act of planting in most cases seems to instill 'ownership' over a tree, the level of *de facto* control appears to vary depending on the planting site. The most secure areas of control appear to be around the homesite, which also seems to be the area where planting and management of trees is at its most intensive, and in the garden area (Scoones and Matose, 1992:15). These areas also generally have the advantage of being fenced or otherwise protected¹⁵¹ and therefore closed to livestock year-round (Kamau, 1989:53, Campbell *et al.*, 1991a:105). While planted trees in the main fields are considered to be 'owned' by the planter, problems with pilfering can occur and protecting planted trees in this area is more difficult due to community rights of access for livestock (Wilson, 1987:2)

Problems of protection call into question assumptions that fallow lands provide a practical niche for tree planting interventions (Kamau, 1989:56). In his research, Wilson (*ibid.*) found that in the case of the communal grazing/woodland areas "people assumed that no individual could or should expect to plant trees over which they had exclusive rights". It is clear from the preceding example that it is not possible in all cases to consider tree tenure¹⁵² separately from the tenure of the land on which the

¹⁵¹ As there are often people around at the homesites, this may be enough to keep livestock away even without fencing

¹⁵² While it is frequently assumed that trees belong to the same person that owns the land, in many tenure systems this is not the case. As Bruce *et al.* (1985:xi) put it, "Westerners approaching tree and tenure issues in the Third World [must] divest themselves of the 'fixture presumption' of Western law". Instead, rights to trees and their products may be held by people or groups other than those with rights to the land on which the trees are growing. These rights can be quite complex, involving distinctions not only between rights to plant, cut or harvest produce from trees, but also whether the tree is planted or wild, or if the produce is to be used for domestic consumption or sale (Fortmann, 1987, Okoth-Ogendo, 1987, Obi, 1963, Holleman, 1969, Brokensha and Riley, 1978 in Fortmann and Bruce.

trees sit; control over trees does in fact involve more than the 'ownership' implicit in the act of planting. The only example I observed during the fieldwork of tree planting in the communal grazing land appeared to have a purpose unlikely to be sanctioned by the community. During a conversation about the areas of her farm where she had planted trees, Mrs. Chipfunde showed me where she had planted a small number of gums in lines stretching out into the communal grazing land beyond the brush fence bordering her garden area. Although her response when I asked why she had planted trees in such a vulnerable site - only a few severely browsed, straggly seedlings remained alive - was vague, given the importance of gardens it appears the household was trying to secure access to more land in order to expand the garden area¹⁵³. One situation where planted trees in the grazing area seem to remain under control of the planter is where the planting site was part of an old homestead which later moved to another site within travelling distance. In this case, the produce of the trees still remains the property of the planter although, as might be expected, it may be difficult to stop other people from helping themselves¹⁵⁴ (Wilson, 1987:62).

As stated earlier, communal tenure, as a social construct, is likely to change as social

1993:203).

¹⁵³ Mrs. Chipfunde also told me her household has a piece of allocated land some distance from their homestead where the family goes to pick indigenous fruit. She said she would never plant trees there however because she "couldn't keep an eye on them"

¹⁵⁴ My impression from the field research is that the occurrence of theft of produce from trees located some distance from the homestead varies widely from place to place. For that matter, a number of people reported that thieves who came quietly during the night stole fruit from trees planted around the home.

realities change (Bruce *et al* , 1985:x). Such a process is clearly under way in Zimbabwe's CAs with ramifications which may be of some importance for tree planting activities. A change in tenure systems which has been identified in a number of countries of the South, is a trend towards increased privatization of both land and tree tenure (*ibid* , Fortmann, 1987:27). In Zimbabwe, pressure on resources has been suggested as an important reason for the growing reliance by households on resources within their allotted land and the associated practice of privatising these resources¹⁵⁵ (Wilson, 1987:61). For example, it is now quite common for farmers to collect some of the stover from their fields and store it on an elevated structure or in a tree to prevent grazing on the residues by other people's animals thereby conserving feed for their own (*ibid* , Kamau, 1989:41). Wilson (1987:61) also provides examples of disputes over tree resources including control over the leaf humus - an important soil additive - of trees on field boundaries. The belief appears to remain that indigenous tree fruits remain a community resource although there are some reports of people trying to assert individual control over these products from trees in their fields (*ibid* 61-2, Fortmann and Bruce, 1993:204).

Of particular relevance for tree planting activities and the control of produce from these trees, is the practice seen in some areas of fencing off large areas of crop land, denying any access by the livestock of other community members. Although fencing of arable fields is clearly a violation of community dry season grazing rights, the

¹⁵⁵ Wilson (1987:61) also claims that the colonial regime's policies encouraging a market in land and the individualization of field rights has provided an impetus to the privatization of resources

practice is seen to a varying degree in a number of CAs. Community reaction to the practice differs. In some areas, removal of grazing access is seen as offensive and there are reports of farmers having their fences cut by other livestock owners (Drinkwater, pers. comm. in Wilson, 1987:62, Kamau, 1989:40). In other areas, such as Mangwende CA, fencing of arable fields was more common and excluding other farmers' livestock apparently less controversial (*ibid*: 45-6, Wilson, 1987:62). Apart from the obvious advantage of retaining grazing for their own animals, a further benefit of excluding other people's livestock from fields is that the risk to seedlings from the farmer's own animals might be more easily managed. On the other hand, the impact of moves towards the privatisation of formerly communal resources will likely be experienced differently by different segments of the community. The process of privatisation in the rural areas will almost certainly result in increased inequality, those community members without private access to these resources will be especially disadvantaged (Scoones and Matose, 1992:65, Nhira and Fortmann, 1991:63).

It has been argued that the trend towards increasing privatisation of previously communal resources and the individualistic behaviour associated with the process may not in fact "represent a sudden departure from custom, but [instead are] an extension of tendencies evident for some time" (Bruce, 1990:3). Whatever the nature of communal land tenure in Zimbabwe's CAs, most farmers express confidence that their control over land allocated to them is secure¹⁵⁶. Scoones and Matose (1992:15) make

¹⁵⁶ Although it must be noted that a UNDP/FAO study (1989 in Arnold, 1990:8) found that 64% of farmers recognized the *possibility* of their land being expropriated. It would appear however that the

the argument for fairly high *de facto* tenure security over homesteads and adjacent fields based partly on the widespread planting of trees and over-all management of woody biomass by CA residents. Individuals who have been on 'their' land for a period of time may even feel a sense of 'ownership' of that land although legally, there is no provision for CA residents to hold title and CA land is owned by the state (Arnold, 1990:8, Scoones and Matose, 1992:15). The fact that land is not actually 'owned' does not however, appear to act as a deterrent to tree planting around homesites (Katerere *et al* , 1992 17-18). Although I had only a few discussions with farmers regarding issues surrounding land tenure, my impression was also that people feel reasonably secure in their control over land¹⁵⁷.

Widespread tree planting by rural people indicates planters are fairly confident they will have access to the tree's products over the long-term, suggesting a perception of tenure security. However, these indications of apparent tenure security can conceal issues which might be revealed through "a more differentiated analysis of tree management and planting patterns" (Scoones and Matose, 1992:17). Of particular concern, given their key role in agricultural activities and land management in general, is women's security of access to resources. Although definitive evidence on the topic is lacking, the more insecure tenure position that women generally occupy in comparison to men has been suggested as a potential disincentive for women to plant

likelihood of such expropriation taking place is not believed by farmers to be very high

¹⁵⁷ Mrs Chipfunde, whose family controls a piece of land that could be argued to be unutilized, claims the headman has no right to take back that land unless the family surrenders it voluntarily

trees (*ibid* , Chidari *et al* , 1992 6, Fortmann and Bruce, 1993 202,208)

Women's rights in land and trees are generally a function of residence and marriage and are largely dependant on the state of their relationship with either their husband or, in the case of widows, the male household head (Chidari *et al* , 1992 12) Women have seen their rights to land eroded through two related processes colonial legislation and increased land scarcity in the communal areas Land scarcity largely brought about by the appropriation of land by white settlers resulted in the passage of the Native Land Husbandry Act (NLHA) in 1951 which sought to expand the efforts already made with centralisation By bringing about the widespread rationalisation of land use in the native reserves, the colonial government aimed to avoid increasing the amount of land needed for native settlement (Gaidzanwa, 1988 4,7, Scoones and Matose, 1992.4) A further aim of the NLHA was to foster security of tenure among native farmers in order to provide the incentive that the colonial regime felt was lacking under communal tenure for black farmers to invest in their land Under the legislation, male household heads were registered as land holders while women's secondary rights were ignored (Gaidzanwa, 1988 4) The result was

changes in men's rights, which guaranteed individual tenure and inheritance, occurred in the absence of any definition of women's rights of access to land Married women, particularly, had no legal recourse to prevent men's restriction of their access to land they had previously cultivated (Pankhurst and Jacobs, 1988 204 in Bruce, 1990 14)

Divorced women face particularly insecure tenure rights Divorcees lose all rights to

their husband's communal lands, including the right to live in a home they built and furnished during the marriage (Maboreke, 1990 in Fortmann and Bruce, 1993:202). Pankhurst and Jacobs (1988:211 in Bruce, 1990:13) suggest the lack of rights for affected women has become particularly serious due to the ease with which divorces are obtained and the breakdown in social control associated with men's entrance into wage labour. Along with rights to their ex-husbands' land, women also lose the right of access to any trees they planted on that land during the marriage (Fortmann and Nabane, 1992:8). A number of divorcees interviewed regarding gender issues in tenure reported they had lost the right to use trees. Fortmann and Bruce (1993:204-5) point out that

as a result (these women) regretted having ever planted the trees and felt unable to do anything about the loss of rights, since it was part of their culture that a divorced woman did not get any of the property accumulated during marriage .

Women also face uncertainty in terms of tenure rights when they become widowed. Fortmann and Bruce (1993:202) provide an overview of recent decisions in Zimbabwean courts which have resulted in conflicting judgements as to the rights of widows to inherit. However, widows and their children do appear to have rights against the heir - for example, the deceased husband's brother - to be provided with shelter and the surviving spouse and children have the right to occupy and/or use property of the deceased (*ibid.*). In the case of a widow's access to property, including household trees, much depends on whether or not she chooses to remain in the marital home as well as how her husband's property is distributed. Women who leave their

marital home lose all rights to use the trees there whether or not they have planted them. Widows who stay on their husband's property retain the right to use the family trees. Unless the widow has somehow been named the heir, it appears the rights are strictly informal, with no legal standing; however, where the heir is a son, the control he exerts over the trees may be much more theoretical than practical as few sons will tell their mothers how to dispose of trees or their products. In cases where the husband's brother is named the heir, women expressed concern that they would have less control over how trees would be used (Fortmann and Nabane, 1992:22-3)

While women, given the additional uncertainties surrounding their marital status, clearly suffer from a more insecure tenure situation than men (*ibid*), it is unclear what effect this uncertainty actually has on women's willingness to invest effort in tree growing and other productive activities. Fortmann and Nabane (1992:24-5) found that women were significantly less likely than men to have planted trees¹⁵⁸ and speculate that insecurity of tenure may have dissuaded some women from planting trees. On the other hand, Chimedza (1988:47,51 in Bruce, 1990:14) found no evidence that limited land rights for women had a negative effect on agricultural production. Instead, she (*ibid*) considered these rights to be but one aspect of "the larger question of power structures and decision-making within the household". Of much greater importance than rights to land may be women's control over the income generated through their labour. Therefore, the disincentive to engaging in certain activities may stem more

¹⁵⁸ The sample consisted of 153 respondents, 105 of them women. Only 50% of the women reported planting trees at some time compared to a figure of 83% for men.

from a lack of control over, and access to, the proceeds of that activity (Gaidzanwa, 1988:18, Pankhurst and Jacobs, 1988:204, Chimedza, 1988:47 in Bruce, 1990:14).

Financial autonomy is seen as the real issue¹⁵⁹, and it is still an open question to what extent that objective can be attained through greater tenure rights for women (Chimedza, 1988:47,60 in Bruce, 1990:14).

Because women's rights in land are acquired through their relationship with men, women are highly vulnerable to "the literal loss of the fruits of their labour" should they be divorced or widowed (Fortmann and Nabane, 1992:24). It seems likely that for most women, when they balance the benefits they derive from growing trees¹⁶⁰ against the risk of losing control through divorce or being widowed, the potential benefits will win out. Whether or not an awareness of the somewhat tenuous nature of their rights influences women's decisions not to plant trees obviously will not be the key reason for seeking alterations in women's property rights under Zimbabwean law. However, if women are to derive full benefits from forestry programmes, changes in the security of their access to land and the trees growing on it could usefully be combined with actions to improve control over the proceeds of women's productive activities.

¹⁵⁹ Financial autonomy was emphasized by a group of women farmers in the study conducted by Chimedza (1988:41 in Bruce, 1990:12). When the women were asked if they wished to obtain stronger formal rights to land, "they explained that the real issue was control over the proceeds of the land"

¹⁶⁰ Often included among the benefits to women of having trees owned by their households is control over sales of fruit. Questions of control over the use of, and proceeds from, tree products will be further addressed in the discussion of fruit marketing.

Secure access to resources whether they be land or trees appears to be an important contributing factor in farmers' decisions to grow trees. However, other factors may be of much greater importance. There is in fact no clear evidence that tenure security alone will motivate farmers to plant trees, unless farmers see the possibility of good returns, tree cultivation will hold little appeal even under favourable tenure conditions (Cook and Grut, 1989 42). On the other hand, if farmers perceive the returns to tree growing to be attractive, they may be willing to plant trees despite insecure tenure. It appears that the tenure system in any given situation is not the best indicator of the likely success or failure of any proposed tree planting initiatives. Therefore, while

there may be regions where [tree] planting is truly hindered by land tenure...I suspect that many more cases of failure are due more to the mediocrity of the planning and management process than to inadequacies or insecurities of the land tenure system (Murray, 1987 328)

5.3 MOTIVATIONS IN FARMER TREE PLANTING

The various forms that tree planting takes in any given location reflects a wide range of factors which influence household decision making. Ultimately, the 'tree system' in place, as is the case with the rest of the agricultural system, reflects the choices made by a household operating "within the limits set by household assets and the biophysical and socioeconomic environment" (Van Der Poel and Van Dijk, 1987 172). In this section, the factors which serve to influence household decision-making surrounding the growing of trees will be examined. The intention is not to suggest

that any single coherent set of motivations influences tree growing in the CAs. However, emphasis will be placed on the incentive provided by the potential for generating income from trees which I will argue is an important, if at times overlooked, motivation in farmer tree planting.

5.3.1 Non-Market Influences on Tree Planting

A large number of factors unrelated to any direct influence of the market play a very important, though highly varied, role in motivating people in Zimbabwe to plant trees. In fact, as has been shown to be the case elsewhere in the South¹⁶¹, trees are often planted for reasons other than cash generating potential even if these same trees do end up producing a marketable surplus. A number of households interviewed reported planting trees for use on the farm; the consumption of fruit by household members, especially children, is a prime example of 'own use' as is the widespread practice of growing gums for building poles for the household¹⁶². When people were asked through various ranking methods about the positive traits of certain trees, common non-market responses often involved the superior food quality of a given fruit, the fact that children liked them or could eat them more easily than other types and that some

¹⁶¹ In a review of tree planting by small-scale farmers in Central America, Tschinkel (1987:264) found that the first motivations for planting trees were often not market based. Interest in the commercial aspects of growing trees tended to develop after the original plantings produced goods for sale.

¹⁶² In the Baseline Survey conducted by du Toit *et al.* (1984:103) it was found that most of those households planting eucalypts were doing so for the provision of poles for household use.

fruits were nutritionally 'better' especially for children and expectant mothers¹⁶³ A few farmers also mentioned planting trees in order to supply the family with fruit thereby avoiding having their children ask other people for fruit or having to purchase it It would appear from the interviews that family consumption of fruit will often have priority before any surplus finds its way to the market¹⁶⁴ In a general sense, the fact that - in contrast to gum trees - fruit trees produce an edible product, appeared to be an important attribute encouraging their planting

As a significant proportion of the trees providing a marketed surplus were planted perhaps 40 or more years ago. I was interested in exploring the motivations people had then for planting trees Among those who had planted trees at that time, their recollections generally were that they wanted trees for the fruit they would provide for the family Some of the planting during that period was clearly spontaneous, that is without the influence of formal extension or outside influence other than the accessibility of seed for planting¹⁶⁵ Two older informants recalled the first extension efforts involving fruit trees as dating back to 1937 and 1948 respectively, one of these extension messages did involve the idea that with fruit trees, money could be earned to

¹⁶³ The superior nutritional aspects of citrus trees in particular appeared to be a common message spread in some of the study sites by community health workers One mother told me that, during the drought, the fact that her pawpaws kept fruiting meant she could send her children to school fed when there was no other food in the house

¹⁶⁴ One farmer told me that if she wishes to harvest bananas for sale, her husband has the right to ask her to remove some of the total amount for family use It may also be the case that when the children are finished there is no surplus fruit One farmer with nine children said "they eat plenty"

¹⁶⁵ For example, those people who spent time in the urban areas such as in domestic service might get seeds to plant from their employers or by picking up discarded pits in bus stations or along roads

send children to school. Gumbo *et al* (1990:197) also report the presence of extension packages promoting exotic fruit trees dating back to that time in southern Zimbabwe but provide no information on the content of the extension message. The possibility that marketing potentials could have influenced planters during that period cannot be ruled out as, according to a few respondents, fruit marketing was already a fairly well established activity in parts of the study area by the mid 1950s.

A number of other reasons have been suggested as to why people plant trees. In the Baseline Survey conducted at the beginning of the Rural Afforestation Programme, du Toit *et al* (1984:102-3) were able to suggest some possible correlations between tree planting and other factors. Data from the survey suggest a connection between the level of deforestation and the planting of gum trees with more planting occurring in deforested areas. This connection appears logical since gums are a good replacement for building poles normally obtained in the forest.

The connection between deforestation and planting rates does not appear to hold true for fruit tree planting however. Fruit trees were not found to be planted with any greater frequency in more deforested areas. These results, as well as the research conducted by Campbell (1987:378-9) showing that even in more deforested CAs favoured indigenous fruit species are rarely cut, call into question the suggestion (Bradley, 1990:17) that the planting of exotic fruit trees is in some way related to a

shortage in the supply of indigenous fruits¹⁶⁶ Instead, it appears people plant exotic fruits not because they are a replacement for indigenous fruits but because they have attributes which people favour¹⁶⁷ Gumbo *et al* (1990 192-3) report that when people in their study were asked whether they preferred indigenous or exotic fruit trees, older and younger men and older and younger women all expressed a preference for exotic fruits despite their acknowledgement that indigenous trees have a wider range of potential uses.

The suggestion has been made that the preference by rural people for exotic fruits has been influenced by colonial policies and the overall "colonial mentality" which tended to devalue all things indigenous, including fruit (ENDA, 1991 12) Such a theory may not be without foundation McGregor (1991 257,259) reports that there is a certain stigma associated with the consumption of indigenous fruits which is seen as a backward practice, especially amongst teenagers While a perception among certain segments of the rural populace that indigenous trees are somehow inferior cannot be discounted as an influence on planting decisions, I will argue that other factors may be better able to explain the clear preference held by rural people for planting exotic fruit species

¹⁶⁶ Bradley (1990 17-18) also suggests if rural people do not have access to their own exotic fruit trees they simply go without as "there is little recourse to the market to fill the gap" In contrast I found many households in my study area do resort to the market to acquire exotic fruits in the year prior to my research. 53% of households had purchased at least some exotic fruit

¹⁶⁷ Also while people can generally acquire indigenous fruits without payment, exotic fruits must often be paid for which could provide further incentive for producing one's own

A further result of the Baseline Survey was to show that the provision of fuelwood is far outstripped by fruit and construction wood in people's perceptions of the important benefits from tree planting (du Toit *et al.*, 1984:99). During the period of high concern over the fuelwood 'crisis', Katerere (1986:126-7) argued that the lack of emphasis on planting trees for fuel stems from the division of labour in the household. As men are mostly responsible for planting trees, they plant species they perceive as important rather than those fuelwood trees that women would supposedly emphasize given the chance. However, it is not at all clear that women would or do choose to plant firewood species if or when they undertake tree planting. Fortmann and Nabane (1992:25-6), did find that men plant more trees than women but also found that both men and women preferred exotic fruit trees for planting. Furthermore, although women generally receive the off-cuts for fuel when eucalyptus trees are cut for poles, it appears women continue to place more value on fruit tree planting (*ibid.*:26; Chidari *et al.*, 1992:104). As suggested previously in the section on fuelwood usage, women are likely not facing the acute shortage of fuel which might motivate them to plant dedicated fuel trees over trees which provide food and other valued benefits for family use.

5.3.2 'Public' Versus 'Private' Benefits in Tree Planting

The environmental or 'public' benefits of trees, in terms of reducing soil erosion, improving soil fertility, providing shade as well as a host of other beneficial effects is

by now fairly well known. Studies from many areas of the South¹⁶⁸ have indicated that rural people are well aware of the environmental benefits of trees both within and outside of the farm system. However, given the constraints such as inadequate arable land and shortages of labour and cash that many resource-poor farming households are operating under, it appears unlikely that the environmental aspects of tree planting alone provide sufficient incentive for farmers to take up the practice in any significant way. There are of course exceptions to this line of reasoning as is true with most 'rules'. One exception seems to be the widespread planting of trees to provide shade¹⁶⁹. In the survey they conducted for research on the value of trees in Zimbabwe's CAs, Campbell *et al.* (1991b:25) found that 66% of respondents had planted trees at least in part for the shade they provide. However, apart from shade, environmental benefits of trees appear to be given lower priority by CA farmers than the more 'traditional' benefits such as fruit. Even the possibility that trees might improve crop growth was considered by farmers in Zimbabwe to be an incidental benefit¹⁷⁰ in comparison to the provision of fruit and the provision of another environmental benefit, shade (Ingram, 1989 in Campbell *et al.*, 1991a:103).

¹⁶⁸ See for example Foley and Barnard, 1984, Murray, 1987, Van Der Poel and Van Dijk, 1987, Wilson, 1987, Cook and Grut, 1989, Arnold, 1991, Campbell and Grundy, 1991.

¹⁶⁹ The importance of shade has often been invisible in outsiders' accounts of the role of trees. "In fact, the shade that trees provide round the homestead allows households to work and live under conditions that would otherwise prove intolerable" (FAO/SILVA 1987:11).

¹⁷⁰ The possibility that farmers may place little emphasis on crop enhancement by trees could have a significant effect on the spread of agroforestry systems developed for that very purpose. It may be that systems will also have to provide other benefits that are highly valued by farmers if the aim of benefitting crops with trees is to be met.

There is no evidence to suggest that farmers are willing to undertake activities that will provide benefits to the community as a whole if these activities involve farmers receiving returns less than their investment in land, labour and other inputs (Foley and Barnard, 1984:91, Hardcastle, 1987:15). While public - ie environmental - benefits have long been, and continue to be, the focus of many forestry sector programmes (Cook and Grut, 1989:40), small-scale farmers appear "unwilling to assume the cost of these broader social and environmental objectives" (FAO, 1985:93). As Hosier (1989:1834) argues in the Haitian context:

people living so close to the margin of starvation cannot afford to take a long-term loss, no matter how much it does to improve the environment

What is behind this apparent mismatch between programme planning and farmer motivations? Obviously a number of factors are involved, including the top-down planning style which persists in many development organisations¹⁷¹ - not just those concerned with tree planting - which, by its nature, does not allow for farmer concerns to drive planning activities. Also of importance is the lingering perception that small-scale farmers retain a mainly subsistence orientation and are therefore unmoved by economic incentives. Such assumptions have in fact been proven wrong time and again (Cook and Grut, 1989:40). Although the extent and rate of commercialisation may vary widely between different areas, small-scale farmers are generally becoming

¹⁷¹ As Chambers (1991:6) describes it, the "much discredited but widely practised blueprint model for human development, planned from the top down"

increasingly integrated into, and dependent upon, the cash economy¹⁷² (Rocheleau, 1985 22, Shepherd, 1985 2, Hancock, 1987 3, Rigg, 1987:371, Falconer and Arnold, 1988 8, Pabuayon, 1990 43, Roth, 1990 51) In Zimbabwe's CAs, the process of market penetration is well advanced

there is nothing traditional any longer about the peasant population and most of it could not be classed as subsistence producers, which is how the outside world thinks of African rural dwellers, many of them do not grow enough for their own subsistence (Stoneman and Cliffe, 1989 68)

As Arnold (1990 7) points out regarding the dualistic view of Zimbabwean society

the delineation of the [large-scale commercial farms] as being commercial and the smallholder on communal lands being subsistence no longer holds (if indeed it ever did)

With their increased involvement in the cash economy, small-scale farmers have come to base more of their production decisions on the potential cash returns of their activities. At the same time "trees which had little capital value before the penetration of the market have now become prized capital assets" (Chambers and Leach, 1987 8). The growth in markets for tree products has provided farm households with new options for income generation, a fact which has been slow to be acknowledged by programme and policy planners (*ibid*). Where a good market for tree products exists, "the commercial incentive is often the strongest stimulant" for planting trees (Foley and Barnard, 1985 3). Farm households in many areas, including Zimbabwe, now

¹⁷² As Chambers and Leach (1987 5) point out, the need among the rural poor for access to disposable assets has become more acute as the costs of meeting contingencies have risen and traditional mutual help systems have eroded in many areas. Michie (1986) also provides an example of this process from northern India.

attach an economic value to trees and, to varying degrees, regard them as a type of cash crop (Bradley, 1991 212,279). Recognizing the central role that income generation plays in the decision-making of small-scale farmers opens up new dimensions to programme planning for agricultural and on-farm forestry systems (Arnold, 1987 185). One dimension of this recognition of the importance of the market is that "land use must pay", for systems to be accepted and adopted by farmers, they must meet the criteria of economic soundness from their perspective (Mogea *et al* , 1991 112, Hosier, 1989.1835). As Murray (1987:324) argues, there is a need to "emphasize economy, not ecology" in project planning

No matter how technically sound the project offering, no matter how ecologically suited the particular tree to the particular hillside, if the tree is viewed by the peasant as neutral to his (*sic*) cash needs, the tree will be politely ignored. If the tree is perceived as negative to his cash-flow interest, it will be firmly rejected (Murray, 1983 in Foley and Barnard, 1984 91)

While the above comments are not accurate in all cases - farmers in Zimbabwe clearly plant trees for other reasons than purely cash needs - they are useful in stressing the great importance of the market in influencing small-scale farmers tree planting decisions as the following discussion will illustrate

5.3.3 The Impact of the Market on Tree Growing Activities

The presence of market outlets, coupled with the increasing cash needs of households, has a strong influence on farmer decision-making (Van Der Poel and Van Dijk, 1987 171, Pabuayon, 1990 43). Farming systems are commonly altered in response to

marketing opportunities, these alterations depend on the farmer's assessment of factors such as profitability, the availability of marketing outlets and the convenience with which specific production objectives can be met (Christanty *et al* , 1986 154, Liyanage *et al* , 1989 169) In many areas, farmers have responded to the presence of a market by including or increasing tree planting activities on their farms (Tschinkel, 1987 261, Shah and Weir, 1987 6; Gliessman, 1990 164, Godoy and Feaw, 1991 31) Tree cultivation in areas such as homegardens has demonstrated dynamic changes over time in response to a variety of factors, with the changing value of commodities playing an important role (*ibid* , Nair and Sreedharan, 1986 358)

There is also evidence that what has been described as farmers' 'safety first principle' of spreading risk by diversifying their production systems¹⁷³ "may be undermined by price incentives" (Godoy and Feaw, 1991 37) It is clear that the choice of species for tree planting often centres on those varieties perceived to command the highest returns (Christanty *et al* , 1986 155, Van Der Poel and Van Dijk, 1987 171, Hegde, 1988 58, Khaleque, 1988 192,195, Gliessman 1990 165) However, where the level of profit is very high, especially in comparison to other commodities, farmers may establish a virtual monocrop system as has been recorded for the tree crops cloves and rattan¹⁷⁴

¹⁷³ As explained by Arnold (1987 187) "Risk and avoidance of risk loom large in decision-making by poor farmers, often modifying or overriding other economic considerations. There is likely to be a preference for choices that reduce existing risk even if these offer less potential for economic improvement than alternatives" Elsewhere the author (N D a 4) argues that farmers will attempt to minimize their risks in tree growing by planting trees which provide a range of outputs

¹⁷⁴ In one location discussed by Godoy and Feaw (1991 31), rattan accounted for over 99% of farmers' cash income Neither of these crops can be described in any other way than 'risky' Both have demonstrated significant fluctuations in price (*ibid* 38-9, Kartasubrata 1990 25) and cloves are

(Kartasubrata, 1990, Godoy and Feaw, 1991) The market, or more accurately the lack of one, can also discourage tree planting although normally it is certain species or kinds of trees that will not be planted, or will be removed from cultivation, rather than trees in general¹⁷⁵ (*ibid* , Hegde, 1987:282)

In Zimbabwe, the market also plays an important role in peoples' attitudes towards tree planting In fact, Hancock (1987:2) has argued that "the only [tree] planting on any scale that has been done in [Zimbabwe] has been done on a strictly profit motive basis" While it is difficult to assess the accuracy of his comments, from my research it appears the economic aspects of trees form an important part of discussions on tree planting in general and on the relative merits of different trees in particular. Farmers' motivations in tree planting that could be described as 'market-influenced' can be divided into four main areas profitability, ease of marketing, issues related to time and the multi-purpose nature of trees

5.3.4 The Profitability of Tree Planting: 'Relative Price' and Other Concerns

The term 'profitability' is used here to describe a range of issues discussed by rural people such as the relative returns they could obtain between different types of tree

extremely vulnerable to disease (Bennett *et al* , 1986 in Godoy, 1992:715) leading to their being named the 'maybe tree' by farmers (Godoy, 1992:715)

¹⁷⁵ However, Saxena (1991:74) suggests that the collapse in the market for Eucalyptus in parts of India led not only to a steep decline in Eucalyptus planting but also had a negative influence on the planting of trees in general

crops as well as between trees and other agricultural crops. Perceptions of profitability also include factors such as labour and capital inputs into respective crops.

The profitability of engaging in tree planting activities is of concern to residents of Zimbabwe's CAs because cash is required to meet a wide range of needs. For example, a recurring theme in discussions with rural people is the concern over obtaining adequate funds to pay school fees. Some respondents stated they had begun planting trees to generate income to pay for school fees, that the main use of cash from fruit sales was to pay school fees or occasionally to purchase school uniforms. One farmer who had begun growing bananas in 1956 because a farmer that had "gotten rich" from banana sales gave him a plant, had been able to educate his 10 children to higher levels from sales of this crop alone. Other reported uses for earnings from the sale of tree products are paying for groceries, fertilizer, kitchen utensils, blankets, yarn, transport and the grinding of maize¹⁷⁶.

Farmers frequently make reference to the value of certain tree fruits relative to others during discussions. In ranking exercises, those fruits that could be sold at a higher price or provided more money due to larger yields of saleable produce tended to be preferred. A few respondents emphasized the importance of demand for different

¹⁷⁶ These uses correspond to the main uses to which remittances from family members working off farm are put. However, the most common use of remittances appears to be for fertilizer, seed and pesticides, followed by school fees, clothing and groceries.

products, for example, one farmer ranked guavas at the bottom of the scale due, among other factors¹⁷⁷, to a low sale price because "guava are too common and easy to get in the bush" One farmer had planted a large number of Eucalyptus he thought he would be able to sell because of the shortage of building poles in his area. Another farmer, Mr Nyahunure, intended to increase his planting of lemons, oranges and naatchies because they are less common than mangoes and he felt the demand is more consistent for these other fruits. Although the opinions were by no means consistent, some farmers also ranked fruits such as mangoes higher because they produced large amounts of fruit at one time. As Mrs Magandza put it

mangoes are best because [of their] good yield and [we] can sell them in bulk. Other fruits can only be sold one by one [so they are] not as profitable

In the context of discussions on their tree planting decisions, some farmers discussed the returns from other crops. Godoy (1992: 714) has suggested that while prices play an important albeit poorly understood part in farmers' decisions to plant trees,

the price of the commodity itself . . . cannot satisfactorily explain whether farmers will plant. That decision stems instead from relative price movements, or the movement of the price of the tree product relative to the movement of the price of other crops or of other activities.

Therefore, trees may be an attractive cash crop where tree product prices are high and/or rising relative to low prices for agricultural crops (*ibid.* 714-18; Wood, 1983: 195; Jambulingam and Fernandes, 1989: 135). During my interviews with

¹⁷⁷ This farmer also ranked guavas low because they spoil very quickly and he personally dislikes eating them

farmers, the low prices offered for maize were a frequent topic of discussion and the cause of considerable discontent. In fact, between 1981 and 1988, the real price of maize declined by 34%, given the downward pressure on prices¹⁷⁶, the long-term prospects for maize producers do not appear good (Roth, 1990 49,86). Grain and cereal producers are also expected to be at a disadvantage relative to higher value crops as transportation shortages lead to sharply increased costs (*ibid* 86). One farmer accused the government of "oppressing" grain prices, suggesting the result is that farming "no longer pays". Apart from the low prices offered, the high cost of fertilizer was also mentioned as contributing to the lack of profitability in farming. Maize production was seen by more than one farmer as simply being too costly to undertake on a large scale. A further problem in Zimbabwe has been the inability of the marketing system to adequately keep up with farmer demands (*ibid*), as Blackie (1984 3) argues, "where crops are marketed through parastatals - slow payment depresses the value of the crop to the farmer".

The comments of one household in large-scale production of tree fruits - they own over 100 mango trees - can serve to summarize a number of the concerns farmers have regarding annual crops. Mrs Chingombe and her husband felt they could not rely on maize production because the prices are far too low, cotton production also presents problems because it requires the purchase of expensive chemicals and payment from the government parastatal is slow in coming. Mangoes on the other hand, require very

¹⁷⁶ A trend which has likely been interrupted by the recent serious drought

little care, no fertilisers¹⁷⁹ and there is no waiting for payment the fruits "ripen straight into money" As Arnold (N D a 3-4) notes, while tree crops can entail fairly high costs in terms of cash and labour at the time of establishment, ongoing capital and labour requirements are often significantly lower than for other cash crops Another farmer and her son, after first ranking fruit as less profitable than vegetables, maize and groundnuts, ended up ranking fruit first after deciding that the latter is more profitable due to its relative ease of production taking into account labour and other inputs

A final comment on profitability relates to the question of why households choose to plant exotic fruit trees over indigenous ones As mentioned earlier, indigenous trees are rarely given preference in planting decisions Apart from the possibility that in some locations people feel adequate numbers of indigenous trees already exist¹⁸⁰, an important factor apparently influencing people to plant exotic rather than indigenous fruit trees is the superior commercial value of exotics (Gumbo *et al*, 1990 193, ENDA, 1991 2, Chidari *et al*, 1992 103-4) As Gumbo *et al* (1990 193) note, exotic fruits have a much wider market and sell for a considerably higher price per fruit than

¹⁷⁹ Obviously not all tree crops are perceived by farmers as being trouble free, a number of respondents commented on the need for spraying some of the citrus fruits to kill pests However, the low maintenance for some trees was frequently commented on for example "bananas can fend for themselves" or pawpaws were a farmer's favourite because no spraying was required "just does on its own" and provides a good profit These comments are consistent with the conclusions reached by the UNDP/TAO (N D 70) "fruteroops growing is regarded in the communal areas as undemanding and basically consists of growing and picking fruits without any in-depth and regular intensive maintenance and management"

¹⁸⁰ Although in certain areas ENDA (1991 33) notes indigenous fruit trees are "under severe strain" due to increasing deforestation

do indigenous fruits. Furthermore, while exotic fruits have a good local as well as urban market, indigenous fruits generally can only be sold outside their source areas requiring some expenditure on transportation (*ibid.*:200; ENDA, 1991:2).

5.3.5 The Access to Markets for Tree Products

The ease of access farmers have to markets for tree products has been identified in a number of areas as an important influence on the choice of what trees are grown (Mary and Michon, 1987:49; Padoch and de Jong, 1987:193; Ghessman, 1990:164-5). In Zimbabwe, the proximity of markets for exotic fruits has been suggested as a motivating factor in farmers' decisions to plant certain fruit trees (Gumbo *et al.*, 1990:201; Chidari *et al.*, 1992:164). While many farmers produce fruits that are sold in markets a considerable distance from the farm site¹⁸¹, large quantities of primarily exotic fruit are sold in local areas as well. All exotic fruits were sold to some degree in the CAs, but when the levels of sale were broken down by fruit types, it is clear that there is considerable variation in the level of demand for different fruits. The fruits with particularly strong rural markets are avocados, bananas, pawpaws and certain kinds of citrus fruit¹⁸². The demand for avocados is such that one farmer reported people coming to her house to ask to buy the fruit; another pre-sells much of

¹⁸¹ This topic will be discussed in Chapter Six.

¹⁸² The strong demand coupled with a shortage of local supply has even led to the importation of certain exotic fruits for sale in the rural areas. This practice will be further discussed in Chapter Six.

3

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
JANUARY 1963 TEST CHART No. 21

his crop to interested local people and middlemen¹⁸³. Another farmer who derives a significant portion of his income from banana sales, recently planted 65 more to meet the high demand for the fruit in his area. It appears school children and teachers make up a large part of the market for exotic fruits in the rural areas. In one area with transport shortages, a woman said that if she were to grow trees for income she would concentrate on bananas and oranges which can be sold at a local school thereby avoiding problems with fruits such as mangoes that have more of an urban market.

The other side of the discussion on proximity to markets is that some farmers expressed doubts about growing fruit for the market due largely to the costs involved in obtaining transportation to Harare¹⁸⁴. There was no mention by farmers of transport being completely unavailable, even the most remote households in the study seemed to have access to some level of transportation for themselves and their crops, although a number did make comments as to its erratic and undependable nature. However, opportunities for reaching not only the Harare market but also smaller regional markets appeared greater for those located near the road. While no definitive comments can be made on the connection between tree planting and access to the market, there was an association found between levels of tree planting and location relative to the main

¹⁸³ As pointed out in the methodology chapter, all 'middlemen' encountered in the course of the research were indeed men. Of course this does not mean women are never involved in the activity, only that I did not encounter any.

¹⁸⁴ One farmer, a large banana producer in northern Mutoko, was attempting to get around transport problems by becoming a supplier for a large fruit wholesaler in Harare. According to the farmer, the wholesaler would send trucks to pick up the fruit on farm, a situation the farmer described as a source of "easy money."

road passing through the study area. Among those households located immediately adjacent to the road, planting rates were 76%, significantly higher than the 64% for households located away from the road¹⁸⁴. While it is clearly difficult to separate out the possible factors influencing decision-making, unlike the association with location, none was found between planting and Natural Region of the sites, nor was any association found between access to the main road and extension services which may have acted to influence planting. Other factors not covered in the survey such as cost of acquisition of planting stock could also account for some of the increased planting among households adjacent to the road.

Other factors than simple proximity to market, are of course, considered by farmers. Both mangoes and guavas have limited rural markets but, while mangoes are commonly ranked first when people are asked to choose which fruit they would grow over any other, guavas are often ranked last. Perhaps more important is that mangoes are marketable and, if not always at a good price, they generally bring better cash than guavas. It can be argued then that while selling mangoes may not be easy in the sense that the local market is not capable of absorbing local production, there is generally a reasonable demand for mangoes, often on the part of roving middlemen who purchase at the farm gate.

¹⁸⁴ Chi-square value = 7.47 with 1 degree of freedom and a significance of .0063

5.3.6 Issues Related to Time

Much has been written regarding small-scale farmers' inability or unwillingness to take up tree cultivation because of the length of time involved in waiting for returns to their investment¹⁸⁶. Chambers (1991:7) on the other hand, argues that the literature shows poor rural people, unless in a desperate situation, actually take a long view and prefer to "invest for sustainable livelihoods", including planting trees, when their rights to resources are secure¹⁸⁷. In his opinion, outsiders' belief that poor people must take a short-term view is more a product of our own biases about them than it is of reality. Gumbo *et al* (1990:210) found that some Zimbabwean farmers considered the long-term returns from fruit trees worth it even though full production might take as long as 20 to 30 years. At the same time, rural people will rightly be wary about planting trees in situations such as that described by Scoones and Pretty (1990:158-62) for Sudan where economic, tenurial and environmental uncertainty dissuaded farmers from planting mangoes, even though they are known as the "donkey of the market" due to their consistently strong demand. In any case, while concerns over the slowness of returns may deter farmers from making large-scale investments in tree planting, it is

¹⁸⁶ Comments like "the long period required to grow trees to maturity is a familiar constraint in farm forestry" (Mussak and Laarman, 1989:165) or "small farmers in India do not have the ability to invest in long-term projects" (Hegde, 1988:58) are fairly typical of this line of reasoning. Other studies link farmers' tolerance for delays to returns to the level of poverty of the household: poorer households are believed less able to wait for returns to investments (Foley and Barnard, 1984:68, FAO, 1985:94, Shepherd, 1985:15, Hardcastle, 1987:15, Khaleque, 1988:195).

¹⁸⁷ Although, it appears if the returns are there, farmers may be willing to risk tree growing even under conditions of insecure access to resources (Godoy, 1992:718). Lundgren and Grandin (1987:379) provide an example from Bangladesh where "poverty-stricken producers grabbed at the suggestion of agroforestry despite poor tenure security".

unlikely to stop people from planting a scattering of trees around their homestead (Foley and Barnard, 1984:69)

While concern over slow returns may be a factor for Zimbabwean farmers, the issue did not arise in discussions with the majority of farmers¹⁸⁸. A few farmers did however mention other issues relating to 'time' and tree crops. One issue was the timing of returns, for some, returns throughout a large part of the year are a desirable feature of certain crops such as pawpaws and bananas. Others preferred the heavier but shorter fruiting habits of fruits such as mangoes which provide lump sums of cash when sold. Much seems to depend on how farmers see the income from different sources fitting into their over-all system, for example, one farmer was expanding his planting of mango trees because it 'evened out' his income. By selling both mangoes and vegetables he was able to produce a more continuous flow of cash than he could obtain from depending on either income source alone.

Another aspect of timing is getting the returns when they are needed most. As some authors have pointed out (Chambers and Leach, 1987; Arnold, N.D.a:5), trees can act to diversify farmers' sources of income, providing returns in time of drought or other needy periods. No farmers interviewed specifically stated that planting trees to meet contingencies was a strategy they pursued, however a few did mention that although the drought had essentially wiped out their entire maize crop, their fruit trees still

¹⁸⁸ Although one farmer told me he preferred bananas over some other fruits because "its quick to produce - only two years to first fruiting if you use plenty of manure"

produced a sizeable enough crop to enable them to earn some cash¹⁸⁹ Only longer-term research that compared yields over a number of years could answer questions as to the effectiveness of fruit trees as a back-up source of income in times of drought

One other issue of some interest related to questions of time in growing trees for the market is the returns from fruit versus returns from building poles When asked to rank gum trees against four other trees¹⁹⁰ - bananas, mangoes, guavas and citrus - Mr Muzoka ranked gum ahead of only guava, a tree he personally dislikes When asked about his choices, a point he stressed was that the three fruit trees generate much more income because they produce something for sale every year, unlike gums which provide cash only once every two to four years depending on whether the pole comes from a coppice or a seedling Considering the averaged yearly returns of poles and fruit, it is easy to see his logic, gums might return Z\$4 per year - although from data I gathered a return of Z\$1 per pole per year appears more realistic - but fruit trees could return much more, as will be seen in Chapter Six At the same time, Mr Muzoka still plans on a small plantation of gums which he would use "for roofing and also to sell" He obviously values gums for reasons quite apart from the levels of yearly returns they can provide.

¹⁸⁹ The losses incurred during the drought were sometimes large One farmer who relies mainly on maize sales and feels there is more money in that activity than can be earned from fruit, stated that his maize yield for the 1992 harvest was less than one bag as opposed to the normal 290 to 300 bags Therefore his return on an investment in seed and fertilizer of Z\$1473 was essentially nil

¹⁹⁰ All five trees were picked out by him at the start of the exercise as those commonly planted on farms in the area

5.3.7 The Advantages of Multi-Purpose Trees

While tree products, in the case of Zimbabwe primarily fruits, do appear attractive to many farmers for their potential returns, they also have benefits that go beyond their cash value. In Zimbabwe a recurring theme in conversations with farmers is that fruit trees are 'good' because they are a source of food *and* cash¹⁹¹. Returning to the discussion and ranking exercise carried out with Mr Muzoka, a further reason why he preferred fruit trees over gum trees is that "[you] can't give people gum trees to eat" and "eating [is] more important". Time and again farmers reported they wanted trees for family use but with the potential for selling any surplus to help meet other needs¹⁹². Therefore, the opinion of one farmer that if he were limited to growing one tree it would be mango because the fruits are a family favourite and he can easily sell as many as he chooses was not atypical. It is also important to note that the multi-purpose argument was applied to Eucalyptus planting as well, poles would be for roofing the family home and any excess would be sold.

The motivations that influence farmers to plant certain trees are clearly complex and it is difficult to assess the importance of individual factors in influencing farmer

¹⁹¹ Khaleque (1988:195) found the same preferences for trees that provide fruits for eating and for the market among small-scale farmers in Bangladesh

¹⁹² In Longhurst's (1988:34-5) typology of 'good' and 'bad' cash crops, fruits could to some degree be characterised as a 'good' cash crop because they are also an important source of food, are arguably complementary within the farming system and are to a significant degree under the *de facto* control of women. However, their marketable product is only one, their maturation period is fairly long and the marketing system is at times problematic. The type of income flow, 'lumpy' or spread out, is dependant on the type of fruit grown

decision-making. However, although it is a subject that received only limited comment from farmers, one potential motivating factor that has yet to be addressed is the role of subsidies and extension programmes in convincing farmers to take up tree planting.

5.3.8 The Role of Extension and Subsidies

The role that extension has had in motivating farmers to plant trees in Zimbabwe's rural areas has not been extensively researched. As already pointed out, the forestry extension message in Zimbabwe has largely centred on the promotion of Eucalyptus woodlots, "historically the only package available" (Scoones *et al.*, 1993:216). The extensive promotion of gum tree woodlots does appear to have increased the planting of these trees, the effect on other forms of tree planting through this approach to extension is less clear.

The Baseline Survey undertaken at the beginning of Zimbabwe's Rural Afforestation Programme, determined that forestry extension "might well have been a significant influence on the planting of eucalypts" (du Toit *et al.*, 1984:103). In households that had planted gums, exposure to forestry extension was 87% compared to 57% in non-planting households (*ibid.*:105). In contrast to the previous study, Katerere (1986:126) determined that "extension services played a minor role in initiating tree planting activities" with a full two thirds of planting households claiming that extension did not

influence their decision to plant trees

The apparent discrepancy between the two studies demonstrates why it may be difficult to determine with certainty the role of extension in tree planting. At the same time, the studies may not necessarily be as contradictory as they first appear. For example, while the Baseline Survey is dealing in objective measures of exposure to extension, the second study is concerned with a subjective view of planting influences. The fact that a farmer considers tree planting to be her or his 'own idea' does not preclude them having been exposed to forestry extension at some point and, for that matter, influenced by it in some way.

In my research I also found an association between exposure to extension and tree planting although the over-all exposure to extension was considerably less than in the du Toit *et al* study¹⁹³. Data from the study area reveals 79% of farmers who received advice planted trees compared to 65% of those households not receiving an extension message¹⁹⁴. Further indications of the role of extension in planting might be gained by examining extension exposure among farmers planting different kinds of trees. The du Toit *et al* study found that extension exposure apparently positively influenced both

¹⁹³ Part of the difference in numbers of households exposed to forestry extension - 53% in du Toit *et al* versus 27% in mine - may be due to a more open definition of extension in the earlier study. The du Toit *et al* study included information on tree planting heard about through the media as well as from extension workers. My questionnaire [Appendix 1] may have led people to assume I was emphasizing contacts with extension officers. It is, of course, also possible that a number of my study sites have not been reached by extension, certainly the level of extension - from 0 to 60% - does vary dramatically between sites.

¹⁹⁴ Chi-square value = 7.45 with 1 degree of freedom and a significance of .0064

tree planting in general and eucalyptus planting in particular. In my research I collected information on the number of farmers planting each of the more popular exotic trees¹⁹⁵ that had also received advice on growing trees.

If we accept that forestry extension in Zimbabwe has influenced tree planting by CA farmers, then we might also speculate that the species planted by households exposed to extension will reflect the extension message. Two sets of data may be seen as supportive of this theory. First, those farmers engaged in planting Eucalyptus, arguably the species most heavily promoted in forestry extension over the last decade, are, at 39%, second only to orange tree planters at 44% in terms of the percentage of planters receiving forestry extension¹⁹⁶. For comparison, planters of the two most commonly planted fruit varieties, mangoes and pawpaws, reported extension exposure of 29 and 22% respectively (Table 5.1).

Second, we might expect those farmers responding to an extension message focussing on Eucalyptus to do the same in their actual planting activities; evidence from the study sites appears to bear this out. Among the 33 gum planters who received forestry

¹⁹⁵ 'More popular' species are considered to be those planted by at least 30 households, roughly 10% of all planting households. These trees, all exotic varieties, are mango, pawpaw, eucalyptus, avocado, mexican apple, guava, lemons, oranges, peach, mulberry and banana.

¹⁹⁶ I cannot provide a firm explanation for the high rate of extension among orange tree planters except to note that a number of farmers reported an emphasis on oranges in extension for reasons of nutrition in particular and health in general. Another possible reason is that beginning in the late 1980s, nurseries established under Zimbabwe's RAP which had primarily produced Eucalyptus began acting as distribution points for citrus trees as well (Campbell and Grundy, 1991:85). In this way, people seeking citrus trees may have also been exposed to extension or alternately, those participating in afforestation courses at nurseries (Deweese, 1992:49) may have acquired trees available there

extension, nearly half - 16 or 48% - planted gum trees alone, far more than the next highest figure for exclusively mango planters at 26% and well above the average of 10% for all species¹⁴⁷ Therefore, Eucalyptus planters may be planting more as a response to extension messages than is the case for those farmers planting other tree species

Of course, the above comments are fairly speculative with regard to the role of extension in tree planting. The association between extension and Eucalyptus in particular could be complicated by the practice of handing gum seedlings out for free during events such as National Tree Day. A number of planters may have received gums free of charge, therefore, the planting of gums could be associated as much with availability of stock as with farmers being influenced by extension to acquire and plant a particular species. Households unwilling or unable to purchase or produce tree seedlings otherwise might be especially likely to acquire seedlings in this fashion. Data from the study sites show that overwhelmingly the largest proportion of those women headed households - on average among the poorest in Zimbabwe's CAs (Fortmann and Nabane, 1992:10) - that plant exclusively one tree species are planting gums

¹⁴⁷ Among all Eucalyptus planters, that is both those receiving and not receiving extension, 39% planted only gums, a figure nearly twice that of the next closest group, exclusive mango planters, at 21%. These figures contradict the argument of Campbell and Grundy (1991:60) that "if a household had planted for purposes other than fruit provision, then in almost all cases they had planted fruit trees as well". Instead, from my research it appears fruit tree planters are much more likely to plant a variety of trees than are gum tree planters.

While forestry extension does appear to have had an influence on tree planting in Zimbabwe's CAs, assessing the impact is not a simple task. For example, while there is an association between extension and planting there was no significant association found between extension and the level of watering, fertilizing or protection of seedlings by farmers. The intention of this section has not been to provide a measure of exactly what the results of extension have been to date, clearly that is for more in-depth long-term research focused largely or exclusively on that topic. Instead the intention has been to argue that effects of extension may be quite diverse and depend on a range of complex factors that will have to be disentangled before a true assessment of extension can be undertaken.

The effect of subsidies on tree planting are, like extension, somewhat complex to evaluate. Subsidies for tree planting, primarily in the form of Eucalyptus seedlings given away or sold at reduced cost, have been a common feature of tree planting programmes in Zimbabwe¹⁹⁸ (Campbell *et al.*, N.D. 2, World Bank, 1991 in Campbell and Grundy, 1991:85). The subsidies available to farmers through trees produced under Zimbabwe's Rural Afforestation Programme are large, perhaps as much as Z\$847 per hectare (Deweese, 1992:49). It is difficult to argue with Deweese's (*ibid*) assertion that the subsidy gives rise to "equity and distribution concerns" as the subsidy will benefit those farmers able to set aside large areas for establishing

¹⁹⁸ In two adjacent study areas a teacher told me that the FC had been very active handing out free gum seedlings. However, according to the teacher, the commitment on the part of farmers to look after these trees had been weak and most trees had died, giving the farmers the benefit of the doubt, the drought at the time must also have made caring for the trees difficult.

woodlots considerably more than a poorer farmer wishing to grow a handful of trees for polewood

A number of questions have been raised regarding the necessity and effectiveness of subsidies for tree planting (Arnold, N D a.2) When farmers were asked in the Baseline Survey what form of assistance they needed, if any, to support their future tree planting activities, most cited improved extension and access to materials rather than grants of seedlings or financial assistance (du Toit *et al.*, 1984:111). Godoy (1992:720) argues that because seedlings represent a relatively small portion of the total investment required in tree planting, removing seedling subsidies is unlikely to have a significant impact on farmers' planting decisions In the case of Zimbabwe, Godoy's assertions may well be accurate if not for the same reasons. The effect of the removal of subsidies on tree seedlings - as is occurring in association with Zimbabwe's Economic Structural Adjustment Programme¹⁹⁰ (Campbell and Grundy, 1991:85) - will be largely restricted to Eucalyptus which makes up only a portion of tree planting activities in the rural areas²⁰⁰ Therefore the majority of tree plantings, involving fruit

¹⁹⁰ The impact of the Economic Structural Adjustment Programme (ESAP) on government expenditure raises serious doubts that guarantees of assured minimum prices for tree crops such as poles or fuelwood as suggested by some authors (Hegde, 1987:285-6, Hancock, 1987:3) could ever be implemented, although similar policies have proven effective in certain cases (Godoy, 1992:721)

²⁰⁰ The number of households effected by the reduction of subsidies and/or the free distribution of gum seedlings is significant in that 28% of tree planting households in the study area have planted at least some Eucalyptus However, given households often plant a number of different tree species, seen as a percentage of total household plantings - though not total trees planted as some gum plantations may consist of tens or even hundreds of trees - gums account for about 11% of all plantings

trees, will not see an immediate²⁰¹ impact of the phasing out of subsidies. Furthermore, while prices will rise for gum seedlings with the removal of subsidies²⁰², not everyone will be forced to pay the true costs per seedling - estimated at Z\$0.41 when nursery overheads are included (Campbell and Grundy, 1991: 85) - in government nurseries. Although he was the only independent seedling producer I spoke to, Mr. Bope quoted me a price of Z\$0.25 for Eucalyptus seedlings, much less than for fruit trees because gums are "very easy to grow". It seems that he will be more than able to compete with the government nurseries even at their current, still subsidized prices.

The actual effect of the removal of subsidies on Eucalyptus planting is difficult to judge. As is the case with all the commonly planted tree species in the CAs, most Eucalyptus planters do not purchase their seedlings; in fact 17 farmers who planted gums reported purchasing tree seedlings but 15 of them also planted other trees such as oranges, mangoes and pawpaws. Therefore, it can only be stated with certainty that 2 out of 84 gum planters actually purchased their gum seedlings. Unlike a number of fruit tree planters, no farmers were encountered who grew their own Eucalyptus trees from seed although it is, of course, possible, a more likely source of seedlings for the

²⁰¹ However, it is possible that as would be expected to occur over time with subsidized seedlings (Godoy, 1992: 720), in Zimbabwe's case Eucalyptus, higher seedling prices could lead to private, decentralized nurseries being established in the CAs resulting in lower prices due to competition and reduced transport costs. Increased numbers of rural nurseries catering to the demands of local farmers could lead to a reduction in fruit tree seedling prices which are currently fairly expensive relative to the price of gum seedlings.

²⁰² By 1991 prices had already risen to Z\$0.25 per seedling and could go higher as subsidies continue to be reduced (Campbell and Grundy, 1991: 85).

gum growers that did not purchase them would appear to be through free handouts from the FC or others. If the distribution of free gum seedlings is also a casualty of government cut-backs, farmers will be forced to spend money, or obtain seed for home production, to acquire Eucalyptus.

Paying out a relatively small amount of cash to acquire seedlings is not necessarily a deterrent to planting as has already been stated. However, there are some crucial, if obvious, differences between gums and fruit trees. Godoy's previous argument aside, he also makes a distinction between trees that produce commodities such as fruit and trees grown to produce wood, pointing out that production of the latter is rare without some form of 'enticement' to farmers (Godoy, 1992:720). The question is, how much of an investment are farmers willing to make to obtain gum seedlings? It is quite clear farmers are willing to go to some lengths to acquire fruit tree seedlings; can the same be said for trees that produce a wood crop?

The intention is not to suggest that the cultivation of Eucalyptus will stop in the face of reduced handouts of, or increased prices for, seedlings. Farmers planted Eucalyptus on their own initiative prior to the establishment of the RAP and there is reason to believe that some farmers will continue to plant for their own needs as well as a smaller percentage that will grow gums on a large scale for the market. The uncertainty lies with those who planted gums because they were provided to them free or at low cost, will these people continue to plant a wood crop for which the returns

seem low at best?

As Godoy (1992:719) points out, the rapid spread of tree growing for the market in the South occurred long before the intervention of international organisations in this area. Although commercial tree growing often developed on its own, there remain a number of avenues for external organisations to support these activities, including through the distribution of seedlings free or at reduced costs. Seedling distribution can have a dynamic impact on tree growing if farmers "face a well-developed demand for their output and can dispose of what they grow" (*ibid*). One can only speculate on the impact that seedling subsidies might have had in Zimbabwe over the past ten years if the focus of attention had been on fruit trees rather than Eucalyptus.

5.4 SUMMARY

Tree planting by small-scale farmers in Zimbabwe's CAs is a widespread and well-established activity, much of it occurring outside of forestry programme interventions. Given the lengths rural households go to acquire and care for tree seedlings, it is clear that many farmers see tree planting as an integral part of their household production system. At the same time, most planting involves only limited numbers of trees with few farmers planting anything that could be considered as a monoculture plantation or orchard. The relatively few large plantations under the control of individual farmers are almost always made up of Eucalyptus with the rest, by far the majority of

plantings, consisting almost exclusively of fruit trees scattered in the vicinity of the homestead and garden. Exotic fruit trees are the species of choice for planting, followed by trees to provide building poles, fuelwood provision appears to be only a minor factor influencing planting decisions. The approach to planting observed in Zimbabwe's CAs suggests that project interventions based on woodlot establishment will involve a fairly significant shift in the form of tree production currently in place.

The most common constraints to tree growing tend to involve environmental hazards, especially water shortages and termite damage²⁰¹; socioeconomic constraints on the other hand do not appear to pose as significant a problem from farmers' perspectives. Although farmers in the CAs do not have title to their land, the majority seem to feel secure enough in their access to the resource to make considerable long-term investments in tree planting.

The dominant form of tree growing in the CAs suggests an approach to planting concerned only with domestic consumption, the need for shade, or for aesthetic reasons; however, while these factors are important to a varying degree, they are by no means the only or dominant factors involved in motivating farmers' planting decisions. Establishing any sort of a 'hierarchy' of motivations for farmer tree planting is impractical but it does appear that the economic benefits of tree planting are of considerable importance in farmer decision-making. Alongside the wish to provide

²⁰¹ Which is not to suggest these biophysical factors operate in isolation since as already pointed out, levels of termite infestation may be related to a human activity, deforestation.

directly for household nutritional needs is the desire to grow trees that provide a supplementary source of cash with which to purchase food and other goods that may be impractical for the household to produce. The sale of tree products is by no means restricted to households with large numbers of trees. Farmers with as little as one tree reported selling fruit and among those households marketing mangoes (N-210), more than half had 11 trees or less.

There is no indication that tree planting in Zimbabwe's CAs is overwhelmingly either a 'rich' households' or a 'poor' households' activity. Furthermore, as will be explored in more depth in Chapter 6, there is no indication that the marketing of products from on-farm trees is similarly restricted to either group. However, as might be expected, those farmers able and willing to invest in more costly tree growing activities which entail risk but have the potential for the greatest returns, are generally members of the wealthier strata of rural society. The tree growing that most farmers engage in does not appear to involve a high degree of risk in the sense that tree crops make up only a portion, and often the lesser one, of the production system for most households. Only relatively few households have moved significantly out of traditional field crops like maize into a heavy emphasis on tree cash crops. However, in the face of poor returns to field crops, there is considerable interest in alternative sources of income, among them vegetables and fruit. It is also important to consider that, especially for farmers in the drier Natural Regions such as III and IV, there are considerable risks in attempting to stay with the *status quo* of relying on the production of rainfed crops.

Even if tree crops do not provide the financial returns that might be hoped for, tree planting may well remain attractive to farmers because trees provide benefits unavailable through other means²⁰⁴

Against the backdrop of considerable interest on the part of farmers in the economic benefits of tree growing, whether it be the primary motivator or an attractive 'spin-off' of tree planting, is the apparent lack of acknowledgement or misunderstanding of this fact by project planners. As Hancock (1987:2) argues

... existing afforestation strategies do not seem to be formulated around the fact that Zimbabwe's rural population are as responsive to market forces and economic gain as any big business.

Instead, forestry programmes have tended to emphasize the production of a species, in this case Eucalyptus, which although of some interest to rural households is by no means the tree type of choice for CA residents. While a market does exist for the poles produced from gum trees, the demand for poles is generally perceived by farmers as being more limited than the one for exotic fruits which have the added benefit of providing food for the family.

Without an acknowledgement of the importance of economic considerations in small-scale farmer decision making surrounding tree planting activities it is unlikely that the planning for forestry programmes will reflect the priorities of rural people. Unless the need for adequate returns from tree growing and the importance of linkages to the

²⁰⁴ Osemeobo (1989:126) provides a discussion of this process for smallholders in Nigeria

economic system is responded to in programmes, there is a likelihood they will fail "in the absence of sustained external support" (Cook and Grut, 1989:42). Therefore, while forestry extension and subsidies for tree planting can positively influence farmers to grow trees as seen in Zimbabwe, the presence of a viable market may be a more crucial factor in determining tree growing activities (Godoy, 1992:719, Foley and Barnard, 1984:87). Where tree planting is financially viable, providing attractive returns on the investment as appears to be the case for fruit tree growing in at least some of Zimbabwe's CAs, planting will tend to be self-sustaining (FAO, 1985:86). Only time will tell if the reduction of subsidies for Eucalyptus planting will have a negative impact on the planting of gums and, by removing the distortions created which favour these trees, help demonstrate to external organizations where rural peoples' priorities for tree planting lie.

Trees are much more than simply a source of fuelwood, or poles or even fruit, for a number of small-scale farmers trees are an integral part of the farm system, meeting household needs directly through the provision of goods and services and through the provision of income for purchasing other products and services off-farm. It is extremely difficult to attempt to generalize regarding farmers' motivations in tree growing; different households will have different perceptions of how trees fit into their production systems. Research from other areas of the South has shown that small-scale farmers' decisions to grow trees are frequently based on a range of factors, often interlinked, such as increasing population pressure, increasing labour costs and labour

shortages, decreased returns from annual rainfed crops, as well as expanding markets for tree products and linkages to wider markets (Arnold, N.D b.40; Michie, 1986.240) Given the various motivations acting to influence farmers to grow trees, it is perhaps to be expected that tree planting in the CAs shows a tremendous range in the forms it takes. Individual households will emphasize certain forms and levels of planting depending on a range of factors, including the amount of choice, therefore, trees will be incorporated into the production system differently by different households. While an effective strategy for forestry programmes would be to take rural households' desire for economic gain as at least one of the starting points (Hancock, 1987:1), another could be the form that farmers' tree planting already takes in the CAs. The dominant tree growing practices of CA residents, largely undertaken with minimal or no support from external organizations, appear to provide a fertile base for tree planting programmes that could respond to the varied needs of the different groups making up the population of Zimbabwe's CAs.

CHAPTER 6

THE MARKETING OF FRUIT BY COMMUNAL AREA FARMERS

6.1 INTRODUCTION

In terms of cash returns alone, fruit provides higher returns than any other tree product marketed in Zimbabwe's CAs. In keeping with the large numbers of households growing fruit trees and as might be expected with the motivations expressed for planting these trees, large numbers of rural residents are involved to a varying degree in the marketing of fruit.

This chapter examines in depth the marketing practices of small-scale farmers involved in the fruit trade in the CAs. Over-all participation in fruit marketing is examined, as well as a discussion of the varying importance of the different fruits that are marketed. The marketing system surrounding fruit sales is explored at length including the approach to harvesting and selling, the different market channels accessed and the various issues surrounding the pricing of the product. While the income received from fruit growing varies widely between households, an attempt is also made to describe the returns attained by households producing fruit for the market. Finally, a preliminary assessment is undertaken of the approach to organised marketing for fruit in the study area.

The sale of fruit is clearly of considerable importance to a significant portion of rural households and may in fact make a valuable contribution to household security by improving access to a range of essential goods, among them staple foods. At the same time, the returns to different households from fruit marketing vary widely; many households are at a disadvantage when it comes to accessing the market and receive lower returns as a result. Therefore, while fruit income is clearly important to many rural residents and a large number practice different strategies to improve the value of their marketed product, others suffer at the hands of exploitive middlemen and uncertain market access. To make fruit marketing a more productive and useful approach to improving rural incomes through forestry activities there is considerable room for improvement in the area of marketing activities.

6.2 PARTICIPATION IN FRUIT MARKETING

Households in the study area demonstrated widespread participation in the marketing of fruit. More than half of the households interviewed - 246 of 443, or 56% - reported selling at least one type of fruit. When those involved in buying and selling fruit, for example as local middlemen, are factored in, the total number of households in the study area involved in the fruit trade is slightly higher at 255 or 58% of the sample²⁰⁵.

²⁰⁵ 29 households reported involvement in buying and re-selling fruit. The difference of only 9 households between those only selling fruit and the total number involved in some aspect of the trade suggests that the majority of those involved in buying and re-selling also sell fruit they produce themselves.

The practice of marketing fruit appears to be fairly evenly distributed throughout the study area; although nearly 10% more households in Natural Region (NR) IV sell fruit than in NR II, the difference is not statistically significant²⁰⁶. However, a significant association was found between the number of fruit selling households and their location relative to the main road passing through the study area. Marketing participation among those households located adjacent to the road is 62%, compared to 51% for households located away from the road²⁰⁷. As will be further explored later in this chapter, the discrepancy in sales rates between households close to the road and those more remote could be due to a number of factors, among them better access to transportation and, therefore, markets and increased potential for sales to passer-bys as well as travelling middlemen.

A higher percentage of *de jure* female-headed households, that is households headed by widows or divorcees, reported marketing fruit than did *de jure* male-headed households, those headed by either a resident or absent male. However, the difference in levels of marketing between these households - female-headed at 62%, male-headed at 54% - is not statistically significant. Much the same situation is found when the data are broken down into socioeconomic groups. Using cattle ownership and the ownership of goods as proxies for wealth (see methodology), involvement in fruit

²⁰⁶ Percentage of households selling fruit in NR II is 52%, NR III, 53%, NR IV, 62%. Chi-square value = 3.51 with 2 degrees of freedom, not significant at the .05 level. The same significance level will be used throughout, therefore when results are described as 'not significant', they are greater than the .05 significance level.

²⁰⁷ Chi-square value = 5.82 with 1 degree of freedom and a significance of .0158.

marketing declines from those with high levels of ownership to those with little or none. Taking the ownership of goods as an example, participation in fruit marketing runs from a high of 70% for wealthier households, down to 60% for those with slightly above average holdings and 52% for households owning average and below average numbers of goods²⁰⁸. However, although there is an apparent decline in fruit marketing from wealthier to poorer groups, the differences between them are insufficient to be statistically significant at the 0.05 significance level²⁰⁹.

Among those households that are involved in fruit marketing, the majority (55%) only sell one type of fruit, another 28% market two kinds. The remaining 13% of sellers market from three up to seven different kinds of fruit. Even among rural fruit traders, it is clear that most concentrate on a single variety. 72% of traders reported buying and re-selling only one type of fruit. Only one of the 29 trading households reported undertaking sales of more than three different tree fruits.

²⁰⁸ Only 13% of households, arguably the 'wealthiest' in terms of ownership of goods, possess 3 or more of the following household goods: cars or tractors, bicycles, scotch carts, wheelbarrows and sledges. Households with 2 of these goods (18% of the sample) are above average, average households (30%) owning one of these household goods. 40% of households own none of the goods described.

²⁰⁹ Although it is significant at the 0.1 significance level (chi-square = 6.99 with 3 degrees of freedom and significance of 0.0723). When households owning no goods (n = 177) are compared against only those households with above average ownership, that is more than one of the goods discussed (n = 134), the latter group demonstrate significantly higher levels of involvement in fruit marketing (chi-square = 4.64, 1 degree of freedom and significance of 0.0313).

6.3 TYPES OF FRUIT MARKETED

Much as exotic fruit trees are the most commonly planted type of tree, exotics account for by far the largest share of the fruits marketed by CA farmers²¹⁰ While indigenous fruits are of great importance to the diet of rural people (Wilson, 1989:377, ENDA, 1991:1), their role in the cash economy is relatively small Only 4 of the 246 households that market fruit in the study area sell indigenous fruit

The most commonly marketed of the exotics, sold by 210 (85%) of fruit selling households or 47% of all households in the sample, is mango No other fruit comes close to the importance of mangoes in the market, the next most commonly sold is guava (by 65 households), followed closely by banana (62 households) A complete listing is provided in Table 6.1.

²¹⁰ This was also the conclusion of Chidari *et al* (1992:115) although they note that the percentages of exotic *versus* indigenous fruit sold do vary between sites While exotics appear to be always sold with more frequency than indigenous fruits, the authors speculate that those areas demonstrating relatively high levels of indigenous fruit sales may be areas of greater scarcity of these fruits creating a market for their sale

Table 6.1 Households Selling Fruit, Over-all and by Natural Region; Trade in Fruit

VARIETY	SELLING # (%)	NR II	NR III	NR IV	TRADING # (%)
Mango	210 (47%)	45%	41%	56% **	23 (5%)
Guava	65 (15%)	12%	18%	15%	7 (2%)
Banana	62 (14%)	6%	13%	24% ***	6 (1%)
Citrus	30 (7%)	10%	7%	3% *	5 (1%)
Other Exotic ¹	27 (6%)	9%	6%	3% *	1 (<1%)
Pawpaw	14 (3%)	1%	7%	3% **	2 (<1%)
Avocado	12 (3%)	4%	4%	0 **	1 (<1%)
indigenous	4 (1%)	1%	0	2%	0
TOTAL	246 (56%)	91 (52%)	63 (53%)	92 (62%)	29 (7%)

¹ 'Other Exotic' includes fruit such as mexican apple or mulberry.

level of statistical significance

* significant at 0.1;

** significant at 0.05,

*** significant at 0.001

Source: Questionnaire Data

As can be seen from the table, NR IV has the largest percentage of households in the study area participating in fruit marketing due to a significantly higher proportion of mango and banana sellers. The reasons for differences in the types of fruit being sold between NRs are not easily determined in all cases. However, it is possible to suggest a few reasons for NR IV's over-all dominance in the area of fruit marketing. Mutoko CA which loosely corresponds to NR IV in the study area has been described as a "natural mango area", because mangoes do well in the warmer climate of the CA which is essentially frost free (ADA Staff Interview; EEC, 1991:2). The warmer

conditions in combination with the presence of abundant groundwater relative to other CAs in the study area (Ministry of Lands, Resettlement and Rural Development, 1982a:215) result in widespread garden cultivation ideally suited to banana production. At the same time, citrus and avocado would also appear to have good potential for production in gardens because of fairly high moisture requirements (*ibid.*, 1982b:70). Clearly some other factors are contributing to the greater presence of these two varieties in NRs II and III. It is also possible that the organized marketing system in place in Mutoko which will be discussed later in this chapter has led to increased marketing of certain fruit crops in NR IV.

6.4 THE STRUCTURE OF THE FRUIT MARKETING SYSTEM

The structure of the marketing system for fruit in Zimbabwe's CAs has a number of different aspects. An obvious first step in the marketing system is the physical act of harvesting the product to be offered for sale; however, other factors impact upon this procedure. For example, who has the right to sell these products and control the proceeds?

There is also a range of possible routes that fruit can take from the farm gate to the consumer. These "alternative product flows" known as marketing channels involve a variety of different actors such as middlemen, both local and from other areas, wholesalers and retailers, and all the various activities associated with the functioning

of the market for fruit (Kohls and Uhl, 1980 in Pabuayon, 1990:45). As will be seen, the range of intermediaries associated with the fruit market provides some degree of choice for farmers, however, not all farmers are able to exploit these choices to their advantage

Pricing is another key aspect of the market system and as small-scale farmers become more integrated into the system, price becomes an increasingly important variable in marketing decisions (Pabuayon, 1992:43). Prices clearly vary due to a range of factors such as location, quality and temporal factors. A further issue is the source of information for decisions surrounding pricing.

6.4.1 Responsibility for and Control Over Harvesting and Sales

Through the questionnaire information was collected on who within the household has responsibility for harvesting and marketing fruit. In many cases, responsibility for harvesting and marketing are borne by different members of the household as can be seen in Table 6.2. Women's dominant role in both harvesting and marketing fruit is clearly apparent, only with the marketing of citrus fruits do men come near to women in their level of activity. Apart from the latter example, compared to women's role, men's relative role in marketing is generally even smaller than their role in the harvest.

Table 6.2 Harvesting and Marketing Fruit Within the Household

	HARVESTING ¹			MARKETING		
	WOMEN	MEN	CHILDREN	WOMEN	MEN	CHILDREN
Mango	61%	43%	46%	64%	40%	14%
Guava	74%	57%	44%	67%	46%	25%
Avocado	78%	44%	33%	78%	22%	11%
Citrus	64%	48%	52%	62%	58%	15%
Pawpaw	91%	9%	55%	82%	9%	27%
Banana	59%	50%	39%	59%	38%	30%
Other Exotic	48%	43%	48%	55%	30%	30%
Indigenous	100%	0	33%	100%	0	0

¹ The figures all total more than 100% because more than one segment of the household tend to participate to some degree in these activities.

Source: Questionnaire Data

The table also makes clear the key role that children's labour plays in harvesting fruit for sale. Children also make significant contributions in the area of marketing, although their role diminishes significantly in comparison to their level of activity in harvesting. For obvious reasons, children are only likely to participate in marketing that is undertaken at the local level²¹¹. In fact, some interesting parallels are apparent when we compare children's level of marketing activity and the number of households that report local sales of certain fruit. For example, mangoes are sold locally by 14% of selling households; this is the same percentage of households reporting that their children participate in the sale of these fruit. Guavas, sold locally by 29% of sellers,

²¹¹ As was clearly pointed out to me by one farmer, a single mother, who was unable to market her fruit in Harare because none of her children were old enough to go on their own and she could not afford the time away from her field crops.

are sold by children in 25% of relevant households. Although bananas, with a good local market accessed by 61% of sellers, do not show anywhere near this level of participation in sales by children, they do have as large a role in the sale of this fruit as for any other.

Responsibility for harvesting and marketing of fruit does not of course necessarily translate into control over how and when the crop is marketed, nor into control of the proceeds from this activity. A range of factors come into play in the debate over control of the marketing process as well as its proceeds. As argued previously, it is generally accepted that planted trees and their products are under the control of their planter although some trees may be considered more generally to be under the control of the planting household (Nhira and Fortmann, 1991:28). However, there are different aspects to the concept of control and the situation on the ground may be a good deal more complex. For example, as Fortmann and Nabane (1992:13) point out, domestic rights to trees, that is for use within the household, often differ from the commercial rights to sell products of the same tree²¹². While women, whether they planted the trees or not, generally have widespread rights to use trees within the household, in male-headed households they are in theory meant to ask permission from the household head prior to selling tree products (*ibid.*:13,16). In practice, commercial

²¹² Rights may also differ according to the *type* of tree involved. For example, womens' widespread rights to fruit trees do not appear to carry over into trees which are more a part of 'mens' domain'. It is highly unlikely women would ever attempt to sell gum poles - generally considered under the control and management of men - without their husband being present, although women might on occasion use the trees for domestic purposes (Fortmann and Nabane, 1992:14,17).

sales often go on without permission and without the knowledge of the male household head, especially if he works in town. *De facto* female heads of households are allowed to sell fruit without waiting for their absent husbands' permission but it appears they are meant to inform the male head of the sales when he visits the home, a practice not necessarily adhered to (*ibid* 14,16,20)

Whatever may be considered to be "the ideologically proper hierarchy of property rights" it is perhaps most accurate to consider the control over trees and their products as "negotiated ground" (Fortmann and Nabane, 1992:14-15) While many men might argue, as stated in Gumbo *et al.* (1990:201), that trees in the homestead are the property of the household head, there appear to be significant differences in how the situation is interpreted by men and women. Male and female members of the same household may hold significantly different views on not only who controls the trees they themselves planted but who controls the products of trees planted by the other person. In summary, Fortmann and Nabane (1992:15-16) found that male household heads perceive their control over household trees to be much greater than women who, in turn, assert "rights over the trees they planted but also over the trees their husbands planted."

Interviews in the study area also support the reality of womens' extensive *de facto* rights to market tree products from the homestead. One women farmer reported that while she and her husband planted trees together, from the time they began to bear

fruit she has always controlled their sale and the disposal of the cash they generate, a situation she believes holds true for other households in the area. Of some interest in this case is the question of control over different types of crop and their location. Mrs. Kabasa stated that while she controls the money coming from fruit, her husband controls the money coming from the sale of excess garden produce. However, although bananas are a garden crop, they are in fact a fruit and the one crop from the garden that she has the right to market. It appears therefore that control is more a function of the type of crop rather than the location in which it is found²¹³.

Women in households where the supposed male head spends large portions of the year working in the city tend to make most of the decisions not only regarding the disposal of fruit but also on occasion for running the farm. As suggested earlier, details of sales transactions may not always be shared with husbands upon their return to the homestead. There are a few reasons for this reluctance on the part of wives to share information on their fruit sales. Women may have legitimate fears that their husbands will demand the money then spend it on beer or their girlfriends. Women may also need the money for the purchase of certain household goods; therefore, even if a husband refuses to allow the sale of fruit for some reason, a wife may continue to sell, disposing of the income discretely (Fortmann and Nabane, 1992:20).

²¹³ It appears that the husband does retain some influence over the disposal of, at least, the banana crop. He can ask if the bananas are for sale or home use and, if they are to be marketed, he can ask her to remove some for family consumption.

A case with some similarity to the situation described above was encountered at a household visited in the study area. Although the household was male-headed, the husband spent most of the time in Harare. The wife provided details of her activities selling significant quantities of fruit to buyers who came from outside the area. As we carried on the discussion, the husband suddenly arrived from town. To gain his perspective on the marketing process, questions as to fruit selling were repeated to him. We were surprised to hear that, in the husband's opinion, the household sold no fruit! Somewhat confused, but wishing to avoid precipitating any problems for the wife, we did not attempt to clarify the reasons for this discrepancy. It is possible that there were reasons other than deliberate deception for the husband's ignorance. For example, it may be simply that the husband was out of touch with the day to day running of the household. In any case, the encounter provided an interesting example of vastly differing perspectives on the marketing of fruit within one household.

Women are clearly largely responsible for much of the activity in fruit marketing at the household level. It is also apparent that although their control over the actions and proceeds of selling fruit is by no means assured in all cases²¹⁴, women stand to gain access to disposable income through the sale of fruit. The actual returns from the activity do, however, depend to a large degree on the marketing channels they are able to access.

²¹⁴ For example, it appears that among the largest growers *ie.* those households that rely on the proceeds from fruit sales for a very large proportion of household income, male household heads are firmly in charge of the process and the proceeds.

6.4.2 Marketing Channels for Fruit

Fruit-selling households have the potential to access a number of different channels for their produce although, in practice, certain channels dominate over others. The channels for fruit sales can be divided into two main sectors, formal and informal, but by far the majority of CA farmers' production passes through the informal sector. The informal sector should not be assumed to operate only within the local CA economy; although there is a market for exotic fruit within the CAs, it is far surpassed by the informal markets operating within Zimbabwe's urban areas. Three main markets exist for fruit from CA farms: directly to local consumers, sales to middlemen, either from the local area or from outside, generally Harare; and the direct sale by farmers at the Producers' Market at Mbare Musika to market vendors, hawkers and other buyers. Much less commonly farmers may sell to the Independent Market, a wholesaler in Harare that trades produce for farmers on a commission basis (EEC, 1991:37), or sell direct to the supermarkets or other buyers of more specialty products.

Local Markets

While the market for fruit in the rural areas is nowhere near as large as the urban market, it is by no means inconsequential, nor is it consistent for all varieties of fruit. It is clear from the data collected in the study area however that the view of the rural market for fruit as "at best ... poorly developed" (Bradley, 1990:18) is not completely accurate. Nor can it be stated that if rural people "cannot gather from their own

resources (either wild fruits or home-grown exotics), they go without" (*ibid.*).

In the questionnaire, 235 households or 53% of all respondents, reported purchasing at least one type of fruit over the previous year. In fact, the majority of purchasers bought more than one variety of fruit, the average being three, with the top 17% of buyers purchasing six or more varieties. While not all of this fruit was necessarily purchased in the rural areas - household members sometimes purchase fruit when they are travelling, occasionally to bring back to the rural areas for their family to enjoy - from the more in-depth interviews as well as the data on local fruit sales, it appears a reasonable amount of fruit is purchased locally. However, the type of fruit people are interested in purchasing shows considerable variation as can be seen in Table 6.3.

As can be seen from the table, the local market for fruit is by no means consistent across all varieties. Not surprisingly, the fruits rural households least commonly report purchasing are those that are available either from communal grazing or forest land - such as indigenous varieties²¹⁵ and, in a few areas, guavas - or those that are grown by a large number of households such as mangoes and guavas and are therefore generally available even if not from family trees then from those of a relative or friend²¹⁶. The

²¹⁵ The high percentage of indigenous fruit sellers marketing to local people may appear to contradict the assertion by Gumbo *et al.* (1990:204) that "the principal cash market for indigenous fruits is outside the area." However, the number of households in the sample actually selling these fruits is so small ($n = 4$, 1% of the total) as to call into question the reliability of using these figures to draw any firm conclusions.

²¹⁶ The fairly low level of purchase of 'other exotics' may stem from factors such as limited supply or simply less demand than is present for other exotic varieties. It is important to remember that other more minor factors, many of which I will not touch upon, some because I did not become aware of

Table 6.3: Marketing Outlets for Fruit

Type of Fruit	Buying Households # (% of all households)	Selling Households Who do you sell to? ¹			
		Local Consumer Direct	Local Middlemen	Outside Middlemen	Market Vendor/Hawker
Mango	42 (10%)	14%	44%	46%	31%
Guava	64 (14%)	29%	46%	40%	29%
Avocado	123 (28%)	58%	25%	17%	17%
Citrus	197 (44%)	40%	40%	23%	20%
Pawpaw	152 (34%)	57%	29%	0	0
Banana	146 (33%)	65%	27%	3%	7%
Other Exotic	72 (16%)	48%	30%	4%	15%
Indigenous	10 (2%)	50%	0	0	25%

¹ These figures may not add up to 100% because first, one household may sell to a variety of buyers and second, for those that equal less than 100%, some buyers failed to provide information on their market outlets

Source: Questionnaire Data

largest market for an exotic fruit in the rural areas appears to be for various types of citrus fruits such as lemons, oranges and naatchies (tangerines)²¹⁷. If I had separated out the different citrus varieties, I am fairly confident the market would have shown some differentiation here as well; lemons are more common and have less of a market in the rural areas than oranges or naatchies, both of which must be 'imported' at times into the CAs to meet the demand.

them, are at work shaping the demand for fruit in rural areas. For example, one farmer told me that it is easier to sell bananas locally because people with young children that are unable to eat mangoes will purchase bananas for them to eat instead

²¹⁷ I am unclear of the origins for the local name *naatchies* for tangerines, nor does there seem to be much agreement in the literature as to how exactly it should be spelt *ie. naatchie, naachi, naartjes* or *naartjies*. In the end I settled on one of the spellings used by Gumbo *et al.* (1990:205), *naatchies*.

Household interviews support and clarify the view of the local market provided by the questionnaire. For certain fruits such as avocado, farmers told me that there was no need to take them for sale in Harare because of the ease with which they could be sold locally. Some farmers mentioned that buyers will even come to the house looking to purchase avocados, sometimes negotiating pre-harvest agreements to purchase fruit when they are ripe. Where growers are in the vicinity of schools, pupils and teachers often provide an excellent market for certain fruits, especially oranges and bananas. Other factors also shape the nature of local markets: gluts and shortages of certain fruits can manifest themselves in a highly local fashion. For example, while it appears that pawpaws generally have a strong local market, one farmer mentioned to me that in her area at least there was a glut of the fruit making it rare for local people to purchase them. Other farmers, in areas where they are the main or only producer of a certain fruit due to factors such as their control over a large garden area good for banana growing, find they have an excellent local market where demand tends to outstrip supply. Local markets can also serve as useful alternatives if the amount of fruit to be sold is too small to warrant a trip to sell in Harare. In these cases, even fruit with an otherwise small local market can find buyers if prices are perhaps reduced to a level that local consumers find attractive.

While the data for fruit selling households provided in Table 6.3 appear to suggest that the local market for fruit is among the strongest of all the outlets, this is somewhat misleading. Local markets are quite strong for certain fruits, in fact all

those other than mango and guava; however, when we compare the results summarised in Table 6.1 showing the total number of households selling fruit, it is clear that most of the varieties with a strong local market are actually sold by very few households. The two most widely marketed varieties - mangoes and bananas - are in fact the two varieties that have the weakest local markets. It is clear that to examine the largest market for fruit grown in the CAs we must look beyond the area of production.

Sales to Middlemen

Given the large role that middlemen play, especially in the marketing of the most widely sold fruit, mangoes, it is clear that these market intermediaries are key players in this area of the rural economy. As already described, while the simplest market transaction may be the sale by a farmer direct to the consumer, these transactions do not dominate the market system for fruit in the CAs. In fact, Pabuayon's (1990:47) assertion that agroforestry farmers generally "perform very limited marketing services" such as storage, transportation and distribution to consumers appears to hold true for CA fruit producers. Instead of farmers, marketing services are provided by private middlemen who in turn capture the value added through these services (*ibid.*).

Middlemen who buy and re-sell fruit produced on CA farms, take a number of different forms in practice. Some are based within the local areas themselves, moving around with scotchcarts²¹⁸ and consolidating produce from different farmers. These

²¹⁸ Although one middleman had the women in the household headloading the fruit from individual farms back to the homestead to await pick-up

middlemen then move the fruit to main roads²¹⁹ where, through various means, they transport it to markets such as the Producers' Market (PM) at Mbare. Middlemen may move fruit with trucks they have hired, they may simply pay for space with private transporters, or they may take advantage of their rights to move goods if they are members of the organized marketing system run by producers and the Agricultural Development Authority (ADA)²²⁰. Whatever the transport system being relied on, upon hearing the time for arrival of the vehicle, the middleman will move around telling farmers to pick the fruit and take it to a particular site for pick-up. Farmers may or may not be paid at the time the fruit is picked up, some middlemen prefer to pay after they have sold the fruit, a practice that will be discussed later in the chapter. Many local middlemen act in that capacity part-time, supplementing their income from the sale of their own farm production or other earnings.

A large number of the middlemen buying fruit in the study area also originate from outside the area, sometimes travelling long distances to make their purchases. These middlemen come with their own transport, most of which appears to be hired in Harare on a trip by trip basis. Depending on the size of the truck, the rental fee ranges from between Z\$500 and Z\$700 (for a 5 ton vehicle) up to Z\$1500 to Z\$1700 (for a 14 or 15 ton truck). Middlemen will sometimes share the cost of the largest

²¹⁹ By 'main roads' I do not mean roads that are paved or even major thoroughfares although they may be the points of contact for local middlemen and transporters. Instead, 'main roads' simply refers to those that transporters and/or bus services move along.

²²⁰ This organised marketing system will be discussed later in the chapter.

vehicles with another buyer. The only notice that seems to be given to farmers that an interested buyer is in the area is the middleman shouting out from the moving vehicle that he is buying fruit of one kind or another and will be returning at a certain time. Farm households must then work quickly to pick as much fruit as possible before the middleman returns. Prices are not discussed until the time when the vehicle returns to pick up the produce. For the most part, middlemen from outside the local area pay cash for the fruit they purchase largely because they may have no on-going relationship with producers. As many of these buyers are unknown to the farmers they purchase from, farmers are highly unlikely to let their fruit go without payment on the spot. In fact, 95% of farmers over-all reported 'almost always' receiving immediate payment for their fruit, the remaining 5% receiving immediate payment 'about half of the time'

Even the most remote sites can be visited by middlemen. Farmers in the most remote part of the study area in northern Mutoko, located at the end of a very poor road, reported being visited by 'plenty' of mango buyers during the November to January season. Because it is so far into and out of the area, trucks wait while all the families of the area pick their trees clean of fruit, to avoid going away with less than full loads, buyers even take fruit that is still green.

For the most part, outside middlemen sell to the same purchasers as local middlemen, although the former group generally deal in much larger volumes of produce. Vendors

and stall holders at Mbare market make-up the largest part of the market, the remaining produce being purchased by retailers and the general public. The important difference noted between local and outside middlemen is that the latter may have a rented stall in what is known as the 'Wholesale Market' at Mbare which provides a better facility for marketing²²¹. The name 'Wholesale Market' may actually be misleading as one of the leading functions of the market appears to be breaking up large volumes of produce into more manageable amounts for retail trade (EEC, 1991:40).

Middlemen clearly play a major role in the area of fruit marketing. Unfortunately, for most CA farmers, this role appears to be anything but benign. The main complaint that farmers have regarding the activities of middlemen centres on what the former perceive as the excessive profits made by the latter at producers' expense. Such a perception is by no means unique to Zimbabwe. In the more general context of rural areas in the South, Pabuayan (Pabuayan, 1990:47) points out that

the marketing system is considered inefficient and is associated with exploitation by middlemen. The overall impact is low producer prices, high consumer prices and large marketing margins resulting from high marketing costs or above-normal profits of middlemen, or both...

²²¹ Unlike the Wholesale Market which is a covered area, the PM is exposed to the elements and a site must be secured anew each time a seller wishes to market there. Furthermore, the PM closes each day at 10.00 am, and any remaining produce sellers wish to market the next day must be stacked against a wall to allow for cleaning of the facility and a storage fee paid. It has also been pointed out that during peak seasons for produce, the PM "becomes extremely congested" (EEC, 1991:39).

²²² More specific examples of excessive profit-taking by middlemen in tree product markets can be found in Saxena (1991) for India and Alvarez-Buylla-Roces *et al.* (1989) for Mexico.

Determining the profit margins on fruit for middlemen was unfortunately not straightforward due to a number of reasons, among them unclear and confusing information on pricing and the lack of consistent measures of volume which made mark-ups very difficult to determine. However, as will be discussed in more detail, there is evidence to suggest that some middlemen do derive large profits, seemingly at the expense of CA producers. Given that there are apparently a large number of buyers operating in the CAs, how is it that these firms are able to operate in a monopsonistic manner, that is, as if there are few available alternatives for farmers to market their produce?

To understand the position of power that middlemen hold in the fruit marketing system in the CAs, it is essential to understand some specific factors. Farmers producing highly perishable goods such as fruit are in a vulnerable position because of the need to get their produce to market quickly to avoid large or complete losses due to spoilage (ENDA, 1991:39). Producers without access to transport are thus easily exploited by middlemen with the capital and necessary facilities to take advantage of the situation (Pabuayon, 1990:47). The marketing system in place also places farmers at a disadvantage *vis-à-vis* middlemen because of the already described method by which the sales are organised. As farmers have already picked the fruit by the time the truck returns, farmers are under considerable pressure to sell to that buyer. Most of the commonly marketed fruits have a relatively short shelf life once removed from the tree of approximately 2 - 4 days, given the less than ideal conditions surrounding

the marketing process, rates of decay may be even faster (ENDA, 1991 40, annex 5)

The unpredictability of buyer's movements means there is little or no chance of farmers knowing when they will have another chance to market their crop. Therefore, as one farmer put it, "(we) want to sell for something, however little, because it's better than letting (the fruit) rot."

The unreliability of transportation in the CAs means middlemen are able to play against farmers' fears of gaining no returns for their crops. Even in areas where the Mashonaland East Fruit and Vegetable Programme (MEFVP)²²³ is operating and providing access to transportation to the markets at Harare at a reasonable rate, members may not feel confident of being able to find space for their produce. Although limits are apparently set on the number of boxes that can be transported per person to allow all members a chance to send their produce²²⁴, more than one farmer complained of being unable to obtain space for their goods. Drivers of the trucks have set routes but may be full by the time they reach the end, it was also suggested that some drivers "play favourites" presumably by allowing some farmers to send more produce at the expense of space needed for other members' fruit. If farmers have already picked mangoes - which can only sit for 2 or 3 days before spoiling - in expectation of transport being available only to find the truck is full and another will not arrive for 2 days, it is no surprise that their confidence in the system is shaky.

²²³ The Programme will be discussed in depth later in the chapter

²²⁴ The limit depends on the estimated supply of produce, therefore if amounts are low from most households, others can send larger amounts

One farmer told me that "cheats" from Harare will come with a large number of trucks and cover the MEFVP route ahead of time in order to 'capture' the fruit of nervous farmers unwilling to risk the non-arrival of the Programme vehicle. However, the certain return offered by these middlemen does not come without a price which in this case is a price per box approximately one-fifth of the price at Mbare market.

Middlemen use a range of methods to obtain goods from farmers at low prices. The quality of the fruit may be questioned, middlemen offering lower prices for what they argue is sub-standard produce. From the questionnaire data, it appears disagreements between farmers and buyers over the grade and weight or volume of produce may be fairly commonplace: 37% of respondents reported disagreements over the grade of fruit, while 29% said they had disagreements over the amounts being sold. In total, 40% of marketing households reported problems with buyers over these two issues. In my interviews with farmers, the volumes being sold appeared to be a particularly contentious issue between them and middlemen. Middlemen employ measures of a considerably different size than those used by farmers to sell their produce at Mbare; many buyers bring boxes that are 2 to 4 times the size of farmers' boxes yet do not offer a price that comes anywhere near to reflecting the increased volumes involved²²⁵.

Farmers experience different problems with middlemen who wish to pay for produce

²²⁵ Of some interest were farmers' reports of middlemen using mysterious 'expanding' plastic boxes that could swallow huge amounts of fruit resulting in farmers receiving less money. Unfortunately I was never able to locate one of these boxes to clarify how they worked, however, enough farmers reported experiences with these boxes to convince me they existed in some form'

after selling it themselves. A few sellers suspected they had been defrauded by local middlemen who provide various reasons why they are unable to pay farmers for fruit they took away to sell. One farmer reported it was not uncommon for the middleman to say that the truck had broken down and that the fruit had rotted before it could be sold; there was no way the farmer could know whether or not the produce had in fact been marketed. In this particular case, when the farmer does receive payment it may be less than originally agreed to because of arguments by the middleman that diesel prices are high or some other reason

Given the litany of problems farmers can provide regarding their dealings with middlemen, it is perhaps not surprising that their view of the service provided is less than complimentary. Comments such as "they are thieves" are commonly heard as are "(they) come with low prices so they can gain elsewhere " Local middlemen, even though they may be known by their suppliers, often come in for especially harsh criticism: as one farmer put it, "there are bigger thieves in (the area) than in Mbare market." Some interviewed middlemen freely admitted they cheated farmers. One group of buyers told me they normally have to pay out Z\$5,000 to farmers to fill their truck but when they 'successfully' cheat farmers, it may cost only Z\$3,500 This group described themselves as "professional *makoronyera*", the latter being Shona for 'buyers and sellers' but in popular terms, indeed the manner in which the aforementioned group used it with some pride, it means 'cheats'.

There is no question that middlemen wield considerable power in their dealings with farmers and that, not surprisingly, this power is generally put more to the advantage of the middlemen than anyone else. However, the tales of exploitation need be tempered somewhat by a more balanced view. Many farmers could in fact be worse off without the marketing services provided by intermediaries. For a number of farmers, the amount of produce they have to sell is too little to justify a journey to Harare and where little or no local market exists for the produce, middlemen may provide the only outlet. Alternative methods to reach market may be limited to the bus or, in some areas, the ADA truck; for some farmers, the cost of fares, the delay in selling if the market is flooded and the problems with finding accommodation in Harare simply introduces too many problems and uncertainties into the marketing process. As one farmer put it: "I am sure of \$8 [price per box he received from middlemen], so best to take it."

Alternatives to middlemen may not be available for other reasons. For households headed by widows or divorcees, marketing their fruit direct to Harare may create practical problems. Transporting by bus or ADA vehicle requires the use of some sort of container (metal buckets in the case of the former and wooden boxes for the latter) to hold the fruit (ADA Staff Interview)²²⁶. Although the problem is not limited to women-headed households, two members of this group reported the lack of these

²²⁶ The inconsistencies in container requirements alone place burdens on farmers needing to transport their crops. When selling to middlemen there is obviously no need for a container as the fruit is simply dumped into the truck after the sales volume is established.

boxes²²⁷ as constraining their ability to transport their produce to sell in Harare. The boxes themselves may constitute a not inconsiderable investment for households with limited means nor may obtaining the boxes be a straightforward task²²⁸. Furthermore, selling fruit to Harare buyers means travelling there yourself which may present problems for women-headed households. Sales trips mean "too much time away from fields" which for one farmer was the difference between her and other women. "they have husbands who continue to work in [the] fields while they go to market."²²⁹

The presence of middlemen as a marketing outlet for fruit can also provide some degree of choice for farmers. As already noted, many producers sell to a range of different buyers over the season and when amounts to be sold are small, it may be more economical to sell to a middleman than to travel to Harare to sell. Marketing strategies can also vary, and preferred outlets with them, depending on the time of the season. An example will help clarify the practice of changing market outlets. Early on in the research, one farmer was asked which of the market outlets he preferred for selling mangoes. Mr. Nyahunure explained that his preferences varied according to

²²⁷ One woman said the boxes were too expensive to purchase ("no husband [so] no cash to buy boxes") while the other said she owned boxes once but after her husband's death, they 'disappeared', apparently mainly to her in-laws. She has no spare money to purchase boxes now.

²²⁸ One farmer in central Uzumba reported purchasing the boxes by Mbare market in Harare although whether this was the closest supplier or simply provided the best price was unclear. It seems likely that the small carpentry shops seen operating in some of the rural areas could also produce the boxes. In either case, farmers in more remote areas would face some expense and logistical difficulties in transporting boxes to their farm.

²²⁹ Other households, such as those made up of elderly couples, may also be unwilling or unable to make trips to Harare to market fruit.

the place in the season at the beginning of November, very early in the season, he prefers to take the fruit to market in Harare, while during most of the rest of the season he prefers to sell to middlemen. His choice is influenced by the selling price relative to the cost of transportation. At the start of the season, the first boxes of mangoes he sells attract an extremely good price, perhaps as much as Z\$30, but by the beginning of December the price may have dropped into the Z\$10 a box range. At a price of Z\$30, a Z\$1.50 a box transport charge is fairly minimal given the returns; however, at Z\$10 a box or less, the same charge is quite a sizeable percentage of the final sale price. He and other farmers felt the cost of transporting and selling the fruit at the lower price rendered the practice not financially worthwhile. Although the price paid by middlemen is considered poor and significantly less than even the lower price farmers can obtain at Mbare, "the money ends up much the same" when the costs of transport and selling are factored into the equation

It must also be considered that while middlemen appear able to reap significant profits at times, the practice of buying and re-selling fruit is not without its risks. Among local middlemen dependant on transportation other than vehicles they hire themselves, they are as vulnerable as farmers, if not more so, to the vagaries of the transport system. One middleman based in Charewa Business Centre in the study area reported he had an agreement with MEFVP to supply 20 boxes of top quality large size mangoes (popularly known as 'Bull mangoes'). When the truck failed to arrive, the fruit spoiled, leaving the middleman with a loss of close to Z\$200 in payments he had

made to farmers. This experience was shared by other local middlemen reliant on MEFVP for transport. Even among middlemen who hire their own transport the business is not without its risks. These buyers must pay out large sums of cash to hire a vehicle and to pay the farmers for fruit; sometimes the money must be borrowed against the possible earnings from a trip. A number of these middlemen complained of having problems filling their vehicles due to the drought and the number of other buyers creating a heavy demand for the produce. Even when they are able to purchase a good supply, the volatility of prices at Mbare market can cut into the profits anticipated at the start of the purchasing trip. Gluts in the market can lead to difficulties in selling the fruit and losses of Z\$1,000 or more per trip. One farmer who acts as a middleman during the mango season, claims he may have to work a month essentially for nothing to pay off one bad trip. Although he may continue as a middleman in the future, the volatility of prices and difficulty in obtaining adequate loans means the business is a risky one; as he puts it, "selling mangoes is like gambling." Some middlemen lack a stall or other site from which to sell their produce and one remarked on the risks faced in arriving with large lots of fruit than can easily be stolen and mixed with other people's fruit.

It is clear that middlemen are not a homogeneous group but need to be differentiated, at minimum, into those that are generally well organised and fairly consistently earning large profits and those that are more marginal, perhaps only entering the business on a part-time basis. Coming to a firm conclusion on the benefits of

middlemen is a complex task. It may be true that the prices offered by middlemen are often poor, but their costs are not insignificant and when considering mark-ups it is essential to consider that they add value to these products through their transporting and marketing activities (Cook and Grut, 1989:39). Also, as one farmer and former middleman pointed out, by selling to middlemen the very real risks of transport breakdown and spoilage are avoided. On the other hand, the general contemptuous attitude which most farmers demonstrate towards middlemen seems unlikely to be based only on a misunderstanding of the latter's beneficial role. The imbalance in power between the two groups means that farmers generally appear to have little control over the market process. However, with all its faults it seems likely that, until alternative methods of getting fruit to market become widespread and more dependable, the system of middlemen buyers will continue to play a major role in fruit marketing.

Direct Non-Local Sales

As is already clear from the preceding discussion, many producers travel to other locations, often quite distant, to market their fruit. Far and away the most common outlet for sales of this nature is the Producers' Market (PM) at Mbare where most CA fruit whether transported by private or ADA trucks or public transit ends up (EEC, 1991:37). Arrangements are made by the farmer²³⁰ for pick-up at the farm gate if transport is by truck; if by bus the farmer may be able to flag a vehicle down if he or

²³⁰ Farmers may face some travel to arrange for the first pick-up of the season, or they may simply send a message with another farmer. During that first trip farmers will arrange any future trips.

she is located along a route or the farmer has to get the produce to a stop. Farmers are not permitted to ride with their produce on ADA trucks nor it seems on private transporters but instead must take a bus to Harare. Depending on bus and transport schedules, farmers may have to leave before their fruit is picked up which can lead to numerous arguments over the amounts that were to be picked up and so on (EEC, 1991:37). Pick-up of fruit generally occurs the day prior to selling to allow for transport of the fruit, obtaining a 'pitch' for selling on and unloading at Mbare (*ibid*)

In order to sell at the PM, farmers and others must register and obtain a Mbare Musika Registration Card which confers membership in the Mbare Musika Horticultural Farmers Association and costs approximately Z\$16 (Interview Notes, EEC, 1991:38). Membership gives the right to sell in the market upon payment of a pitch rental fee, according to farmers in the range of Z\$5 - Z\$7, but does not guarantee that a site will be available. However, farmers claimed they could more often than not 'squeeze in somewhere' even when the Market is crowded. The PM is open for selling from 5:00 am to 10:00 am and for deliveries from 2:00 pm until 6:00 pm. In practice, while the selling hours appear closely observed, delivery hours often go on much longer, occasionally into the night and through to the next marketing period as concessions are made to assist late arrivals (*ibid*: 39). Sellers normally spend at least one night, sometimes two if demand is slow, generally in poor accommodations such as sheds in the market. As the Market is simply a walled-in, open air, paved area with painted lines delineating individual pitches, produce is

vulnerable to spoilage caused by exposure to the elements especially any fruit that remains unsold after the first marketing opportunity.

Anyone, including wholesalers, shop owners, stallholders, hawkers and the general public, is allowed to make purchases in the PM but the largest buyers appear to be stallholders and hawkers (*ibid*:38; ADA, 1990:63). The latter two purchasers make-up the complex informal fruit market operating in the urban area and for simplicity will be grouped together and referred to as 'vendors'. The EEC study (1991:38) states that in the early 1980s there were 26,000 registered 'hawkers' which includes all those, stallholder and street hawkers alike, who sell commodities mainly in Harare's high density suburbs and probably as many that are unlicensed and operating illegally. It is unclear where the EEC data come from or who exactly is included in that figure. The 1986 study by Horn on the informal fruit and vegetable market in greater Harare provides a figure for fruit and vegetable vendors of approximately 3,500 which the author acknowledges under-represents the true number of hawkers who are mobile and fear identification due to the illegal nature of their activities (Horn, 1986:2). It was not completely clear from Horn's figures which percentage of these vendors are operating with some degree of legitimacy and which are not but periodic harassment by police appears to be a common complaint. Almost all (97%) vendors are women (*ibid*:4), most of whom were found to be widowed, divorced and/or from poor households and reliant on vending income for the majority of household needs (ENDA, 1991:37).

Some confusion was encountered both within the literature and between the literature and field observations regarding regulations on selling from the PM. While it is technically true that "anyone may buy in the Producers' Market" (EEC, 1991: 38), various regulations have the practical effect of rendering the market less free and open than might be believed from the above comment. On the other hand, regulations decreeing that producers and others selling in the PM are "only allowed to sell their produce to wholesalers not to retailers or other customers" (ADA, 1990: 57) that may well have held sway at the time of the ADA report are no longer in effect or, at least, are not enforced. The regulation reported by farmers which hampers their ability to sell freely to any buyer is one that does not allow sales in the PM of less than one crate of produce; according to one farmer, the regulation is to protect the main market for vendors - consumers who purchase small amounts - from competition and farmers selling in smaller amounts can be arrested.

Unless consumers are interested in purchasing bulk amounts direct from producers in the early hours of the morning, it is clear that the regulations on marketing act in practice to limit the ability of the latter group to compete freely with other sellers at Mbare. Having said that, it is my impression from interviews with farmers that most prefer to dispose of their produce quickly, albeit of course at a reasonable price, which generally means bulk sales in varying amounts²³¹. Selling fruit 'one-one' to consumers

²³¹ The only obvious cooperation among sellers that I encountered was a small group of farmers the members of which took turns selling fruit for the group as a whole. A member of this group told me that on occasion their entire truck load can be sold to one wholesaler at Mbare.

may be attractive to some because of the increased returns but for most it is more likely to be a laborious process requiring longer periods of time away from other farming activities under difficult living conditions.

Although purchasers at the PM mainly consist of vendors and wholesalers²³², there was no clear pattern of preferences provided by farmers. Among those that expressed an opinion on selling to vendors, mainly from the high-density suburbs, views appeared evenly split. Complaints about vendors centred around the low prices they offer for fruit and a perception that their profits are much higher relative to farmers. On the positive side, vendors were seen as paying higher prices than Mbare wholesalers. In either case, farmers receive immediate payment for their produce. Generally speaking, there were far fewer complaints about the functioning of the PM at Mbare than there was about the dealings with middlemen at the farm-gate.

Although much less common, farmers also sold direct to buyers other than those discussed above, some still at Mbare, others within the Harare area and others much further afield. Some buyers who purchase at Mbare actually come from a considerable

²³² It should be noted that vendors also purchase substantial amounts of produce from the Mbare wholesalers, presumably if the goods they require are not available at the PM or if they reach Mbare after the PM has closed for the day. It would appear that vendors have a preference for purchasing direct from farmers (Horn, 1986: 12), a not surprising situation given the problems many encounter with Mbare wholesalers. A popular practice among certain wholesalers is to put grass at the bottom of packages of fruit to give the impression of a full container (*ibid.* 13, pers. obs.). Further tactics of these 'makoronyera' include rotten goods underneath attractive ones and charging double or otherwise threatening vendors if they attempt to inspect the produce (Horn, 1986: 13).

distance away²³³, attracted by the supplies of produce which are funnelled through it (ENDA, 1991:33-4, ADA, 1990:53). One farmer stated he preferred selling to these 'out-of-town' buyers because they tend to pay better prices than vendors from the Harare area. Although only a relatively small number of farmers utilised them, there are quite a wide variety of other outlets outside of Mbare but still within the Harare area where farmers sell fruit. Among these outlets are the formal sector wholesalers such as the Independent Market and FAVCO which act as commission agents for farmers (EEC, 1991:41). Both of the aforementioned have contracts with large-scale farmers to sell their produce but under certain conditions, mainly shortages and if the produce is of adequate quality, these wholesalers will also sell produce from C/A farmers for a 12.5% commission (*ibid*, ADA Staff Interview).

The EEC study (1991:41) identified some specific problems for C/A farmers wishing to sell through the Independent Market which would presumably hold true for other large commercial wholesalers. There is the risk that farmers will travel long distances only to find their produce is unacceptable for some reason, furthermore, payment to farmers takes from two to three weeks after the crop is sold (*ibid*). In the face of these problems, some farmers reported they occasionally sold to the large wholesalers. Prices at the Independent Market are published once a week in the Harare Herald which potentially allows farmers to make informed decisions regarding pricing at the wholesaler in comparison to Mbare. One farmer who sometimes sold through the

²³³ It is not uncommon for buyers to come from as far away as Bulawayo, there are even reports of mango buyers travelling from Botswana (EEC, 1991:37. Fortmann and Nabane, 1992:20).

large wholesalers reported he might try them first, then, if they are not interested, he would move on to sell at Mbare. Another farmer prefers selling at the Independent Market because he has on occasion found far better prices (as much as four times higher) for his fruit there than at Mbare. The latter farmer only attempts to market smaller amounts of fruit at the wholesaler, preferring to take larger volumes to sell at Mbare which is easier to reach. Other markets for fruit in Harare are supermarkets or other buyers interested in more specialty fruits and often involving prior arrangements²³⁴

It is not uncommon for farmers to travel a considerable distance to market their produce in Harare: distances by direct routes to Murewa and Mutoko Towns are around 85 and 140 kms respectively²³⁵, and Fortmann and Nabane (1992:19) reported a case of two women travelling 100 kms to Harare five times over the space of three weeks to sell fruit²³⁶. Other farmers travel even longer distances to sell fruit. One farmer in Mutoko CA, east of Mutoko town claimed he journeyed to Gweru, 275 kms from Harare, and even as far as Bulawayo, another 160 kms further, to sell early season green mangoes to members of the Indian community for use in 'pickles'.

²³⁴ One farmer reported selling all his mulberries by prior arrangement to a Harare buyer, another sold a fruit I was unable to identify (see section 4.2.3, footnote 14) to the TM Supermarket. Sales of fruit by CA farmers to the big supermarkets are not a recent phenomenon in Zimbabwe. A headman in Mangwende CA stated that he bought mangoes from other CA farmers and re-sold them to the European Supermarkets (catering to Whites) beginning in the 1950s.

²³⁵ It should also be noted that farmers in most of the study area have some distance to travel on rural roads before they would pass through the towns for which distances have been given.

²³⁶ Research by Smith (1987 in Carter, 1993:46) found that 22% of farmers in a survey of nearly 200 travelled more than 100 kms to sell produce in Harare.

Farmers use their marketing trips into Harare especially as an opportunity to pursue other activities. One of the most interesting for the study of fruit marketing is what Fortmann and Nabane (1992:21) describe as 'the circular trade in fruit'. In most cases this trade involves farmers going to Harare to sell mangoes or other fruit produced in the CAs and then purchasing locally uncommon fruits such as oranges or avocados to sell upon returning to the rural areas. As has already been indicated, while few households in the rural areas produce and sell these fruits, a large number report purchasing them suggesting a possibly attractive market for particular fruits. Fortmann and Nabane (*ibid*) report that apart from the demand that exists for them, fruits such as oranges are suitable for re-selling in the rural areas because they keep a relatively long time without spoiling. Although the number of farmers involved in the trade is unclear, many may have simply gone unrecorded due to non-specific questions, two farmers in the study area described their participation in the so-called circular trade. One purchases 'pockets' - small sacks - of oranges which he then sells one by one in the CA. The other respondent, very much a part-time farmer as he lives a substantial part of the year in Harare, practices a somewhat modified version of the trade. He actually produces avocados at his homesite in Harare where the climate is perhaps better suited to growing the tree than in the CAs and then transports the fruit by bus to sell near his home in the rural areas.

While it is not always the outlet of choice for many small-scale farmers marketing fruit from the CAs, it is clear that Mbare market, as the number one market for fruit

originating from the CAs, remains a useful option for direct sales of fruit by farmers. Other marketing outlets both within and outside Harare are sold to by only a minority of farmers. Sellers appear to use Mbare for certain crops at certain points during the season as a way of improving on the returns that can be gained by selling to consumers within the CA or to middlemen who mainly transport the crop to Harare. Although regulations on farmers' selling activities act to some degree to inhibit their marketing choices, farmers appeared more concerned over the cost of transporting their produce and the poor facilities for those who must sleep at the market than the actual functioning of the market process. As the EEC (1991:41) study points out:

Mbare Musika market offers as wide a possible range of different services for every class of customer. It is not obvious that it could be done much better.

6.4.3 Pricing

Pricing is clearly a key aspect of the marketing process. The price obtained for fruit was seen to depend on three factors in particular: the grade or quality, which in practical terms, often amounted to the size of individual fruits; the point during the season when the sale was taking place; and the buyer of the fruit and therefore, the location of the transaction. Other issues of importance relating to pricing are sources of market information and the bargaining power of those involved in the transaction.

From discussions with farmers it appears that size is as important a factor in the

grading of fruit as any other consideration. Mangoes are generally broken down into three grades, the top grade known as 'Bull' mangoes due to their large size, followed by the middle grade which sells for 70-90% of the 'Bull' price and the poorer grade, consisting of smaller and/or marked fruit which may fetch in the range of 50-60% of the top grade fruits. Most farmers appear familiar with the desired qualities of their fruit as the majority of sellers (82%) grade their fruit in some manner prior to sale. Similar to mangoes, fruits such as pawpaws and bananas also fetch different prices, which can vary as much as two to three times, depending on their size. Except for one group of middlemen who employed scales on their purchasing trips, no other example was encountered of using weight as the measure of sale, instead, once the grade has been established fruit is sold by volume, generally by the box or by the tin²³⁷.

Prices for fruit also show a marked fluctuation over the course of the season. The expected price pattern for seasonal fruits²³⁸ are highest prices at the very beginning of the season with sharp drops through the main production period and a minor increase towards the end; such a pattern was noted by the ADA study (1990 74,76) in data from the Independent Market, a Harare wholesaler. Farmers in the study area also

²³⁷ One of the complicated aspects of discussing prices and how they vary, is the extremely non-standard units used in the sale of fruit. As already mentioned, the boxes used by middlemen when they measure fruit for purchase are often quite different from the boxes used by rural people when they sell in the market at Mbare. The tins - in Canada referred to as buckets - which are used as a measure for sale also vary in size although most used for this purpose are of the 10 and 20 litre size.

²³⁸ Such as mango and guava, as opposed to banana and pawpaw which produce year-round in the study area.

reported fluctuations in fruit prices which, if anything, are sharper than those recorded for the Independent Market²³⁹. Questionnaire data to a certain degree show the expected variation in prices although not across all fruits, nor across all units of sale. As can be seen in Table 6.4 the price per box of mangoes demonstrates a steady decline through the season until the final month, March, when prices show a sharp upswing. The price per 20 litre tin of mangoes shows the same pattern but without the increase at the end of the season, where the lowest prices of the November to March period are found²⁴⁰. Similarly, for unknown reasons no end of season price increase was noted for guavas sold by the box or the tin.

Also of interest is the price difference between boxes and tins of both fruits; even though these containers hold roughly similar volumes, tins consistently fetch lower

²³⁹ The largest price swings at the Independent Market appeared to be in the order of three times, while farmers in the study area reported drops in price of five times or more.

²⁴⁰ I cannot explain with certainty the reason for the low prices for the 20 litre tins of mangoes sold in October (see Table 6.4). However, the earliness of the sale suggests that the two households involved may have been selling the mangoes 'green' (unripe), as was reported by other farmers selling to the Indian community, and therefore obtaining a poorer price than if the mangoes had been sold ripe in the first 'wave' at Mbare market.

Table 6.4 SEASONAL PRICE VARIATIONS (\$Z) FOR SELECTED FRUITS

		JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
peaches	min					2.00	2.00	2.50	2.50				9.00
	max					12.00	8.00	10.00	10.00				14.00
	mean					7.50	6.00	6.00	5.40				11.50
	med					7.00	7.00	6.75	5.00				11.50
peaches	min				2.50	2.50	2.00	1.50	1.50				2.00
	max				6.00	10.00	12.00	16.00	12.00				9.00
	mean				4.00	5.00	5.17	4.82	4.31				4.31
	med				4.25	5.00	5.00	4.00	4.25				3.25
cherries	min							4.00	3.00		1.00		1.50
	max							6.00	5.00		1.00		7.00
	mean							4.67	3.40		1.13		4.00
	med							4.00	4.00		1.25		4.00
cherries	min						1.00	1.00	2.00		1.00		1.00
	max						1.00	1.00	2.00		1.00		1.00
	mean						1.00	1.00	1.50		1.00		1.00
	med						1.00	1.00	1.00		1.00		1.00
peaches	min	1.00	2.00	4.00	4.00	4.00	4.00	4.00	4.00		4.00	4.00	4.00
	max	1.50	2.00	4.00	4.00	4.00	4.00	4.00	4.00		4.00	4.00	4.00
	mean	1.33	1.75	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00
	med	1.00	1.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	3.00
peaches	min	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
	max	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		1.50	1.50	1.50
	mean	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33		1.33	1.33	1.33
	med	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
peaches	min	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
	max	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		1.50	1.50	1.50
	mean	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33		1.33	1.33	1.33
	med	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
peaches	min	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
	max	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		1.50	1.50	1.50
	mean	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33		1.33	1.33	1.33
	med	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Source: Questionnaire Data

over-all prices (Table 6 4) A possible reason for the lower prices per tin may stem from the main buyers dealing in these units. As noted earlier, boxes are the main container by which fruit is transported for sale at the market in Harare. Tins, although occasionally used to transport fruit by bus, appear to be a less common unit of sale in the urban market. The data support these conclusions. Taking the month of December, the busiest month for mango sales, as an example, sales of boxes to middlemen (49% of sales) were only slightly higher than sales to market vendors or other buyers at Mbare (44%). In comparison, sales of tins of mangoes were mainly (74%) to middlemen who, as noted earlier, generally pay lower prices than can be obtained at Mbare. Only 15% of mango sales for December using 20 litre tins as the unit were direct to Mbare buyers. Guava sales also show a marked difference in terms of buyers for the two units.

Differences in prices for fruits such as pawpaws and bananas which are available year-round appear more related to size and perhaps quality than any seasonal dimension (Table 6 4). Nor is there any great difference in the market for these fruits, both primarily being sold to local buyers. However, discretionary pricing, where the price charged depends on the buyer, is practiced for bananas and perhaps other fruits sold locally. In the case of bananas, school children are charged less than teachers - 20¢ instead of 25¢ - unless the latter buy in bulk *ie.* an entire stem in which case the price is 15¢ per fruit.

As has already been indicated in the previous section on marketing channels, prices also vary significantly depending on the buyer. According to farmers, middlemen may pay only Z\$2 to Z\$3 for a box of mangoes at the farm gate that can fetch close to Z\$10 at Mbare. The questionnaire data support a view of higher prices at Mbare although not at the levels suggested by farmers. In fact, average prices per box at the market come close to the Z\$10 figure indicated by farmers at the beginning of the season but drop in the following months (Table 6.5). Furthermore, while prices paid by middlemen are indeed lower, it is not clear that they are as low as farmers suggest. If the data on prices offered by middlemen are accurate, they would appear to call into question the economic advantage of transporting fruit, with the associated costs, to sell in Harare rather than to middlemen. Unfortunately, the use by some middlemen of over-sized boxes to measure volumes of fruit was not caught early enough in the research to ensure that the practice may not have resulted in the prices offered by middlemen appearing higher than they are in reality. It is conceivable therefore that farmers, especially early in the season, are gaining superior returns by marketing their fruit crop themselves rather than selling to middlemen²⁴¹

A lack of market information has been recognised elsewhere as having a detrimental effect on farmers' abilities to earn a reasonable return for their commodities (Nair and Sreedharan, 1986; Shah, 1987; Pabuayon, 1990; Saxena, 1991). While other farmers were identified as the most important source of pricing information by 44% of

²⁴¹ One farmer was of the opinion that his personal relationship with certain buyers at Mbare ensured he received better prices.

questionnaire respondents²⁴², buyers, at 34% were the second most important source

Table 6. 5 Mango Prices Per Box Obtained at Three Market Outlets

Sales To:	Mean/Median Price	November	December	January	February	March
MBARE MARKET	Mean	9.04	8.04	6.33	6.10	14.00
	Median	8.00	7.75	7.00	4.00	14.00
MIDDLE MEN	Mean	7.36	6.02	5.87	5.31	9.00
	Median	8.00	7.00	5.25	5.00	9.00
LOCAL MIDDLE MEN	Mean	6.44	5.96	5.65	6.25	—
	Median	8.00	6.00	5.00	7.00	—

Source: Questionnaire Data

suggesting a possible conflict of interest. Farmers were also asked if in their negotiations with buyers they generally received the price they set, a 'mutually acceptable' price or the price offered by the buyer. Most respondents (43%) claimed the price settled on was mutually acceptable, with 31% saying they received their own price and 26% receiving the price set by the buyer. However, interviews with farmers told a different story with most indicating that they usually are forced to accept the price offered by middlemen. One group of middlemen I spoke to also said they generally set a price they are willing to pay and refuse to negotiate any increase. Therefore there does appear to be some discrepancy between questionnaire responses and the more in-depth responses of farmers. The discrepancy may stem from a difference in interpretation of the wording in the questionnaire, specifically the idea of a 'mutually acceptable price'. Farmers may indeed accept the price they receive for

²⁴² A more unusual source noted by one farmer is the fluctuation in the rate of fruit thefts: an increase in fruit thefts in the area is a good indication of higher prices at Mbare.

their produce but it may be much closer to the buyer's original offer than to the farmer's initial price. It appears bargaining power also depends to some degree on the buyer involved. The questionnaire data indicates that farmers who sell direct to Mbare buyers less often receive buyers' prices than those farmers selling to middlemen²⁴³

Perhaps not surprisingly, farmers generally have a number of complaints about the prices they receive for their fruit crop. Those few who are able to produce the earliest fruits of the season and access the market with them are able to obtain excellent prices, perhaps as much as Z\$30 for a box of mangoes (approximately 50¢ per fruit as opposed to 13¢ or less later in the season) but these are by no means the norm. By one month into the mango season, prices have dropped considerably as fruit floods the market. Along with problems of fruit perishability and the need for reliable transport, market gluts are a risk farmers producing fruit for sale must face (Nair, 1985:56). Unlike some other tree products such as construction poles which have the advantage of allowing for harvest more or less at a time of the farmer's choosing (Arnold, N.D.a:4), fruit does not have the same flexibility. Therefore, when prices are poor, farmers must decide if the available returns are adequate to cover the costs of harvest and transport while still allowing for some profit or if they are better off selling for less to middlemen and avoiding the outlay in transport and time for only limited returns.

²⁴³ Data for mango sellers for the month of December indicate that those selling to market buyers accepted the latter's price 20% of the time while those selling to middlemen received the buyer's price on 33% of occasions.

6.5 INCOME FROM FRUIT MARKETING

As might be expected from the previous discussions in this chapter, the returns to individual households from fruit marketing demonstrate a wide variation. Table 6.6 provides an indication of just how wide the spread is for specific fruits and fruit in general, values for the latter ranging from Z\$2.50 all the way to Z\$5560.00. Clearly these two figures are the extremes for fruit selling households, most of whom are clustered more in the area surrounding the Z\$126.00 median for all selling households. Mangoes, with the highest mean and median returns among marketed fruits, demonstrate their importance in this sector of the rural economy especially given the number of households involved in their sale

The importance of mangoes is further underscored when the numbers of trees providing saleable products are compared against returns per household. When the mean and median returns from fruit sales are divided by the average numbers of trees providing fruit for sale, mangoes are only surpassed by avocados and certain 'other exotics' such as mexican apples and mulberries in terms of income generated per tree. It should also be noted that while the cultivation of mangoes is reasonably familiar to many residents of the study area and, if not always easy, often fairly successful, many farmers noted that avocados presented a number of problems for those wishing to

Table 6. 6 : Returns to Fruit Marketing Among Selling Households

FRUIT TYPE		\$ from sales	# trees providing saleable products	\$ returns/tree
Mangoes	min	3.00	1	
	max	5550.00	200	
	mean	303.26	18	17.15
	med	147.45	11	13.40
	stdev	536.77	23	
Guavas	min	1.00	1	
	max	400.00	26	
	mean	52.12	10	5.06
	med	25.50	6	4.25
	stdev	72.00	10	
Avocadoes	min	3.75	1	
	max	375.00	3	
	mean	140.31	2	93.54
	med	88.00	1	88.00
	stdev	128.90	1	
Citrus	min	2.00	1	
	max	60.00	6	
	mean	19.73	2	8.77
	med	15.00	2	7.50
	stdev	17.82	1	
Pawpaw	min	2.50	1	
	max	70.00	12	
	mean	27.64	3	8.58
	med	25.00	2	12.50
	stdev	24.92	4	
Banana	min	3.60	1	
	max	200.00	200	
	mean	38.33	59	0.65
	med	20.50	30	0.68
	stdev	40.81	67	
Other Exotic	min	2.00	1	
	max	600.00	7	
	mean	66.72	2	30.22
	med	20.00	1	20.00
	stdev	137.82	2	
Total for Fruit	min	2.50		
	max	5560.00		
	mean	268.01	N A	N A
	med	126.00		
	stdev	525.38		

Source: Questionnaire Data

grow them. Therefore, while avocados produce good returns for those able to grow them, for many farmers they are a difficult species to maintain until the age of fruit production. The very low returns per plant for bananas was an unexpected result. A problem in gathering accurate data on banana sales is that a number of households were unable to provide figures for the numbers of individual fruits sold, leading to an under-reporting of actual cash returns and therefore a return figure per plant that may be considerably less than the figure in reality. Given that one stem usually produces one bunch of fruit per year and that one bunch can sell from anywhere between Z\$5.00 and Z\$10.00 at bulk prices and Z\$20.00 or more when sold 'one-one', a more likely average cash return would be one comparable to citrus, pawpaw or perhaps even mango.

When the returns from total fruit sales are differentiated by gender of the household head, average earnings for male-headed households are appreciably higher (by about Z\$29.00 - Z\$276.90 to Z\$248.30) than average fruit earnings among female-headed households. However, median earnings are somewhat closer, being just over Z\$18.00 apart (Z\$135.00 to Z\$116.75). Why exactly the difference between the two groups exists is not completely clear but it may stem from the earlier mentioned difficulty that women-headed households face with regards to marketing their fruit in Harare. These households may simply find that travelling to sell their fruit is impractical given the lack of extra adult labour leaving them with little alternative but to accept the lower average prices offered by middlemen.

The results presented above demonstrate the substantial returns that are possible from marketing fruit. Even the lowest median returns per fruit tree (which, given the questionable data for bananas, would be guavas at Z\$4.25) appear higher than the likely returns from the sale of Eucalyptus poles. In many cases the returns may be much higher, one farmer reported averaging 10 or more boxes of mangoes per tree per season, resulting in a figure roughly comparable to a study (Muguti and Kege, pers. comm. in Gumbo *et al.*, 1990:199) which found that individual mango trees can produce fruit worth Z\$40 to Z\$60 in one season²⁴⁴. Bradley and Dewees (1993:113) found that fruit trees provided attractive rates of return even when assessed with net benefits significantly lower than those suggested as possible and probable from this study. It appears certain that growing fruit trees for income is a more economically sound practice than trying to generate cash through the production of construction poles.

6.6 ORGANISED MARKETING SYSTEMS FOR FRUIT

Organised marketing systems have been set up to serve a variety of markets for a number of different reasons, among them to reduce the costs of handling, transport and storage as well as to protect producers against potential exploitation by market intermediaries (Foley and Barnard, 1984:87, Hegde, 1988:59). An organised marketing system of relevance to the present discussion is functioning over a

²⁴⁴ The highest figure quoted to me for one tree's 'income' was Z\$600.00 for an unusual exotic that I unfortunately was unable to identify.

significant portion of the study area and, although an in-depth review of the programme will not be entered in to here, certain aspects relevant to the area of farmers' strategies in fruit marketing will be discussed

The Mashonaland East Fruit and Vegetable Programme (MEFVP) was established with funding from the European Community with the Agricultural Development Authority (ADA)²⁴⁵ as the implementing agency (EEC, 1991 1)²⁴⁶. Although ADA has played the major role in the Programme, the intention is that local, farmer-managed Horticultural Producers Associations (HPAs) will eventually take over all management activities²⁴⁷. The Programme has two main dimensions, the first to increase quality and or quantity of production and the second to improve the marketing system for CA produce²⁴⁸ (*ibid* 2). The MEFVP therefore to some degree takes a system approach by emphasizing not only production aspects but also the disposal of surplus production

The Mutoko CA part of the MEFVP began operations in 1987, with the Uzumba CA

²⁴⁵ ADA (previously ARDA) is a government parastatal charged with "planning, co-ordinating, implementing, promoting and assisting agricultural and rural development in Zimbabwe" (Moyo *et al.*, 1991 102)

²⁴⁶ The Mashonaland East Fruit and Vegetable Programme Evaluation carried out by Hunting Technical Services UK in 1991 will be heavily drawn upon for background information on the Programme. Other sources are interviews with ADA staff in Harare and in the field

²⁴⁷ According to a member of the ADA staff, the original pull-out date for ADA of late 1992 was to be delayed to allow for a more gradual and effective take over by the Producers' Associations

²⁴⁸ Only relevant aspects of the Programme, *ie* those having an impact on fruit production and marketing, will be discussed here

portion of the Programme commencing operations the following year²⁴⁹. In a survey completed prior to project implementation, farmers identified transportation as a serious constraint on their marketing activities (ADA Staff Interview) and it is in this area that the largest practical impact of the Programme has been felt by farmers. Membership in one of the HPAs gives a farmer the right to transport produce on association trucks at a rate competitive with or better than on private transport²⁵⁰ (EEC, 1991:46-7). The other main focus of the Programme relevant to the current discussion has been on introducing improved mango varieties and improved management of existing trees. Most of the existing varieties grown by farmers do not have the best flavour, have stringy flesh and a relatively short shelf life (ADA Staff Interview). These attributes rendered the fruit unacceptable for export which is the ultimate goal of the improved production (EEC, 1991:27). Improved management of fruit trees is part of the Programme's extension message and was to be brought about through various means including the use of a 'crop pack' with chemicals, protective clothing and sprayers for orchard management at a cost to farmers of around Z\$250.00 (ADA Staff Interview).

The fruit-crop improvement aspects of the Programme appears to have had only a limited impact for most farmers. Some of the planned interventions were clearly too

²⁴⁹ At the time of the research in mid-1992 the Programme was in the process of organising a Producers' Association for Mangwende CA.

²⁵⁰ The rate was Z\$1.50 per box of produce but has since increased to Z\$2.00. At the time the project was implemented, many farmers believed they would receive free transport for their goods (ADA Staff Interview).

ambitious and have run into difficulties. For example, mango tree top-working, where trees of old varieties are cut back severely and improved variety material is grafted on, had only been performed on approximately 70 trees at the time of research, considerably less than the target of 2280 (EEC, 1991:28; MEFVP, 1992). At the same time only 1000 improved variety grafted seedlings have been distributed compared to a planned for 12000 (EEC, 1991:27). The main problem in seedling distribution has been in producing sufficient numbers at an accelerated rate. The required budwood of the improved varieties must be imported, which led to bureaucratic and quality problems (*ibid.*:27-8). The top-working programme faced related problems but also other difficulties surrounding farmer participation. Farmers have proven somewhat reluctant to allow healthy specimens of local varieties that already produce saleable fruit to be de-limbed to allow the grafting on of improved material that may take three years to provide a harvest. The situation has been further complicated by failures to obtain grafting material in time and a success rate of grafts of about 50% (*ibid.*:28; ADA Staff Interview). Crop packs have proven to be too costly for some farmers while others who do participate have frequently failed to repay their loans resulting in the suspension of the programme (EEC, 1991:31-2). As the EEC study (1991:31) points out, the use of some of the crop packs within the Programme may also be questionable from an economic standpoint. Although I did not undertake any in-depth questioning in this line, it struck me that many farmers find the generally few inputs they perceive as being required to grow fruit as an appealing aspect of the production process. While some farmers who have decided to enter into fruit production as

their main source of livelihood - some of whom were encountered in the study area - would no doubt be willing to embrace many of the inputs suggested within the crop pack approach, many others seem more interested in fruit production as a generally low-cost strategy to produce useful supplementary income

While not without its problems, the provision of transportation within the Programme has clearly had a positive impact on the marketing abilities of participating farmers and "is, without any doubt, the mainstay of the MEFVP at present" (EEC, 1991 41) At the time the research was being conducted in mid-1992 the transport programme was in the process of undergoing some changes. The previous system whereby trucks completed long loops picking up produce from individual farmers was apparently being phased out in favour of pick-ups from collection points distributed throughout the project area (ADA Staff Interview)

The practice of picking up at the farm gate, initially very popular with farmers, has since run into numerous problems. Farmer interviews revealed a host of problems with the system, centring on the unreliability of pick-ups (resulting in rotten produce) due to trucks filling up before reaching farmers at the end of routes or just not keeping appointments. One farmer accused project drivers of "playing favourites" presumably by picking up from some farmers and not others, another farmer claims the trucks did not show up as promised about half of the time. Breakdowns are also a problem especially at peak times of the mango season in December/January. Despite the

claims of some farmers, there is no guarantee of pick-up; as one ADA Staff Member put it "farmers are members therefore (they must assume) owner's risk" of transport breakdown²⁹¹. Project Staff came to realize that farm gate pick-up placed too many demands on resources without successfully meeting the demands of farmers as well as leading to vastly increased wear and tear on vehicles. It was also pointed out to me by Project Staff that roadside pick-up was resulting in undesirable and widespread cutting of shrubs and other vegetation to protect the produce from the sun.

While the rationale behind the alterations to the transport problem were not exactly the same between the farmers and Project Staff, it appears that both see the new approach of depot collection as a step in the right direction. Under this new system, farmers will take their produce to collection points - buildings consisting of a grading shed and a lockable storage room, 16 of which had been built by mid-1992 - where trucks will pick-up the produce for transport either to Mbare as is currently usually the case, or to the Assembly Market that has been constructed at Mutoko Town and opened in 1991²⁹² (ADA Staff Interview). Somewhat to my surprise, among farmers I discussed the issue with there was support for the shift to collection points. Problems with failed pick-ups and full trucks have convinced farmers that taking produce directly to

²⁹¹ Although farmers are members of the HPAs which are well on their way to taking over the 'ownership' of the Programme, I found little indication that members see themselves in that light. Instead, most farmers still talk about "the ADA Project".

²⁹² The original intention of the Assembly Market was that it should function as a smaller version of Mbare market and, by attracting wholesalers, save farmers the expense and time of travelling to Harare. The details will not be entered into but the rationale for the Assembly Market has changed somewhat since it appears unlikely that wholesalers will be willing to travel to Mutoko (EEC, 1991:49).

the depot is a safer proposition than the current system.

The MEFVP has made a significant improvement in the ability of many farmers to market their crop. In terms of improving the quality of production, the more realistic approach as suggested by the EEC evaluation (1991:29) would appear to be to concentrate on seedling production which would allow for the gradual replacement of existing varieties rather than the more radical top-working which has only limited support on the part of farmers. My experience in the study area indicates that farmers would be quite happy to acquire improved seedlings provided their cost is competitive with those currently available. A further suggestion for increasing the range of fruit trees available as requested by farmers would also likely be a productive approach to increasing farmer participation in growing these trees (*ibid*:30). Other problems remain however as briefly touched upon in the section on marketing channels. The current requirement for providing boxes for transporting fruit and the need to travel to market will continue to exclude farmers such as those in women-headed households who may wish to participate in the Programme. While it has been rightly pointed out that many farmers are reluctant to give up control over the marketing process to others (*ibid*:50-1), some farmers that are currently only able to sell to middlemen at often exploitive prices may be quite willing to relinquish control if it means obtaining a slightly higher price than they are able to otherwise obtain.

In summary, the MEFVP has clearly had a positive impact in the area of assisting

farmers to transport their crop to market. The other aspects of the system - which one ADA employee described as "trying to shift the risk of marketing and transport from (individual) farmers to (the Programme) and create a better link between production and marketing" - may be more difficult to successfully implement.

6.7 SUMMARY

As was found to be the case with tree planting, the marketing of fruit by CA residents is also a widespread activity. The majority of farmers interviewed in the study area are involved in the marketing of fruits, mainly exotics, to some degree. Most of the responsibility for the harvesting and marketing of fruit falls on women; it also appears that they may end up in practice controlling how the income from these sales is disposed of.

Most of the marketed fruit originating from Zimbabwe's CAs follows three main market channels: local sales direct by farmers, middlemen from the rural areas and from outside purchasing fruit at the farm gate, and sales by farmers to various buyers in the urban market. Contrary to the view of some observers, the local market for exotic fruit is reasonably extensive although not nearly as large as the market found in the urban areas. Given their dominant role in the marketing of the most widely sold fruits from the rural areas, middlemen are clearly important players in this sector of the CA economy. While the exploitive behaviour of middlemen is often complained

about by farmers middlemen could also be argued to provide opportunities for some farmers to market their fruit crop that might otherwise be unable to find alternative marketing services. However, due to problems with a lack of reliable transportation and the risk of spoilage, farmers that deal with middlemen were often found to be price-takers rather than price-setters. A number of farmers were observed to utilize a range of marketing channels to sell their fruit, switching outlets during the course of the season depending on prices and sale volumes.

The organised market system for fruit and vegetables operating in parts of the study area appears to have had a significant positive impact on these activities. By far the largest impact has been in the area of transport, other interventions have shown more limited results. Plans to provide alternative marketing arrangements, such as the programme taking on increased marketing responsibilities, could have a positive effect especially on those households short of labour or otherwise unable to take full advantage of the services currently being offered.

Income from fruit sales varies enormously between farmers. However, an observation with relevance for the study is the clear ability of rural people to generate significant amounts of cash from scattered plantings of exotic fruit trees. The clear discrepancy between returns also once again confirms the soundness of the choice made by most small-scale farmers to concentrate on fruit tree growing rather than on the growing of Eucalyptus with the intention of selling building poles.

CHAPTER 7

THE MARKETING OF WOOD-BASED AND FOREST PRODUCTS

7.1 INTRODUCTION

The number of households involved in the marketing of tree and forest products other than fruit is far outstripped by those marketing fruit. However, the importance of non-fruit tree and forest products in the rural economy cannot be overlooked. As will be seen, there are once again important differences in the perceptions of external organizations and the actual situation in the rural areas. In this case the divergence is between what outsiders perceive as wood-based and forest products most important to the rural cash economy versus those products that are actually most commonly marketed and purchased in the CAs.

The products examined in this chapter include both wood and non-wood products largely derived from indigenous woodlands. Wood products sold in the study area include wood-based crafts where a significant level of processing has taken place in the production of tool handles, kitchen utensils, furniture, yokes, mortars and bark products²⁴⁴. Marketed wood products essentially unprocessed after harvesting include

²⁴⁴ These include products made exclusively from bark, or bark in combination with other materials eg reed mats woven with bark twine

fuelwood and building poles. Non-wood products marketed in the study area include various wild foods, herbal medicines and tree seedlings

Among the products discussed in this chapter, some are of considerable interest in the debate surrounding Zimbabwe's Rural Afforestation Project (RAP). Perhaps no other tree product in Zimbabwe, or in most other countries of the South, is relied upon daily by so many people as is fuelwood. Construction wood for rural housing is also of importance over much of the country. 50% of households use wood in hut walls and more than 90% employ wood in roof construction (Campbell and du Toit, 1988:331). Estimates of total demand for wood in Zimbabwe in 1982 (Beijer Institute, 1985 in Katerere, 1988:8) assessed woodfuel's share of the total at 77%, followed by rural construction poles at 19%, such 'non-industrial' wood production was estimated to be worth perhaps three times the value of all forest industry production (Kamau, 1989:30). The importance of these 'goods' is unquestionable, what is less certain is to what extent and by what means the need for these goods is being met through the market.

This chapter examines the role played by tree and forest products in the cash economy of rural communities. The degree to which these products have entered into the cash economy of the CAs as well as the livelihood strategies of those households involved in the marketing of tree and forest products are explored in depth. Among craftworkers, the marketing practices described challenge any suggestion that these

activities are necessarily localised or limited in scope. In fact, such generalisations obscure the complexity and diversity of involvement by those households involved in this sector of the rural economy.

7.2 WOOD-BASED CRAFTS

While farming is undoubtedly the chief source of income in Zimbabwe's CAs, there are few households which are restricted to crop sales alone to earn money (Jackson and Collier, 1988:21). In fact, estimates of household involvement in rural non-agricultural enterprises (NAEs) range from 15 to 25% of all CA households throughout Zimbabwe (Helmsing, 1987:3; Jackson and Collier, 1988:17). Estimates of participating households will depend on the definition of NAE used and probably on the area surveyed. Both the Helmsing (1987) and Jackson and Collier (1988) studies were conducted over a large area of the country; in the three CAs that are the subject of this study, participation in NAEs was reported by 46% of respondents to the questionnaire

Among the NAEs undertaken in Zimbabwe's rural areas, wood-based crafts can be considered to fall under the heading of 'Type I' enterprises described by Moyo and Sunga (1991:3) as being household-based, often seasonal and employing inputs self-made and/or drawn directly from nature. While it is difficult to assess the importance of NAEs to the national economy as a whole, given that they are generally ignored by

official statistics (*ibid.*:4, Dewees, 1992:37), it is clear that these activities play an important role in the livelihoods of some rural households. But to what extent do forest-based enterprises (FBEs) play a role in the NAE sector? Much depends on the definition of 'FBEs' as a subset of NAEs. Mhone (1991:1-2) has a fairly restrictive view of what constitutes an FBE: furniture, utensils, musical instruments, tools, medicinal herbs, decorative crafts and certain clothing accessories. Under his definition, FBEs make up a small percentage - between 15 and 25% - of NAEs as a whole. Applying a similarly restrictive definition to my study by including the wood-based craft sector and the few medicinal herb sellers only, suggests only about 9% of NAE households are involved in FBEs. However, when the number of NAEs which rely on tree-based inputs for some aspect of their production is considered, the figure is much higher, in the range of 63%²⁵⁴

7.2.1 Levels of Participation

The number of households involved in marketing wood crafts is limited: only 16 households out of 443 surveyed - under four percent - reported selling products manufactured from wood and bark fibre. While there may have been some under-reporting of activities due to the supposed 'illegal' nature of these sales, another survey by Fortmann and Nabane (1992:17) supports the low participation rate identified

²⁵⁴ The main input in this case is firewood for brickmaking and beermaking with smaller amounts used for blacksmithing and making beer

through the questionnaire. The small number of households involved may be taken as suggestive of a limited importance for the craft sector, however, although the number of sellers is limited, the market for these goods is not. A total of 349, 79% of the households surveyed, reported purchasing at least one of the products in recent years. A full one-third of the respondents stated they had purchased five of the eight products listed, generally the more 'utilitarian' such as furniture, mortars, kitchen utensils, yokes and tool handles.

Out of the eight craft products listed in the questionnaire, two - wooden musical instruments and decorative carvings - were not sold by any of the respondents, although limited production does occur within the study area. Of the six products marketed, tool handles were sold by six households, kitchen utensils by five, furniture, mortars and bark by four and yokes by three. Eleven of the households sold only one product, two sold two, one sold three of the goods and two households marketed four of the five products. As will be discussed in a later section, involvement in multiple craft activities may be a factor in improving the financial position of some artisan households.

7.2.2 Characteristics of Participating Households

As reported in other studies which discuss gender roles in the NAE sector in Zimbabwe (Helmsing, 1987:7, Chidari *et al.*, 1992:100, Fortmann and Nabane,

1992 17), I found all reported wood-based craft activities for market were undertaken by men. Women do, on occasion, produce certain crafts like kitchen utensils and tool handles, but apparently only for household use (Chidari *et al* , 1992 100). The dominant role of men in the craft sector supports Helmsing's (1987 7) assertion that, in Zimbabwe, in those enterprises dependent on tree and forest products, men predominate in the areas of brickmaking, carpentry and woodcarving, while women tend to engage in beerbrewing and basketmaking activities.

One partial exception to the gender division in craft activities was observed during the fieldwork. Mrs. Kandeya, encountered on her way to market with eight mortars for sale, revealed she undertakes the first part of the manufacturing process - roughing out the mortars in the forest - before taking them to a local artisan, Mr. Kamanya, who does the final shaping. Mr. Kamanya performs the work for free as "charity" to assist Mrs. Kandeya because her husband is old and without the sale of mortars the family would starve. She apparently has no alternatives for income generation. Only one other case, where a female household member was in charge of selling mortars, utensils, yokes and tool handles produced by a male family member, was recorded of women's involvement in the production-for-sale wooden craft sector.

The proportion of male to female household heads among artisan households differs from that of the rest of the population, all artisan households reported being male-headed, while among the total questionnaire sample, 74% considered their households

to be male-headed²⁴ With the artisan sector dominated by men and as most labour migrants are male, it appears that "for many [NAE] households non-agricultural enterprise may be a partial alternative to labour migration" (Helmsing, 1987:4,15). Indeed, artisan households demonstrate a much lower involvement in wage labour activities at 23%, less than half that recorded in the total sample. Among the eight artisans, three reported they had once held jobs in Salisbury (now Harare) before taking up craft work

As was reported in other studies (Helmsing, 1986:15, Helmsing, 1987:8), the artisans interviewed acquired their skills through informal means Helmsing (*ibid.*) points out that while formal employment in urban areas often provides the skills necessary for work in the urban informal sector, formal urban employment is unlikely to provide experience in the skills required for rural NAEs Skills were most commonly acquired through working as an apprentice with an experienced artisan; three of the five artisans who explained the source of their skills acquired them in this way, and two had in turn gone on to teach many others It appears apprenticeships do not generally involve any cash payment to the teacher, however, they often involve an exchange of labour for knowledge For example, Mr Wekwete, a carver who has taught a number of students in his nearly 50 years in the business, exchanged training for tree cutting and some

²⁴ There is of course a difference between those households which consider themselves male-headed with the household head in residence, and those 'male-headed' households where the head is away most of the year and are therefore *de facto* female-headed Given the very low rate of off-farm labour and remittances reported by artisan households however, it appears these households can be considered to belong to the former type of household described above

rough shaping of items he eventually sold

In contrast to the study by Helmsing (1987:8) looking at the total NAE sector where parents accounted for over half of the skills instruction, only Mr Wekwete was trained by a family member. One artisan was completely self-taught Mr Chavunduka, four years after returning from his CA, dreamt of doing decorative wooden carvings and decided not to return to Harare to seek work. He claims to have received no formal training, ideas come to him through his dreams. The most distant source of skills was reported by one artisan who spent 18 months in South Africa working with people in villages and learning to carve and make furniture.

The acquisition of skills, along with financial considerations, were identified in the Helmsing (1987:15) study as the most serious constraints on starting NAEs. Given the limited outlay of funds required to begin wood-based craft activities²⁵⁶, it would appear that gaining the necessary skills is more of a concern for artisan production. However, if apprentices are willing to put in the time and effort required, a significant proportion of experienced artisans appear willing to pass on the skills required to undertake production for the market. The exchange of labour that may be required in payment for this knowledge appears to be a reasonable investment judging from the potential returns available to craft work.

²⁵⁶ Although it must be acknowledged that tools can be expensive and difficult to obtain at times.

7.2.3 Craftwork and Agriculture: Complementary Activities?

Craftwork activities are not necessarily alternatives to other income-generating work, but may be complementary or even secondary to other activities. All sixteen artisan households identified through the questionnaire were involved in agriculture and eleven sold at least some farm produce. However, the degree to which households engaged in agricultural production for the market varied considerably. Only seven of the sixteen households, 44%, sold any maize, a significantly lower rate than the questionnaire average of 63%. Sales of groundnuts by artisan households were also below average, while those of sunflower seeds and vegetables demonstrated levels close to non-artisan household averages. The number of cattle owned by artisans averaged just under four compared to an average of over five for all respondents. The previous figures paint a somewhat different picture from that reported by Helmsing (1987) in a study of NAEs in eight rural districts of Zimbabwe²⁵⁷. He found the households engaged in such enterprises to have a higher involvement in cash cropping and greater cattle ownership than the average (Helmsing, 1987:6). As was found in the current study, he notes NAE households tend to have a slightly higher land allocation than the average.

Interviews with artisans provided information on how they perceive the role of

²⁵⁷ It should be noted that Helmsing's study covered all types of NAE, not just those forest and/or wood related, and therefore was made up of a considerably larger sample

agriculture within their livelihood strategies. Of the eight interviewed at some length, a recurring theme was a negative attitude towards maize production for the market. Apart from the low prices offered, the high cost of fertilizer was also mentioned as contributing to the lack of profitability in farming. However, artisans remain involved in farming despite criticisms of agriculture as a source of income. During the rains, Mr. Kamanya concentrates on farming more than crafts, an approach that works well as the space available in the kitchen for drying out his wood products is very limited. Mr. Chuta says that even though the market for mortars is very good, he would not concentrate only on them, people also want to purchase his garden produce, therefore it is worthwhile for him to maintain production.

7.2.4 Seasonality

Determining the seasonal nature of craft production is helpful in assessing the priorities placed by households on different income-generating activities. It is also important in determining how artisan production meshes with other productive activities. The questionnaire was limited to establishing when sales took place, which may differ from the time of production. While it is possible for crafts to be stored for sale later, this appears to be uncommon.

Questionnaire data indicate seasonal clustering of sales of those products that might be expected to possess a 'seasonal dimension'. Tool handle sales were clustered in the

months up to and including the beginning of the field planting season and again at harvest, yokes demonstrated less of a seasonal clustering although most sales did occur during winter ploughing season, June to October. Less expected was the clustering of mortar sales from March to September. It had been anticipated that mortar sales would not show as sharp a seasonal delineation since they are in use for a good part of the year. The seasonal nature of mortar sales may, therefore, be partly based on the availability of income in the rural areas such as after the sale of the maize crop, as well as on requirements for their use. Kitchen utensil sales did not demonstrate a strong seasonal aspect, due perhaps to their relative affordability and year-round use.

A similar pattern was described in a discussion with a mortar producer. Part of the interview with Mr. Chuta involved creating an extended activity calendar (Table 7.1). As can be seen, the majority of his sales fall within the same period as that mentioned by the other mortar sellers. Mr. Chuta's comments also support the view that craft sales are affected to some extent by variation in rural incomes; no mortar purchases occur from November to March, a period that is marked by a general shortage of disposable income in the rural areas. Even when sales start up again in April, they remain slow at first because of uncertainty regarding the harvest; post-harvest they do not pick up immediately because of the time required to complete surplus maize sales.

The extended calendar can also illustrate the type and degree of complementarity between craftwork and agriculture. However, caution must be used in attempting to

TABLE 71

HOUSEHOLD ACTIVITIES	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
AGRICULTURE Main Fields		Winter plough	Planting/Weeding Fertilizing			Harvest green mealies			Main harvest		may winter plough	
Garden	----->End					Start Garden ----->						
LABOUR DEMAND	High-----> (crafts)		Very High (garden/fields)		Moderate (few orders, waiting for Harvest)	Very Low----->Mod		Highest High----->				
SALES - MORTARS	Most Orders		No Sales (little money available)									Most Orders
PRODUCTION - MORTARS	Full -----> (20-25/month)		Very Few (1-3/month)									Full Production -----> (20-25/month)
CASH FLOW	High/Moderate		Moderate		Low	Very Low		Moderate ----->				Highest ----->
(Source: Questionnaire Survey)												
SEASONAL NON-ARTISAN LABOUR PROFILE	Mod (Home Work)	Highest (Filling Weeding)	High/Moderate ----->		Low ----->			High -----> (Harvest)		Low ----->		Moderate (Work at Home)

(From Gumbo *et al.*, 1990: 205)

generalize regarding household production strategies because of the variations between households. As Bell and Hotchkiss (1991:213,219) note, household agricultural strategies demonstrate "no standard form" and vary according to "land quality, access to adult labour, ... knowledge of land and soil husbandry, access to cattle for ploughing and the availability of an outside income." At the same time, in terms of the gender division of labour in households, it appears fairly safe to state that women in the CAs account for by far the majority of labour expended in agriculture, taking on even a greater percentage where the household is *de jure* or *de facto* woman headed²⁵⁸ (Jacobs, 1984:37-8; Zinyama, 1986:164,172; Katerere, 1988:5; Arnold, 1990:22; Fortmann and Nabane, 1992:30). When present in the household, men's responsibilities in agriculture generally include land preparation, cattle herding and, if a garden is present, a significant proportion of garden work (Jacobs, 1984:38; Bell and Hotchkiss, 1991:214; pers. obs.).

It would, of course, be meaningless to discuss complementarity between craftwork and agricultural activities in terms of labour expenditures if male artisans performed no agricultural work whatsoever. However, a number of them do contribute to agricultural labour, a task made simpler by their usual residence at the homesite. To some extent artisan activities and agriculture appear to be complementary: peaks in agricultural labour requirements in November-December and then again in May-June

²⁵⁸ Although, even where households are *de facto* women headed, that is where the male 'household head' is away from the home for a large portion of the year, men will often return to the CAs to provide labour at key points in the agricultural cycle (Zinyama, 1986:170; Potts and Mutambirwa, 1990:693-4)

tend to be times of relatively lower craft sales as well. When questionnaire data for craft sales are compared with a farming labour calendar (from Gumbo *et al.*, 1990:205) for four locations in Zimbabwe (Table 7.1), slightly more than half of the sales were concentrated in the four to five months when agricultural labour requirements are at their lowest: July-September and March-April. Mr. Chuta begins full scale production by June, a practice that appears to conflict with the main maize harvest, however, men participate less in harvesting than in the other aspects of field crop production. As Mr. Kamanya puts it, he concentrates on farming for four months of the year then begins his craftwork again in April because "most harvesting is woman's work".

Examining the way Mr. Chuta's craftwork balances with farming labour leads one to question why he does not undertake full-scale mortar production from February until April while labour needs are at their lowest. No direct answer was obtained to this question, although some possible reasons were suggested in the course of the interview. One reason was a shortage of storage space as most homes are fairly small. Furthermore, Mr. Chuta claimed that he dare not store his mortars elsewhere both for fear of theft (mortars can be worth a considerable sum of money) and because he would run the risk of a jealous person "doing *ju-ju* to them", *i.e.* damaging them in some way through supernatural practices.

7.2.5 Input Acquisition

Where it was possible to identify the raw material source for craft activities, artisans reported gathering their own inputs. Only one respondent, Mr Wekwete, stated he had once employed people to cut and bring back wood but he gave up on the practice because the workers "spend money on beer and don't do enough work". Helmsing (1987:11-12) reports from his survey that 38% of material inputs for NAEs were 'self-procured' that is were self made, grown or collected, but he does point out that in 'primary' NAEs, a category that includes wood carving, self procurement plays an especially important role.

Although artisans gather their own wood, none stated raw materials came from land their household had been allocated. Most travel long distances - up to 11 kms in one case, though the average appears to be closer to 5 or 6 kms - to obtain the specific wood required. Given the existing settlement patterns and practices of forest clearance in the CAs, it is not surprising that the trees required for craft production are not available either from individually controlled land or nearby grazing areas, a range of tree species are left standing when land is cleared for agriculture (Campbell, 1987:379), but these species are not those normally relied upon by artisans. In Zimbabwe, the term 'forest' in the context of the CAs may be inappropriate in many cases as most of the raw materials for products discussed in this chapter are obtained from scrub areas and woodlands located on or around kopjes and other uncultivated

rocky land (Campbell and Brigham, 1993:3; Carter, 1992:28).

Raw materials frequently undergo some preliminary processing at the cutting site before being transported back to the home for the balance of the manufacturing. Only limited stocks of inputs tend to be maintained where production takes place. Although circumstances vary, stocks are kept at a low level most often because the time required to build up large supplies detracts from the time needed during the week for product manufacturing. A number of artisans described collecting trips to obtain wood taking a full day; transport limitations mean that only a maximum of one week's supply could be carried at any one time. None of the artisans interviewed employed motorised transport to obtain wood and, while some might use scotchcarts to move logs part of the way, many of the source areas are only accessible on foot. Mr. Wekwete, who walks two hours to obtain wood from a mountain six kilometres away, stated if the area was accessible by road he would happily hire vehicles to carry out logs: "I would work for two days then have plenty [of wood]." Some respondents load bicycles with wood and then walk them back to the work site, a practice with the advantage of allowing source areas to be reached fairly quickly and increasing the amounts that can be transported at one time.

7.2.6 Business Practices and Perspectives

Because artisans working with wood produce a number of different products, it is difficult to generalize about business practices, however, there are some practices that appear to be common to some producers. One is to concentrate production on pre-ordered goods. While not always practiced, this strategy generally holds true for larger, costlier items such as mortars. For bowls, kitchen utensils and other lower-priced items, some unsold stock may build up with future sales in mind. Products with a more limited or speculative market such as decorative carvings are often produced without a likely buyer being established. Future orders and an agreement on pricing are generally established at the time deliveries are made. On occasions when customers are unable to make agreed purchases, artisans often appear to have alternative outlets available. Mr. Mhezi, who produces large numbers of spoons for a variety of commercial customers, has an informal arrangement with these businesses for a set delivery of utensils per month. If the stores have not sold their supply, Mr. Mhezi can clear his stock at Mbare market quite quickly albeit usually at a reduced price. Mbare stallholders are renowned among artisans for their ability to reduce costs at producers' expense.

Unlike other NAEs where raw materials must be purchased or turnover is very low (Helmsing, 1986: 15), artisans almost never require advance payment and, in some cases, reported refusing advances. At the same time, credit towards purchases is rarely

offered. If buyers do not have the cash, almost all artisans indicate they simply move on to another buyer. Such a hardline approach to business appears to be sound economic practice, one artisan who claimed to provide goods prior to payment had suffered long delays waiting for his money and in some cases had not been paid at all.

Discretionary pricing is a common practice among artisans. Helmsing (1987:13) found, contrary to generalisations about NAEs, prices of goods are regularly adjusted to take into account increases in the cost of living and other factors. Concerns over the high cost of living were frequently raised by artisans although how this translates into price increases is not clear. What is clear is that prices vary not only temporally but also spatially and according to buyer. Higher prices are asked for when products are sold in urban areas but mark-ups are lower than might be expected, one mortar maker stated he only raised his price to cover transport charges. He sold his mortars in Harare's high density suburbs, those areas previously restricted to Africans during the colonial period. Economic conditions appear to be worsening for many urban workers, therefore, assumptions that this stratum of urban dwellers is able to afford significantly higher prices for goods than can rural people may be inaccurate. However, in those cases where "the buyer or locale is seen to be up-scale in terms of income stratification" prices are likely to be higher (Mhone, 1991:5-6). The only products under discussion likely to interest affluent buyers are the crafts which cater to the tourist industry, as artisans rarely have the opportunity to sell direct to tourists, they are unlikely to derive much benefit from the practice of tourist mark-ups.

In keeping with other studies on NAEs (Gottlicher, 1984 in Moyo and Sunga, 1991, Helmsing, 1987), artisans are generally optimistic regarding the future of their enterprises. Most felt demand for their products was steady or increasing, even the drought was not considered to have had a particularly detrimental impact. One mortar maker felt that if anything the drought had improved business because the only food people could get in the rural areas was *Pannan* fruit, a traditional famine food generally processed with a mortar before being eaten. Mr. Mhezi observed that considering the past the market outlook was brighter now. The war meant no tourists came to the country, and until recently, people considered things made of wood to be 'primitive'. He has begun to notice that more people are interested in traditional wood products and he feels its part of a returning respect for their own culture. Mr. Wekwete was somewhat more guarded in his outlook. While feeling that business has improved since he began his work in 1943, he has noticed that the rapidly increasing cost of living has cut into the number of buyers, especially since the 1970s. However, in his opinion, craftwork remains a superior option to working in the city, the pursuit he abandoned in the 1940s to take up wood carving full time.

The over-all optimism felt by artisans about their business was demonstrated in the responses they made when asked how they would advise their children or other apprentices about following in their footsteps. The consensus was that while craftwork may not always appear to be profitable, there is a living to be made through these activities. By choosing certain kinds of crafts to concentrate on, time and effort can

be maximised to bring the best returns

A dominant theme running through many of the interviews was the importance of quality in production. With the growing number of people becoming involved in craftwork, it was anticipated that competition would be a concern for many artisans, and to a minor degree it was. However, interviewees belonging to the stratum for whom craftwork is the main livelihood strategy, indicated they gained and retained customers by providing higher quality products than their competitors. Superior quality allowed one artisan to sell his products in rural communities 30 or more kilometres away where, although people were present who made the same products, his "more attractive" finishing allowed him to outsell the competition. Mr. Wekwete, who has taught perhaps 10 apprentices how to carve a range of wood products, says a number of them have quit because of the competition, he feels his business has withstood the test of time due to his extensive experience which allows him to produce higher quality goods.

Although few artisans appear to keep any type of formal business records, their practices and perspectives indicate a high level of business awareness. Several craft workers interviewed were acting on perceived market opportunities in the hopes of expanding their business or addressing some of their business problems. These opportunities generally revolved around the development of new products which would provide higher cash returns to labour or focused on expanding into different markets to

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reduce time and travel expenses. More than one artisan was conducting 'trials' of new products, for example salad bowls and wooden sculpture, in the hopes of expanding into the potentially lucrative tourist/expatriate market. At the same time, artisans demonstrated a keen awareness of the need to balance demand and returns, realizing those products that provide good returns may not be the same products which have a large enough market to satisfy monetary needs.

7.2.7 Marketing

The significant numbers of local people purchasing forest-based craftwork indicate an important local trade in these products (Table 7.2). Questionnaire data gathered from craft-making households also indicate most goods are purchased locally. Helmsing (1987:12) asserts for NAEs as a whole that "sales to intermediary traders or 'exports' to towns are virtually nonexistent." However, discussions with artisans regarding their marketing channels suggest a more complex situation exists. While most of the eight artisans interviewed acknowledged that local sales had an often important role in their enterprises, seven of them reported varying degrees of sales to 'outside' markets. These markets ranged from business centres perhaps 30 kms away, to communities in adjacent CAs, all the way to Harare, nearly 200 kms away for some of those interviewed.

In almost every case where artisans sell to outside markets, they are responsible for

moving their own goods. Only one craftsman, Mr. Wekwete, reported that a portion of his sales are to wholesalers/middlemen that come to his homesite, an exception that may be related to the long period he has been making crafts and the high quality of his work. Mr. Wekwete feels such an arrangement is advantageous as it saves him both transport costs and travelling time. Those artisans needing to get themselves and their goods to market almost always rely on public transport. Bus routes were accessible to all artisans interviewed and most made one to two trips per month as far as Harare. Bus fare to Harare for the artisans located in the Murewa area, Mangwende CA - approximately 80 kms from the city - was Z\$14.00, and for those in northern Mutoko - close to 200 kms away - the charge was double. Other than mortars, most goods being transported for sale could be carried in a single large sack. A challenge in establishing the marketing costs faced by artisans is the seemingly arbitrary manner in which charges are made for goods being transported to market. In general, personal goods appear to travel as part of the price of a regular ticket while goods for sale, even if they do not exceed normal baggage limits, are liable to extra charges. These charges are not levied in all circumstances, and artisans clearly resent paying extra, attempting to avoid doing so by concealing the contents of their bags. Unlike normal fares set according to distance, charges for goods are more confusing; a sack of goods moved 80 kms costs Z\$1 while one moved 180 kms might cost Z\$6. Only one case was noted of an artisan hiring transport to move goods to market. Mr. Chikamba, located close to the main Murewa-Harare road, pays Z\$55 for a car or small truck to carry 25 mortars to Harare, roughly the same charge

Table 7.2 The Marketing of Tree-Based Craft Products in Mangwende, Mutoko and Uzumba Communal Areas (N=443)

Product	Buyers	Sellers	Number of items sold annually/ household	Annual income per household (Zim\$)	Average price (Zim\$)
Mortars	312 (70.4%)	4 (0.9%)	mean 15.75 med 4.50 s.d. 24.90	mean 196.50 med 67.50 s.d. 294.20	12.50
Kitchen Utensils	284 (64.1%)	5 (1.1%)	mean 159.00 med 20.00 s.d. 226.30	mean 102.20 med 10.00 s.d. 130.30	0.65
Yokes	230 (51.9%)	3 (0.7%)	mean 21.00 med 12.00 s.d. 21.00	mean 390.00 med 150.00 s.d. 441.90	18.55
Furniture ¹	216 (48.8%)	4 (0.9%)	mean 5.00 med 5.00 s.d. 2.95	mean 64.75 med 22.50 s.d. 90.50	12.95
Tool Handles	214 (48.3%)	6 (1.4%)	mean 16.50 med 13.50 s.d. 7.50	mean 36.00 med 37.50 s.d. 26.30	2.20
Bark ^{1,2}	61 (13.7%)	4 (0.9%)	mean 3.75 med 2.0 s.d. 4.2	mean 39.00 med 35.50 s.d. 36.80	10.40
TOTALS ³ (all products)	349 (78.8%)	16 (3.6%)	— ⁴	mean 193.65 med 60.00 s.d. 440.00	— ⁴

- ¹ Furniture and Bark products include a range of crafts rather than a single product line
- ² Refers to products made exclusively from bark (eg, bags) or bark in combination with other materials (eg, reed mats woven with bark twine)
- ³ Craft-selling and craft-buying households may sell and buy a number of the listed products, therefore figures may not add up to expected totals
- ⁴ Number of items sold and average prices are not comparable between products

Source: Questionnaire Data

per piece as he would pay on the bus. The added advantage in this case is only making a single trip as well as being dropped at the location from which he conducts his sales.

As would be expected, available market outlets depend to a great extent on the type of product being sold. For example, tool handles and yokes appear to be restricted to sale only in rural, mainly local markets. Kitchen utensils such as wooden spoons, plates and bowls on the other hand, have a market in both rural and urban areas. More unexpected is the number of mortars marketed outside their area of production, in some cases outside of the rural areas completely. One artisan reported selling mortars door-to-door in the high density suburbs of Harare, having no difficulty in selling 25 mortars - about one month's production - over a period of two days. I also encountered two instances of mortars being sold out of Zimbabwe. Mr. Chuta sold two orders totalling 46 mortars to South Africa through a local middle-man. In an interview with the middleman, I was told of another mortar-maker from the same area who had supplied mortars for sale in Botswana.

Most of those interviewed access multiple markets and sales channels to sell their goods over the course of the year. One mortar seller reported that during the maize harvest, local sales, which make up the bulk of his business, are very slow leading him to sell in Harare instead. Out of eight artisans interviewed, six stated the bulk of their sales were to outside markets, while only two sold mainly locally. Two of the five

artisans who reported making and selling a range of products, pointed out that different products had different markets. For example, Mr Mhezi markets tools, handles and some bowls locally while selling spoons, plates and other bowls to urban markets. Mr Kamanya sells bowls locally and plates, spoons, sculpture, toys and mortars elsewhere. Most artisans have a range of buyers for their products, mainly depending on the type of commodity involved but also, to a lesser extent, on individual choices. Mr Kamanya's marketing strategies are not merely influenced by the existence of a market for a particular commodity. Vendors at Mbare are now his main buyers for bowls in the city, he had previously sold to craft shops but gave up on them because they did not deal in adequate volumes. He also refuses to sell mortars at Mbare, even though a strong market exists, because of the presence of 'makoronyera', or cheats, who pay low prices. Instead, mortars are sold in communities 30-50 kms away which have an added advantage of costing half as much to reach by bus.

Other than sales to local people who come to the homesite to purchase goods, there are a wide range of market channels available to artisans. Within the local district, business centres and growth points with their few small shops, bus stops and sometimes a clinic or a school are an obvious site for the establishment of an informal market²⁵⁹. Only two large settlements, Murewa and Mutoko towns, the administrative

²⁵⁹ This type of market became established for the first time at Charewa business centre in northern Mutoko in the fall of 1992, testament to peoples' search for income during the drought. Local markets also appear, of course, under less dire circumstances.

centres for Mangwende and Mutoko CAs respectively, are found within the study area. Murewa and Mutoko towns provide a sizeable market for artisans to sell their products directly to the consumer or to a retailer, both have central covered markets with stallholders selling goods ranging from vegetables and fruits to utensils and traditional medicine. The lack of attractions to draw tourists to these areas means that most of the craft goods sold at these markets are limited to wooden spoons and bowls although Mr Chavunduka reported some sales of decorative items through a vendor at Mutoko who sells crafts by a number of local artisans. A stallholder at Murewa market also occasionally sells goods by more than one artisan, and at times acts as a middleman to market these goods in other areas. Other villages and business centres at some distance from artisans' home districts or in adjacent CAs are sometimes marketed to but only in limited amounts.

As already mentioned, most of the eight 'specialist' artisans sold at least some of their products in Harare, at Mbare market or nearby Magoba market, craft shops catering mainly to tourists, supermarkets, wholesalers or door to door. Artisans rarely, if ever, sell directly to consumers through the two main markets in Harare. There are a number of reasons for this. Mbare market appears heavily over-subscribed with few opportunities for interested sellers to gain their own stall. One artisan stated that the procedure to acquire a stall is too onerous, presumably because of the waiting period and the red tape involved. Even if it is possible to obtain a stall, he feels the rent is too high. Magoba market, which appears to be somewhat of an 'overflow' market a

short distance from Mbare, has a high percentage of stalls selling crafts of all types and has some space for those who wish to rent stalls on a daily basis. However, the Z\$4 daily rent seems a deterrent to the few artisans who had experience of the market. Another negative feature is the pressure tactics employed by the more permanent stallholders who want to buy the crafts for resale at a hefty mark-up. A further reason artisans do not sell directly to consumers at the Harare markets is the time involved, most seem more interested in clearing their stock and getting back to their work than in gaining the higher returns that come with taking the time to sell direct to consumers. Reported mark-ups by market vendors ranged from 35% to over 400% depending on the buyer, when foreign tourists were not involved, mark-ups appeared to be in the area of 100%.

Craft stores which cater mainly to foreign tourists can be broken down into two main categories: those that function as a privately run, profit-making business and those that are non-profit and aim to provide marketing services to artisans as part of an over-all development philosophy. Although certain stallholders at Mbare or Magoba market cater to the tourist trade, there are a number of stores, often white-owned, that market a wide range of African 'curios' in sophisticated business surroundings. Non-profit operations, such as Silveira House which has been involved in rural development activities dating back to the 1970s (Scoones and Matose, 1992: 62), will sell items such as decorative carvings, although on occasion only after putting them on display for a certain period. Murewa Culture House, located on the outskirts of Murewa town,

provides a free market outlet for artisans and training sessions in a wide range of crafts as well as organizing occasional displays in Harare to provide exposure for young artists

The only artisans dealing with supermarkets and commercial sector wholesalers were those involved in the production and sale of kitchen utensils, particularly wooden spoons. Mr. Mhezi, arguably the artisan most integrated with the formal sector among those interviewed, deals with some of the largest supermarkets in Zimbabwe and at least one wholesaler, selling a total of a thousand spoons "in a good month". Spoons are sold in lots of a hundred and priced between Z\$75 and Z\$125 depending on spoon size. Both Mr. Mhezi and another spoon producer, Mr. Kamanya who claims he can make up to 800 in a month along with products such as bowls, have assistance from at least one relative in their work, however, these production levels are attained with the use of fairly basic hand tools only. Mr. Murimbari who works mostly on his own, produces and markets about 200 spoons a month and sells to some of the smaller Harare supermarkets.

Door to door sales in the city among craft workers are mainly the domain of mortar producers although occasionally spoons may be sold the same way. Artisans will store their mortars in one locale until approached by an interested buyer at which time arrangements for delivery are made. This type of marketing where goods are not carried with the seller has an important difference from sales to passers-by on the

street. Street hawking is against the law and the police tend to crack down forcefully on these activities, confiscating goods and levying fines. According to Mr. Kamanya, if market vendors observe someone selling to individuals they will try and have that person arrested because he or she will be reducing the vendor's business.

It is difficult to determine whether or not the range of markets open to artisans has altered significantly over the years. Interviews with long time craft workers such as Mr. Wekwete, who has been in the business for nearly 50 years, suggest the number of available market outlets may have increased over time. In the 1950's he sold mostly to local people, but since the 1970's, Harare has become his most important market; such statements support the view of a trend towards increasing market choices. However, Mr. Wekwete's account also supports an alternative view: that of a shift towards new markets among some entrepreneurial artisans to take advantage of increased opportunities they perceive. Further research would be required to ascertain which, if either, of these scenarios has any validity.

It is impossible to make generalisations as to whether or not artisans prefer market outlets that allow for bulk or individual sales; such decisions depend on where the best returns are perceived to originate as well as the specific circumstances surrounding a sale. Mr. Chuta, who markets most of his mortar production locally, has also sold two orders totalling 46 mortars through a local middleman to buyers in South Africa. Generally, he prefers selling on a "one-one" basis to local people because he gets a

better price, however, the sales to South Africa came at an opportune time when he had a backlog in stock and was able to clear out large volumes at one time

In the case of spoons, selling in bulk provides artisans with a number of benefits. Given that 100 or more can be sold to one buyer, the time savings in comparison to individual sales will be enormous. With a significant proportion of sales among the specialist producers going to the commercial sector, prices will most likely be higher than if the same product was sold to rural area consumers. Data gathered from artisans bears this out (Table 7.2): while spoons sold for an average of Z\$0.65 each in rural areas, artisans selling in Harare to a variety of buyers earned between Z\$0.75 and Z\$1.50 per spoon with bulk sales. Even after factoring in transport costs ranging from Z\$0.035 to Z\$0.14 per piece, the three artisans who sell spoons in Harare average between approximately Z\$0.86 and Z\$1.43 for each. Opportunity costs in making the trip and foregoing a day's production are more difficult to assess in part because it is highly unlikely that those who market in Harare could sell anywhere near the same volumes in the CAs, however, the price margin between rural and urban markets indicates that the cost of a sales trip to Harare in time and money is well rewarded by the increased returns.

7.2.8 Income from Craftwork

The data on craft selling households support the view that, as with over-all household

incomes, the earnings from craft activities are "immensely variable" (Mhone, 1991: 21). From the questionnaires (Table 7.2), the average annual income accounted for by crafts is Z\$193.65, a figure which conceals enormous variations in individual craft incomes ranging from Z\$5.00 per year to Z\$1812.25 per year. The income from wood crafts is quite low among some households, however in only three of 16 households do craft earnings make up an insignificant portion of the household budget, that is less than five percent of total known²⁶⁰ income. Helmsing (1987: 11) notes that NAE income "constitutes in most cases an integral part of the household budget" often relied upon for meeting substantial expenditures such as school fees, a point echoed during my own interviews. He (1987: 15-16) further argues that while NAE "is less important than agriculture as a source of cash income... rarely... is it unimportant." The questionnaire data (Table 7.3) show that 12 out of the 16 artisans apparently earned higher incomes from agricultural production than from craft activities. The data also show that among those 12 artisans, NAE incomes - including all craft activities, not just those based on wood - are generally in second place due to the already discussed limited involvement by craft households in wage labour. Two other studies (Govaerts, 1985 in Carter, 1992: 30, Jackson and Collier, 1988: 19) place NAE income third in order of importance after agricultural income and remittances/wages.

²⁶⁰ See note 1 in Table 7.3. It is difficult to suggest likely earnings that the two and ten households received from remittances and other non-farm activities respectively. Jackson and Collier (1988: 14) state that there are enormous variations in remittances between households but of the 37% of their sample that received remittances 75% earned less than Z\$160 per household per year from this source. In households with incomes under Z\$1000, Dore (pers. comm.) assessed average yearly remittances at between Z\$75 and Z\$160. For other non-farm income, Dore found the average was between Z\$100 and Z\$120. Jackson and Collier (1988: 17) across their total sample found the average earnings from this source among those households engaged in the activity was approximately \$225. In both studies, craft income which is listed separately in Table 7.3, is included in the total non-farm figure.

but their data are not differentiated between those households with craft income and those without.

The Jackson and Collier (1988:31-32) study established a connection between a wider range of income sources and higher over-all income. Dewees (1992:38), commenting on the Jackson and Collier study, points out

contrary to the conventional notion that the specialization of labour into particular activities tends to increase income, this finding suggests that diversification and the versatility of labour in rural Zimbabwe are the keys to increased incomes.

The questionnaire data on artisan households appear to support this assertion. Those households in the top half of Table 7.3, that is, those above the 'low' income level, have a greater range of income sources than those households with lower incomes. The top eight households average more than four sources of income, nearly two more than those with either 'low' or 'very low' incomes.

In-depth interviews with artisans did not strongly support the hypothesis that increased incomes are the result of increased income sources. Although all the artisans interviewed at length earned large amounts through the sale of crafts, not all of them had a wide range of income sources, and some demonstrated considerable concentration of effort on one or two activities. An important qualifier is that six out of the eight artisans interviewed are part of the "sizeable group" Helmsing estimates make-up 30% of NAE households where craft activities "constitute the major cash income generator" (1987:16). These artisans devote considerable time and energy to

Table 7.3. Income Sources (\$Z) of Craft Selling Households (N = 16).

Income level	Crafts ^{1,2}	Farming	Fruit	Remitt ³	Other Non-farm ⁴	TOTAL
Very High	1812.15*	600.00	134.00	0	0	2546.25
High	234.00*	225.00	1875.00	0	yes	2334.00*
High	200.00	900.00	0	0	800.00*	1900.00*
Medium	75.00	1400.00	0	0	0	1475.00
Medium	9.00	330.00	1000.00	0	yes	1339.00*
Medium	238.00*	800.00	65.00	0	0	1103.00
Low>Med	15.00	180.00	650.00	yes	0	845.00*
Low>Med	64.00*	650.00	80.00	yes	yes	794.00*
Low	215.00*	325.00	0	0	0	540.00
Low	5.00	415.00	0	0	yes	420.00*
Low	60.00	250.00	0	0	yes	310.00*
Low	60.00	140.00	142.00	0	yes	342.00*
Low	60.00	160.00	0	0	yes	220.00*
V low	10.00	0	84.00	0	yes	94.00*
V low	30.00	0	0	0	yes	30.00*
V low	11.00	0	0	0	0	11.00

¹ Income amounts provided for craft and fruit sales are derived from totals provided by respondents. Farming income is an estimate based on amounts of commodities sold multiplied by average prices. Other than in one instance, remittances and other non-farm income cannot be provided in exact amounts. In all cases this extra cash input was not considered to significantly alter the relative position of that household in terms of income category.

² The '*' next to some of the craft totals identifies households selling more than one craft product.

³ Remittances in these 10 cases were 'in kind' contributions of fertiliser.

⁴ 'Other non-farm income' came from carpentry (4 cases), blacksmithing (3 cases) and pottery, stone sculpting, gold panning and hiring out a scotchcart (1 case each).

Source: Questionnaire Data

their work and are rewarded with relatively high returns, demonstrating what is possible with these activities rather than what is the 'norm'. It may be that an increased number of income sources is only one part of the equation in increasing incomes. Even though some of the high earning artisans interviewed concentrate on only a few activities, their marketing strategies produce the best returns with the resources at hand. Therefore, much depends on the individual artisan. Although he may concentrate on only one or two products or activities, he may access more than one market niche such as by selling both locally and in Harare, or he may simply concentrate on the market with the best returns. In this way artisans may not succeed at all times but over-all returns could be improved.

For the seven artisans whose incomes could be assessed, monthly incomes from wood crafts ranged from Z\$100 to Z\$600 with a mean and median of Z\$400. These figures are based on months when production of crafts is in full swing, as already indicated, craft work is often limited to the five to eight months outside of the high labour demand period for agriculture. For example, actual monthly income for the highest producer dropped from Z\$600 to approximately Z\$285 when averaged over the year. In another case, the roughly Z\$470 earned each month for around seven months works out to Z\$3290 per annum, or Z\$275 per month over the year. Nevertheless, whether the craft income of these producers is Z\$1000 or Z\$3500 per year, their earnings from these activities are very high in comparison to reported income among the general population.

Given the high returns apparently available through craft enterprises, why have more rural people not taken up these activities? In fact, there are indications that increased numbers of people are becoming involved in craft work²⁶¹. Mr. Chuta who works in the vicinity of Murewa township reports that when he began making mortars to sell in the late 1970s, only one other person in the area was working on mortars and that person had taught him. By the mid-1980s, many more people were beginning craft work in the district, a number of them Mr. Chuta's students. In northern Mutoko, Mr. Kamanya and his teacher Mr. Wekwete reported that in the 1970s only three people in the area, including the two respondents, were involved in craft making; now there are at least ten people and probably more in the immediate area making and marketing wood crafts.

The motivations behind entry into craftwork activities appear to be diverse and complex and therefore it is unlikely that any one single factor could be singled out as having universal validity. Undoubtably, the high returns available are an important consideration for some, but the number of artisans earning large amounts through this work appear to be in the minority; for most it appears crafts are a secondary albeit valuable source of cash. It may be that an important attraction of crafts is the returns available relative to other possible income sources. Among the few artisans who reported holding a job in Harare prior to taking up craft work, one returned to northern

²⁶¹ Helmsing (1987:16) also found a 'modest' increase in NAEs in his study although he was uncertain whether this growth was cyclical - recovery after the 1983/84 drought - or structural - such as post independence growth in the economy of the CAs

Mutoko after discovering the pay was too low in the city to keep his family.

Although there were problems which hindered his business, it was "still better doing craft work than working for someone in town." As already indicated, a number of artisans made disparaging remarks about attempting to earn a living through the sales of crops alone. Mr. Wekwete feels the returns from maize production have dropped in recent years to the point that concentrating on farming "no longer pays." Even before factoring in production costs such as fertilizer, simply getting his maize to market might cost him up to 40 percent of his final sale price; he feels that with field crop prices being "oppressed" by the government, craftwork is a more profitable activity. Maize production was seen by more than one artisan as simply being too costly to undertake on a large scale especially when compared to the low opportunity costs of craft work. A further advantage of NAE income relative to farming income perceived by some artisans is its potential to be more of a year-round income source, especially for those who sell outside of the rural areas and therefore less affected by fluctuations in rural buying power. As one respondent put it, "mortars are ... year-round ... unlike maize which only comes once a year."²⁶²

²⁶² Although concern over the constancy of income appears logical, care must be taken in assigning values as to what is or is not a desirable trait among activities. Clarifying the basis for decision-making can prove challenging if not impractical. For example, concerns over income flows may involve not only their consistency but also amounts. Mr. Muzoka, a farmer in Mangwende CA, ranked mangoes as a superior source of income to bananas because he preferred the lump sum payments he obtained from mango sales compared to the steadier banana sales which yielded smaller payments over a much longer period. The particular needs of the household concerned will also factor significantly into any decisions. A year in which a household is anticipating a significant outlay, such as for metal roofing, will possibly shape the priorities, and therefore opinions, of the household regarding desirable forms of cash flow. Researchers must take into account that the information they obtain is often a 'snapshot' of the household and is but one aspect of a range of possibilities that make up the decision-making dynamic of that household over time.

Another key motivation behind some artisans' involvement in craft work, especially in recent times, is a general lack of alternatives for generating income. Since Independence, Zimbabwe has faced numerous problems ranging from recurring droughts to adverse economic conditions, resulting in a period characterised by rising unemployment, erratic economic performance and falling standards of living (Moyo and Sunga, 1991: 1). The formal sector in both rural and urban areas has failed to provide anywhere near the number of jobs required to meet the needs of the population, nor is it likely to be able to do so in the foreseeable future (Potts and Mutambirwa, 1990: 680; Mhone, 1991: 34). The large-scale commercial farming sector, a vital source of employment in the rural areas, has displayed a trend towards reducing total labour employment and shifting towards more seasonal rather than permanent hiring, resulting in negative consequences for farm workers' income and job stability (Roth, 1990: 52, 86; Arnold, 1990: 12). Economic stagnation has resulted in perhaps 75% of Zimbabwe's labour force being either underemployed or unemployed (Mhone, 1991: 4), creating a fertile base for the spread of the informal sector.

Artisans' comments support the argument that their increase in numbers over recent years is directly related to reduced opportunities for income generation. Mr Kamanya pointed out that jobs were easy to get in the 1960s and 1970s, but the situation has changed and with high unemployment and a lack of available alternatives "[there is] no other way for people to survive in the rural areas", other than try to create local work such as with crafts. He also said "because things are bad people have to rely on

[natural resources] to make a living . if trees [are] all gone, people will have to move [long] distances because they won't be able to make a living here " Mr. Wekwete who has sold crafts for nearly 50 years, feels that compared to the 1970s the rising cost of living has made life very difficult As Mr Chuta stated in explanation of the recent growth in artisan numbers, the "ever rising cost of living is causing people to come to depend on making money from mortars." Another artisan explained that his land allocation was inadequate to maintain his family and, given the problems of frequent droughts, selling wood products was his only realistic option.

Rural households need cash to meet needs such as school fees which in recent years have greatly increased in cost, and to satisfy the other requirements that may not be met through uncertain crop yields Craft work is one strategy pursued by rural residents to provide for their cash needs Although the earnings are by no means exceptional in most cases, as one carver pointed out, there is some security in crafts because the demand is fairly steady: "people always need tools." Mr. Murimbari claims that through selling wood products for 35 years, he has made a good living and been able to put his children through school; one of his sons, after recently losing his 'formal' sector' job, has begun assisting his father in his work. With so few alternatives available, for many participants the opportunity cost of engaging in these activities is effectively low or zero (Mhone, 1991:36).

7.3 FUELWOOD

Although the percentage of the population relying on fuelwood for cooking and heating purposes is enormous, estimated at 85% over-all (Kamau, 1989:30) and 99% of the rural population (du Toit *et al.*, 1984)²⁶¹, markets for fuelwood in both rural and urban areas are relatively small and undeveloped (*ibid.* 91, Dewees, 1992:33, Bradley, 1990:16; Attwell *et al.*, 1989:48, Katerere, 1988:8). In a study of 1829 rural households in 15 CA sites with widely varying woodland cover, du Toit *et al.* (1984:91) located only 19 households that had ever purchased fuelwood, although as the authors note, because of the questionnaire's orientation towards farming households, there may have been more trade in woodfuel taking place among teachers, business people and other wage earners. Nevertheless, the market for woodfuel appears to be very small within the rural areas surveyed. Even when studies focus on relatively deforested areas, the majority of households are able to meet fuel needs other than through the market and prices remain low (Bradley, 1990:16-17).

Other studies in Africa support the finding that rural fuelwood markets are very limited in size (*ibid.*:16), a point further borne out by questionnaire data from the study area. None of the respondents claimed to have sold fuelwood although 17 households, less than 4%, admitted to having purchased it. As is the case with other tree products, especially those removed for sale from land not under the control of the

²⁶¹ While it is recognised that gross estimates such as these need to be quoted with caution (Bradley, 1990), these figures do provide an indication of the importance of woodfuel.

seller, there is some reluctance on the part of those involved in the fuelwood trade to provide information on their activities. Attwell *et al.* (1989:29) report problems in the collection of data on fuelwood marketing "...owing to the obvious reluctance of respondents to admit to commercial wood activities associated with wood trade."

However, as will be discussed later, it is also possible that the discrepancy between buyers and sellers of fuelwood can be explained by purchasers buying fuelwood from outside of the local area.

Much more unusual for Africa than the lack of a rural woodfuel market is the relatively undeveloped state of the woodfuel market in Zimbabwe's urban areas. Two separate studies (Attwell *et al.*, 1989:48; Hosier, 1986:29-30) estimated that between 40% and 44% of urban households purchased woodfuel, with purchase rates dropping among better off households. Unlike other African countries where the dominant fuel source for poorer urban dwellers tends to be charcoal (Bradley, 1990:16), there is almost no market whatsoever for charcoal except among the wealthy who use it for outdoor barbecues (Katerere, 1988:7). The continued reliance by poor urban households on fuelwood suggests wood supplies are still relatively plentiful in areas surrounding cities and towns; where wood is scarce and must be moved long distances, it is generally more economical to convert it to charcoal to save on transport costs (Energy Studies Unit, 1984; Barnes, 1987 in Attwell *et al.*, 1989:79).

Although the market for fuelwood is small in urban areas and the amounts consumed

only account for perhaps three percent of all fuelwood burnt in the country (Beijer Institute, 1985 in Attwell *et al.*, 1989:80), the roughly 250,000 tonnes bought and sold in cities and towns each year in Zimbabwe have considerable economic value²⁶⁴ (Katerere, 1988:12). However, it does not appear that CA residents are sharing in the economic proceeds of the fuelwood trade. While 85% to 90% of the fuelwood coming into Harare is from the indigenous woodlands, only about four percent of the total quantity of wood actually originates in the CAs²⁶⁵ (Attwell *et al.*, 1989:39,43). By far the major source of fuelwood is the large-scale commercial farming areas (LSCFA) south east and south west of Harare, accounting for over 70% of the total supply. Other sources of fuelwood for the capital are small-scale commercial farming areas (SSCFA) and to a much lesser extent, resettlement land (Mazambani, 1984:2, Attwell *et al.*, 1989:37,39).

Of significant importance for any programme considering the production of fuelwood for the market is the motivation of those already selling wood. Only about one-fifth of the fuelwood selling respondents in the Attwell *et al.* study listed their prime motivation for cutting trees as fuelwood sales. More than half gave their reason as clearing for croplands or maintaining pasture; the cut trees were sold for fuelwood to

²⁶⁴ Bradley (1990:15) in an overview of woodfuel prices in urban areas of Zimbabwe estimates an average price of Z\$100 per tonne with a range from Z\$52 in Kadoma Town to Z\$120 in Harare and Z\$121 in Bulawayo.

²⁶⁵ The only exception to the low level of supply from CAs appears to occur during drought years when CA farmers turn to fuelwood sales to urban suppliers as a survival strategy (Mazambani, 1984:7, Katerere, 1988:8). Although the drought at the time of my study was the worst of the century, none of the farmers interviewed admitted to any involvement in the fuelwood trade up to the time when harvest would normally have begun, I do not know if they turned to selling firewood as the drought progressed.

recover some of their costs (1989:74). Furthermore, nearly a third of the farmers that had supplied fuelwood to the Harare market in the past would not do so again because it was 'not worthwhile' in financial terms (*ibid*). There is little indication in farmers' responses that they share the view of Katerere (1988:13) that fuelwood from LSCFAs represent a 'wind-fall profit' for landholders.

The marketing chain for fuelwood in the high density areas of Harare begins with traders who generally purchase directly from farmer suppliers; traders sell to wood vendors who in turn sell to households (Mazambani, 1984:3,8). Each step in the chain involves a minimum of a doubling in price resulting in a final mark-up about eight times the price at source; thus, retail mark-ups account for 47%, the largest share of the final price, with transportation costs amounting to 27% of the retail price. The roadside price amounts to only a 12% share of the total (Attwell *et al.*, 1989:58-61). Although as Katerere (1988:12) points out, woodfuel prices have risen sharply in urban areas through the 1980s, it does not appear that prices have actually increased beyond the rate of inflation. Therefore, in real terms, fuel prices remained more or less constant for urban households, but did increase more than the price paid by vendors to their suppliers suggesting further increases in retail margins (Attwell *et al.*, 1989:62,79). The Attwell *et al.* study found that a large majority, over 70%, of High Density households found fuelwood prices 'expensive' or 'very expensive', a situation Mazambani (1984:5) blames mainly on "profiteering by wood traders and vendors." However, with the proliferation of unlicensed vendors during the early 1980s, perhaps

due to a growing shortage of formal sector employment, and the practice by some larger traders of selling direct to consumers, licensed vendors have seen their share of the market decline. Rather than a case of widespread profiteering, increasing prices may be the simplest strategy for vendors attempting to maintain earnings in a climate of increasingly unregulated competition (*ibid* 4, Katerere, 1988 13)

Although woodfuel markets in Zimbabwe, especially in rural areas, are quite under-developed, as McGregor (1991:206-7) points out, woodfuel markets are not necessarily adequate indicators of the relative scarcity or abundance of wood. A market for fuelwood may develop as much in response to increasing economic specialization and exchange as to widespread physical scarcity, where shortages do occur, people may prefer to adapt their harvesting and consumption strategies rather than resort to the market to meet fuelwood needs (Deweese, 1989 1167-9). While there may not be a fuelwood 'crisis' in a national sense, there are shortages experienced at the local level in some CAs (World Bank, 1991:2, Deweese, 1992:31). Some respondents in the study area reported that favoured firewood species are becoming scarce and it was alleged that some cutting of live trees was occurring.

In the Attwell *et al.* study, enumerators stationed near Harare at a roadblock on the road to Mutoko recorded significant quantities of fuelwood being carried away from the city; the authors suggest this reverse flow of wood is due to the difficulty rural residents face in certain parts of Mangwende and Uzumba CAs in obtaining adequate

fuel supplies (1989:54). Wood 'exports' from the city may explain the discrepancy between buyers of wood and the apparent lack of sellers within the study area population. However, perhaps a more likely reason is the purchase of fuelwood from LSCFs by residents of adjacent CAs, a practice reported by a wage earning respondent in southern Mutoko. LSCFAs are undoubtedly an important source of firewood for residents of more deforested CAs, although by no means is all or even most of this wood obtained legally (Katerere, 1988:6; Fortmann and Nabane, 1992:33).

7.3.1 Fuelwood Dependant Products

While fuelwood is clearly of minimal importance to CA residents as a direct source of income, a number of marketed goods which depend on the burning of wood for their production are at the opposite end of the scale. In Helmsing's survey of non-agricultural enterprises (NAEs) in Zimbabwe's CAs, of the approximately 40% of enterprises directly or indirectly dependent on forest or tree-based inputs for their production, half of those require the use of fuelwood in the production process²⁶⁶ (1987:17). Two of these fuel-based activities, beer brewing and brickmaking, require very large amounts of woodfuel²⁶⁷. Besides its importance in reciprocal labour-

²⁶⁶ Helmsing's list of NAEs which are dependent on fuelwood inputs is the same as those identified in the study area: baking, beer brewing, blacksmithing, brickmaking and pottery.

²⁶⁷ Estimates of woodfuel use for beer brewing and brickmaking - not necessarily for the market - by rural households range from 0.4 tonnes of wood per household per year for bricks and up to 1.3 tonnes/hhld/year for beer brewing (McGregor, 1991:229-30, Grundy *et al*, in prep. in Campbell and Grundy, 1991:44).

exchange strategies especially for households that cannot afford to pay cash to hire workers, beer brewing can provide a source of income for poor families (Wilson, 1990 in Dewees, 1992:39) In her research in Shurugwi CA, McGregor (1991:230,232) noted that 25% of the brickburners surveyed gave 'sales to others' as their reason for burning bricks Perhaps because of the limited investment required to begin these activities, beer brewing and brickmaking are among the NAEs that have demonstrated the greatest proportional growth since independence (Helmsing, 1987:7)

The intention of my research was to focus on marketed goods that were either completely composed of tree or forest products or contained these products as a part of a marketed good, however, I also recognised that a significant portion of NAEs relied on fuelwood inputs for their production. Therefore, respondents were asked if they engaged in NAEs and if so, whether these activities were brickmaking/building or cooking/beermaking If they did not undertake either option, respondents were asked to describe their activity. Unfortunately, brickmaking and building responses are lumped together, therefore the results for this section must be understood as relying on wood in some manner either for fuel or for construction materials In the sample, 46% of respondents - 204 households - stated they engaged in some non-farm activity other than paid employment to earn extra money Of these activities, by far the most important is brickmaking and building, accounting for 30% of the 204 responses, closely followed by cooking and beermaking at 23%²⁶⁸ When the four activities are

²⁶⁸ As previously mentioned, brickmaking and building NAEs tend to be dominated by men while cooking and beerbrewing are chiefly undertaken by women

combined with other energy-based activities such as blacksmithing and pottery, perhaps 65% of all reported NAEs in the study area rely to some degree on woodfuel inputs, or to a lesser extent, wood for construction²⁶⁹. While not accounting for any direct sales to provide income, fuelwood is an essential input into many, if not most, of the NAEs undertaken by households in Zimbabwe's rural areas.

7.4 CONSTRUCTION POLES

Construction poles play a much larger role than fuelwood in the study area's cash economy. Although only six out of 443 households, or 1.5%, sold construction poles, 103 households or 23% reported purchasing them. Reasons for the apparent importance of construction poles in the market probably relate to the specific qualities required of them. While a wide range of adaptations including the substitution of alternative materials, are possible in woodfuel use, pole requirements for durability, straightness, length and resistance to insects are much more stringent (Bradley, 1990:17; McGregor, 1991:211; Arnold, 1990:15). Obviously the choice of construction wood is affected by availability, but generally "... people are less willing to substitute poorer quality timbers than they are fuels" (McGregor, 1991:211). In areas of deforestation where suitable poles of indigenous wood are depleted, households may have few alternatives other than reducing pole use (Deweese, 1992:36).

²⁶⁹ As with the rest of the population, those involved in NAEs relying on fuelwood for their processing obtain their supply in a manner other than through purchasing. No association was found between those buying fuel and those relying on it for their income generating activities.

or, for those that can, resorting to the market. Among the few rural households in the du Toit *et al* study that reported purchasing poles, the reasons given centred on the difficulty of finding poles, as well as the superior construction qualities of purchased poles (1984,93)

Unlike firewood, which is generally collected when dead, construction poles are almost always cut from live trees²⁷⁰ (Campbell and Grundy, 1991:42, Dewees, 1992:36, McGregor, 1991:211). McGregor (1991:213) notes in Shurugwi it is considered illegal to cut poles from communal grazing land or nearby resettlement areas instead of from land under the individual control of the cutter, however, such illegal cutting is very common. In other areas, cutting poles is only allowed with the permission of local authorities, a requirement frequently disregarded (Grundy, 1990 in Campbell and Grundy, 1991:36, Nhira and Fortmann, 1991:23)

In the study area, a similar range of restrictions on the use of poles was recorded. A woman household head reported that it was illegal to cut poles in the forest, even though, perhaps due to the regulations, the surrounding woodland cover appeared good. In another, more deforested area in Mangwende CA, the local VIDCO will grant permission for the cutting of live trees. Only one seller, from Mutoko, admitted

²⁷⁰ Cutting of live trees for construction wood appears to be almost exclusively the responsibility of men (McGregor, 1991:211-13, Chidari *et al* 1992:13). Perhaps because of an association with 'men's chores', pole marketing in the study area is nearly completely controlled by men: an observation supported by Chidari *et al* (1992:14) who note that women will rarely sell poles in their husband's absence, although they commonly sell fruit in the same circumstances.

to using trees from the forest. The other sellers produce poles on their own farms from woodlots ranging in size from 10 to 100 trees. All the recorded sellers, except for the one using forest trees in north west Mutoko, are located in sites in Mutoko clustered along the main road beyond Mutoko town. No sellers were recorded from Mangwende or Uzumba CAs, parts of which are heavily deforested (du Toit *et al.*, 1984-94). From the numbers and location of pole sellers, it is clear that the demand for marketed poles is not being met by CA farmers alone, in fact, du Toit *et al.* lists a range of other sources mentioned by buyers including District Councils, community/group projects, private sellers and various government agencies (*ibid.* 93). Respondents who discussed sources for purchased poles in the study area mentioned gum trees bought from schools, apparently as a school fund raiser. A farmer in west-central Mangwende CA said poles were in short supply in his area and were purchased from a source - whether a large-scale commercial farm or government plantation was not clear - near Marondera some 50 kilometres away.

The price per pole among sellers in the study area varied from Z\$1 to Z\$3, perhaps depending on size and quality but apparently not depending on whether it was exotic or indigenous since at Z\$2.50, the poles cut in the forest were among the more expensive offered for sale. Based on the limited results available, it does not appear that the type of buyer has the expected influence on prices: the two farmers selling to local middle-men received as good or better prices than the farmers who sold to local

buyers directly²⁷¹. Kamau (1989:46) suggests that the state of the natural woodland may effect prices for construction wood with higher prices in more deforested areas, but the data are too limited to assess his argument. However, du Toit *et al* (1984:92) found a strong correlation between knowledge of a construction wood market and the state of local woodland cover, more deforested areas appeared to have a significantly larger market for poles. Total earnings among the six farmers from the sale of poles was fairly low. The lowest total was Z\$8, the highest Z\$60 with the mean just under Z\$20 and the median just over Z\$10. Of some interest is the difference between the potential/expected prices for poles suggested by a Forestry Commission employee and a farmer planning on growing gum trees for sale, compared to the actual prices obtained. The employee said a pole three to four years old could sell for Z\$6, while the farmer anticipated selling for Z\$9-12, both estimates are considerably higher than the prices realized by sellers.

A few farmers in the study area not yet involved in growing gum trees did express an interest in doing so. Some believed that they could earn money from the trees by selling them for poles, especially in areas where roofing materials are expensive, one farmer is planning a gum plantation seven acres in size with the intention of starting a furniture business with local people. Other farmers interested in gum trees simply wanted to avoid spending large amounts on construction materials by producing their own.

²⁷¹ Although without information on the size of the poles, I acknowledge comparisons must be used cautiously.

Unfortunately no in-depth interviews were undertaken with pole sellers in the study area. However, a Forestry Commission employee did acknowledge that although pole marketing as an offshoot of the RAP had begun only quite recently in parts of the study area, farmers were already encountering problems in finding buyers. Casey and Muir (1987:33) also noted that farmers were beginning to enquire about outlets for gum poles as trees neared maturity, especially in those areas where poles were not in short supply.

While the market is no doubt variable and can only be assessed on a case-by-case basis, there appears to be potential for farmers to enter into some degree of pole production for the market. Whether or not farmers can compete with other suppliers will depend a great deal on local circumstances; considering that people reported travelling considerable distances to purchase construction wood and paying transport charges as high as Z\$1.50 per pole, there may be opportunities for local demand to be met with local supplies.

7.5 TREE SEEDLINGS

None of the questionnaire respondents stated they were involved in tree seedling marketing, but I did locate someone that Wilson (1987:13) describes as a 'rural specialist' in the art of tree production both from seed and through grafting. Mr. Bope learned his trade as a nursery worker in Harare and has been selling trees out of his

CA home for more than ten years. He sells fruit trees for between Z\$4 and Z\$7.50, mangoes being the cheapest, oranges and avocados the most expensive, and gum trees for Z\$0.25 because of their ease of production. Local people are his main customers although he does wholesale to a company in Murewa town, he claims he is the only person in his area selling trees. His main activity is grafting and budding two varieties of oranges onto quick growing rough lemon rootstock, a procedure which significantly speeds up time to fruiting. An interesting sideline business for Mr. Bope is offering training to others: in a two day course for which he charges Z\$300, he teaches grafting and budding techniques. When I suggested his fees seemed high, he said he had already trained three people and stated "I'm providing people with a potential gold mine." He claims he can earn thousands of dollars in a month from tree sales and, although I cannot verify his income, he did have an extremely large operation that appears could support the sales' levels he described.

7.6 OTHER MARKETED TREE AND FOREST PRODUCTS

A host of other products, though not necessarily originating directly from trees, are closely associated with trees and/or forests. In Zimbabwe, those sometimes termed non-wood forest products which have entered into the marketplace to some degree are mushrooms, honey, insects and medicinal herbs. In the context of the CAs, these products are generally considered to be products of the indigenous woodlands²⁷²

²⁷² Fortmann and Nabane (1992:31) report that woodlands outside of the homestead are an important source of a large number of tree products, among them medicines and edible insects. The

Although only limited research has been conducted in Zimbabwe on what are sometimes disparagingly but inaccurately termed 'minor forest products', their importance to rural people is widely acknowledged both in Zimbabwe and other countries (Campbell and Brigham, 1993:3, Bradley, 1990:18-19; Shiva, 1989; FAO, 1987, de Beer and Mcdermott, 1989; Wilson, 1990, Wilson, 1989 in Campbell and Grundy, 1991:45) Those products considered food play an especially important role in the diet of rural people (Bradley, 1990:19). Campbell *et al.*, (1991b:11) in a survey of 359 households in three CAs established that 94% of respondent households consumed gathered wild foods, albeit often in small amounts, for their regular meals. While clearly important to the diet of rural area residents, the marketing of non-wood forest products appears to be quite limited. Furthermore, significant differences between studies on non-wood forest products suggest there is considerable spatial variation in the degree to which these products enter the marketplace

Mushrooms

Many of Zimbabwe's CAs boast a wide variety, perhaps as many as 45 different species, of edible mushrooms (McGregor, 1991:262; Wilson, 1990:142). Even so, there is a perception in some areas that the abundance and availability of mushrooms

importance of woodlands for these products is also supported by evidence that the supply of edible mushrooms and insects has been drastically reduced by deforestation (McGregor, 1991:262,265). Wilson (1990) notes that almost all of the edible mushroom species in Zimbabwe are dependant on woodland ecosystems. Honey is also largely collected from wild hives found in trees or caves, partly due to the apparently widespread belief that bee keeping is illegal, although such a proscription appears based only on traditional practices where hives were constructed from the bark of ringed trees (McGregor, 1991:270; Wilson, 1990 in Dewees, 1992:12)

have diminished in recent times due to a combination of woodland clearance, soil compaction by cattle and leaf litter collection for use as fertiliser (McGregor, 1991:263). The fact that mushrooms, as well as other wild foods, remain important components of rural diets suggests that large-scale commercial farms and relatively uncleared resettlement areas adjacent to CAs are key sources of these products (McGregor, 1991:263-5). There is a common adage that 'the communal areas start where the trees stop'. Although this may not be completely accurate, and in fact paints an overly optimistic picture of commercial farm lands as retaining extensive tree cover (Chidari *et al.*, 1992:103), there is little doubt that commercial farms and resettlement areas are often used, sometimes extensively, by CA dwellers to obtain a range of products including medicines and wild foods (*ibid* 100-01, Fortmann and Nabane, 1992:29-33).

The market for edible mushrooms in the study area is very small indeed: only one questionnaire respondent reported selling mushrooms²⁷³ and only two stated they had purchased them in the previous year. The Campbell *et al.* (1991b) study undertaken in part in Mangwende CA, indicates mushrooms are clearly an important part of the diet in the study area; however, results from my survey suggest they have not entered the marketplace to any significant degree. The limited local demand is in keeping with the conclusion reached by McGregor (1991:265) that demand is the main constraint on

²⁷³ The farmer reported selling 11 small bowls at a price of Z\$0.50 each during the month of January only. Apart from this farmer and the farmer mentioned previously who obtained mushrooms from the commercial farm, an employee from the Forestry Commission in Murewa also attested to the existence of mushroom marketing in the study area.

the market for mushrooms. She notes that women and children in Shurugwi CA obtain some income from mushroom sales and reports a price of Z\$0.50 to Z\$2 for a plastic bag full sold locally, comparable to the price asked by the seller in my study. Sales also occur from roadside markets (Sharpe, 1988 in Campbell and Brigham, 1993:10) and in urban areas. A vendor outside of a supermarket in a low-density suburb of Harare was observed selling bags of wild mushrooms for Z\$5 which indicates a significant though not unexpected mark-up between rural and urban areas.

Edible Insects

The most important edible insects in Zimbabwe include species of caterpillars and termites as well as some crickets and grasshoppers (Campbell and Brigham, 1993:9). Although there is considerable yearly variation in the abundance of certain species, during years of high rainfall the consumption of insects makes an important contribution to rural diets (Deweese, 1992:12, McGregor, 1991:267). In the Campbell *et al.* (1991b:11) survey, 92% of respondent households stated they collected insects.

As with edible fungi, deforestation and to some degree over-harvesting have been blamed for declining availability of commonly consumed caterpillar species (McGregor, 1991:265, Wilson, 1990:574). McGregor (1991:265) notes that in Shurugwi, all but one of the 14 caterpillar species normally eaten have shown a considerable decline in supply. The harvesting of mopane worms, one of the most popular edible insects, for sale is sometimes accomplished through highly destructive

means such as cutting branches or whole trees (Campbell and Grundy, 1991:46, Wilson, 1990:574). Nhira and Fortmann (1991:22) cite reports of commercial harvesters cutting down as many as a third of the standing trees in one district to increase the rate of harvest. Deforestation can result in certain species disappearing from an area only to be replaced by less desirable ones. In contrast to the termite species commonly gathered as food, 'harvester termites', which typically invade areas cleared of trees, are considered to be inedible (Deweese, 1992:12). Over-all, the availability of insect foods is difficult to assess. While some species appear to be in decline, other consumed insects which do not rely on woodlands but are found in agricultural or other disturbed ground may actually be increasing in number and relative importance (McGregor, 1991:267; Wilson, 1990).

A key issue surrounding these foods which does not appear to have been addressed as yet is what, if any, effect the alteration in the type of insects available has had on different societal groups. Furthermore, what associations do these increasingly important insects carry with them? McGregor (1991:270) notes that certain insect foods *ie.* some kinds of termites, are stigmatised as "a food for the poor and the elderly." Arguments that although woodland species are in decline, other species are on the increase do not address whether or not the 'replacement' insects meet either the dietary needs or preferences of local people. Such a debate may in the end be surpassed by changing tastes towards this type of wild food. Wilson (1990:574) reports that consuming caterpillars is beginning to be seen as 'not modern' among some rural

people and therefore rejected as a dietary practice.

In the study area, insect foods are popular enough to have entered into the marketplace, albeit only to a limited degree. Only one household stated they had sold edible insects in the previous year but 20 households, 4.5% of the sample, reported purchasing this product. The discrepancy between the two figures is most likely due to many, if not most, of the buyers either purchasing caterpillars outside of the study area or buying insects that have been brought in to the CAs and sold in regional centres or growth points²⁷⁴. In the one household selling insects in the study area, the female household head conducted the harvesting in the CA and marketed directly to local people at a price of Z\$0.50 per cup. A farmer in Mutoko CA revealed that caterpillars, as well as mushrooms, intended for the market were harvested from a nearby commercial farm because there were 'too few' in the CA itself. As with edible fungi, commercial farms and resettlement areas can be important sources of insects. Fortmann and Nabane's (1992:29) research indicates that indigenous woodlands on commercial farms were the site of close to 10% of the trees relied upon by neighbouring CA dwellers to provide edible insects.

Although not true of the rural areas, there does appear to be a significant market for

²⁷⁴ Due to the need to focus on product marketing, more information could not be obtained on the behaviour of buyers including the sources of purchases

edible insects in urban centres²⁷⁵. While certain types of termites are looked down upon as food to be consumed during main meals, the same stigma may not be attached to these insects when consumed as a 'snack' (McGregor, 1991:270). In fact, termites are popular as a snack in beer halls and with their sizeable market, can provide a good source of income²⁷⁶ (*ibid.*; Wilson, 1990:572). The trade in insects is possible because of their ability to be stored for a period of time following frying, grilling or drying (Deweese, 1992:12; McGregor, 1991:270; Wilson, 1990:574). I noted dried mopane worms packaged in plastic bags for sale in one of Harare's largest supermarkets. Wilson (1990) suggests that mopane worms have a price per kilogramme comparable to that of fresh beef.

Honey

Honey is an important woodland product collected and eaten to some degree by most rural households (Wilson, 1990:569-70; Campbell *et al.*, 1991b:11). Most honey for domestic consumption is harvested from wild hives, often located among the granite outcroppings of the CAs, or from stingless bees which inhabit holes in trees or in termite mounds (Wilson, 1990; McGregor, 1991:270). Although only a minor cause of deforestation, traditional harvesting of wild honey from tree hives often resulted in

²⁷⁵ McGregor (1991:266-68) lists five different insect species found in Shurugwi CA that have an urban market. Three of these species are also sold in local markets.

²⁷⁶ It was not clear from the literature who exactly was involved in the marketing of termites and whether or not it tended to be men or women. Fortmann and Nabane (1992:33) point out that women are largely responsible for regularly gathering insects but whether or not that means women participate significantly in the commercial exploitation of edible insects is unclear.

trees being damaged or destroyed (Campbell and Grundy, 1991:45). Traditional hive-making using ringed bark from trees has been banned since colonial times for conservation reasons²⁷⁷ (McGregor, 1991:270). However, whether the ban was applied in all CAs or is still enforced is unclear as I did see a number of these hives in the study area.

Only one household in the questionnaire survey reported selling honey, earning Z\$90 during the year through local sales. On one occasion the research team was approached by a man selling freshly gathered wild honey for Z\$1.25 for a small cup. The harvester clearly had his eye on the hive for sometime, perhaps deciding that our presence provided the opportunity for a sale. Among the majority of households that consume honey, some purchase it on occasion; 25 of the respondent households, just under six percent, reported buying honey. Given the discrepancy in location and quantity, it seems likely that, as McGregor (1991:271) speculates, some purchased honey originates from outside the CAs.

Medicinal Products

Indigenous woodlands are the major source of herbal medicines in Zimbabwe; approximately 500 species, 10% of the country's flora, are used by traditional healers (Gelfand *et al.*, 1985 in Campbell *et al.*, 1991b:26). The roots and bark of native trees and shrubs make up a significant proportion of total medicinal plants. Whitlow

²⁷⁷ The law banning traditional hives failed to meet its stated purpose when rural people turned instead to the harvest of wild honey, damaging or killing the host tree in the process.

(1979:20) notes that trees or shrubs account for 21 of the 24 most commonly listed²⁷⁸ medicinal woodland plants in five CAs. Another study (Chidari *et al.*, 1992:103) reports women in one rural area could name 49 trees and shrubs for medicinal use with nearly 40 of those being indigenous species²⁷⁹ (Fortmann and Nabane, 1992:39)

Traditional collection of medicinal herbs aimed to ensure the sustainability of the resource. Unfortunately increasing scarcity of medicinal herbs, whether due to deforestation or over-harvesting, has led to the abandonment in many areas of sustainable harvesting methods especially for the more rare and/or lucrative species. Urban traditional herbalists now frequently purchase their supplies from wholesale collectors who often move far afield in search of prized species²⁸⁰ (Mavi, pers. comm. in Campbell and Grundy, 1991:47; Gelfand *et al.*, 1985 in Campbell *et al.*, 1991b:26)

Although there clearly remains a vigorous trade in herbal medicines, among some people there is a stigma²⁸¹ attached to using traditional medicines which are considered 'not modern' (Chidari *et al.*, 1992:10). One *Nganga*, traditional healer, with whom I spoke suggested that the use of medicinal herbs had declined over the past two

²⁷⁸ Whitlow (1979:21) compiled a list of approximately one hundred medicinal species of plants from his study area of five CAs.

²⁷⁹ Exotic tree species are also relied upon for some herbal remedies, with a recipe for cough medicine made from guava, lemon and gum being posted in many government health clinics. Chidari *et al.* (1992:103) speculate that this tree-based medicine was so commonly mentioned in interviews because it had an air of legitimacy compared to medicines based on indigenous species.

²⁸⁰ Cunningham (1990 in Campbell and Bringham, 1993:13) reports some medicinal plants are transported more than 200 kilometres. One traditional healer interviewed in Mangwende CA stated that he had not seen any sign of people in his area gathering herbs for the purpose of re-selling.

decades largely due to the preference of younger people for western medicine.

Religion also appears to be a factor in people's attitudes towards herbal medicines:

Whitlow (1979:6), in one of his study sites, found a number of households did not use medicinal plants because of their religious beliefs. I found similar attitudes in a group of farmers in northern Mutoko who claimed no herbal medicines were sold in their area giving the reason, "we are Christians"

The attitudes discussed above, combined with a reluctance on the part of some practitioners "to reveal the secrets of their lucrative trade" (Chidari *et al*, 1992:10), could deter open discussions of the use of and trade in herbal medicines. Whether it is an accurate reflection or not of the extent of the trade in herbal medicines, only two households acknowledged selling these products. Nearly 11% of the sample, 48 households, stated they had purchased these products in the past year. Only one of the two households involved in the sale of herbal medicines provided specific information on selling practices. Their involvement in the trade does appear fairly 'lucrative': they sold 130 teaspoons of herbs last year at Z\$0.75 each for a total of Z\$97.50. Apart from sales to local customers, sales were also made to middlemen from the local area and from outside the community who purchased herbal medicines for re-selling, apparently in Harare. The sales pattern demonstrated a peak during the main agricultural season, perhaps due to a connection between illness and the rains, or due to the appearance of certain herbs during that time.

7.6.1 Non-wood Forest Products in the Rural Economy

While the non-wood forest products discussed above have entered to a limited degree into the rural cash economy, their main importance within rural areas is clearly in the area of subsistence exploitation. Relative to the number of households purchasing products fashioned from wood (section 7.2), those purchasing non-wood products number far less at 81 households, or approximately 18% of all respondents. Furthermore, most of those households - roughly 86% - purchased only one of the four goods listed.

A further issue relevant to the discussion of non-wood forest products is the apparent diversity of these resources, not only between CAs, but also between different tenure regimes and over time. Zimbabwe's CAs are located across a range of ecological niches resulting in a range of wild resources between them. Wilson (in McGregor, 1991: 262) for example, notes that certain CA environments contain a far more limited range of exploited wild food species - 'ethnospecies' - such as mushrooms, than are found in other environments. As already mentioned, large-scale commercial farms and resettlement areas can contain significant resources of non-wood products relative to surrounding CAs depending on a host of factors, among them the levels of deforestation in each of the tenurial regimes and ease of access and exchange of resources between areas. Changing abundance of these products over time adds further complexity to understanding the exploitation of non-wood products.

Deforestation and drought appear to be the most likely factors in annual variation in supply, but over-harvesting and normal fluctuations in the appearance of insect foods also may play a role. Further research is required to gain an understanding of who is being affected by changing access to non-wood forest products²⁸¹ in terms of factors including gender, age and wealth status. Questions also remain as to the origins of these products: to what extent are needs being met within the CAs themselves?

7. 7 SUMMARY

While the number of rural households involved in the marketing of products derived directly from tree and forest products, *ie.* not indirectly as is the case with products relying on inputs of wood energy, is small, their role in the rural economy is not. Large numbers of CA households purchase craft products especially; in fact, more than three times as many households purchase crafts as purchase building poles, the next most commonly bought tree or forest product in the study area. Many of the tree and forest products, such as fuelwood, which have great importance within the subsistence sector, have almost no presence in the rural market economy.

The relatively limited role of fuelwood and building poles in rural markets contradicts the assumptions of the RAP. In fact, in its Project Completion Report the World Bank (1991:13) points out that

²⁸¹ Fortmann and Nabane (1992) have undertaken research on this topic

the lack of clear markets for fuelwood and construction poles has suggested that the returns estimated during appraisal were unrealistically high....financial returns to these investments are consistently negative.

Given that planting of trees for fuelwood is almost unheard of unless aimed at the market (FAO, 1985:17), and that the market for fuelwood from planted trees in Zimbabwe is unlikely to provide positive returns, the lack of involvement in the fuelwood market by small-scale farmers in the survey area was to be expected. On the other hand, the lumping together of fuelwood and poles as having similar positions in the market may also be incorrect. There are a significant number of households purchasing poles although the data from selling households suggest the prices are lower than anticipated by both farmers and the FC.

The craft sector which accounts for the largest share of marketed goods among tree and forest derived products has generally received little attention (Deweese, 1992:37). It is clear from the research conducted for this thesis that contrary to the perception that NAEs are exclusively localised, limited and somewhat passive occupations, there is a sizeable segment within the artisan community that displays considerable enterprise and ingenuity in their activities (Mhone, 1991:48). There is significant variation in terms of the level of participation, the approach to marketing and other factors within the artisan community but for some these activities clearly provide an important source of income. Many of the craft activities described are part-time pursuits and as Mhone (1991:11) suggests, their contribution to total employment is no doubt quite small. However, when levels of participation in these activities are

projected across the country, the aggregate number of individuals and households relying to some degree on craft incomes is quite substantial (Deweese, 1992:39). Furthermore, given the relative ease with which many FBEs can be entered into and that most are begun with household resources only (Moyo and Sunga, 1991:11), these activities can make an important contribution to income. Craftwork also can assist households in diversifying their income, an important factor in increasing overall household security in terms of income and access to food²⁸² (Jackson and Collier, 1988:38, Deweese, 1992:37). Within the current economic climate found in Zimbabwe, informal, non-agricultural activities such as craftwork provide a number of benefits to rural households operating under extremely constrained conditions.

²⁸² In fact, as Jackson and Collier (1988:1-2) state, "off-farm incomes are not supplementary to rural agricultural incomes, but directly influence agricultural production", a point clearly demonstrated in the research data by the widespread use of remittances to purchase farm inputs

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

8.1 SUMMARY

This thesis had two main objectives. The first objective was to explore in depth a little researched area, the marketing of tree products by small-scale farmers, within the specific case of Zimbabwe's Communal Areas. Second, the thesis set out to examine how forestry development programmes and the management of trees in the Communal Areas has been influenced by external perceptions of both the needs of rural people with regard to trees and the manner in which rural people exploit the forest base. The two areas are in fact linked; the widespread marketing of tree products points to their importance in the rural economy yet policy makers have generally failed to incorporate these areas into the planning process. Where the economic aspects of growing trees have not been ignored in forestry programmes, they have generally been misunderstood. It has been argued that current approaches to promoting tree growing especially are at odds with the needs and aspirations of rural people.

A few central themes run through the course of the study. One of them is that policy and programming affecting the area of tree growing and tree management has, both during the colonial period and in Independent Zimbabwe, been based on an inadequate

understanding of the reality on the ground. This failure of understanding, explored at length in chapters three and four, has both ideological origins such as the perceived superiority of first, white and later, western knowledge and the influence of what have been termed 'international fashions' (FAO, 1985:90) such as the widespread perception of a 'woodfuel crisis' sweeping the countries of the South. In Zimbabwe, the needs of rural people were perceived by outsiders to be fuelwood and construction poles. The approach to meeting those needs, the eucalyptus woodlot model, has essentially remained the technical package of choice in forestry extension since the 1930s and retains an important place in the most recent programmes (Scoones and Matose, 1992:11). The persistence of this forestry extension model, despite extensive criticism, raises questions as to the continuing justification for such an approach, McGregor (1991:321-22) argues that gum woodlots are firmly tied to an ideology of modernisation which has effectively excluded local people's livelihood concerns from becoming part of the planning process.

In sharp contrast to many of the perceptions informing policy makers and planners, chief among them that tree planting is not a well-established activity, chapter five demonstrated that people in the rural areas do plant trees on a wide basis.

Furthermore, most of this planting is done with little or no institutional support. One of the contentions of this thesis is that the form this planting takes, mainly exotic fruit trees that are 'multi-purpose' in the sense of providing food for the household as well as income, provides the best starting point for programmes aimed at supporting the

growth of tree-based activities as a contribution to the development of the rural areas. Although it is not the chief motivation for all farmers that plant trees, the income potential from tree products is argued to be a contributing factor to tree growing in the Communal Areas, a factor that has been ignored or misunderstood within many forestry programmes of which Zimbabwe's Rural Afforestation Programme is no exception.

Chapter six examines in detail the marketing of fruit from the Communal Areas. Fruit marketing is clearly a widespread and well-established activity among rural area households and, although the income amounts earned are highly variable, provides an important source of cash. In fact, fruit provides higher cash returns to more households than any other tree product marketed in Zimbabwe's CAs. The structure of the market is quite complex, although certain channels, such as middlemen buying fruit at the farmgate, tend to dominate. Although most CA farmers are justifiably critical of middlemen practices, many farmers could in fact be worse off without the marketing services provided by these intermediaries. Obstacles faced by farmers in gaining the best returns from this activity tend to be interrelated. For example, obtaining reliable transport to market for their produce is a significant problem for farmers; middlemen who come to purchase fruit with a vehicle therefore have considerable power over farmers who more often than not end up as price-takers rather than price-setters. Farmers appear to use the main market at Harare for certain crops at certain points during the season as a way of improving on the returns that can be

gained by selling to consumers within the CA or to middlemen. Attempts to provide marketing services for farmers have had a positive effect on farmers' abilities to market their fruit although a number of problems in terms of reliability and equity of access to the programme remain.

A detailed exploration of the marketing of wood-based and forest products was undertaken in chapter six. In terms of the market, local or otherwise, for these products, wood-based crafts are dominant. While relatively few people are engaged in producing these products, the number of households purchasing these goods in the rural areas is large. Craft activities are not however limited to selling in a local market, many of the artisans interviewed reported they sold their goods at some distance from the point of production, some of the goods even being sold by middlemen to buyers in adjacent countries. The market for products that have been the focus of Zimbabwe's Rural Afforestation Programme, fuelwood and construction poles, is, in contrast to the anticipation of the planners involved, limited. In fact, although fuelwood is key to the subsistence needs of rural households, its direct role in the cash economy is minimal. Indirectly, that is as a source of energy, fuelwood is important to a number of income generating activities in the rural areas, among them beer brewing and brickmaking.

Finally, a brief note on the methodology used in the study. The research was conducted over three Communal Areas located east of Zimbabwe's capital of Harare.

The study employed two different approaches to examine the role of trees in the rural cash economy: a questionnaire survey and a range of rapid rural appraisal (RRA) techniques. The two methods selected were seen as complementary in meeting the goal of the research and combining the two methods provided more information than either could have on their own. The questionnaire survey allowed for the establishment of an economic baseline and profile on the amount, flow and pricing of tree products over the study area. Employing RRA techniques provided valuable insights into how local people perceive their livelihood system and the role of trees within them, as well as allowing a greater depth and complexity of information to emerge than is likely through a questionnaire.

8.2 CONCLUSIONS: BUILDING ON FARMER PRACTICES

The thesis has demonstrated that rural people are already highly involved in growing and managing trees; furthermore, their knowledge and practices surrounding these activities often demonstrate a high degree of sophistication and a clear ability to incorporate new information and practices within their own system (Farrington and Martin, 1988:1). At the same time, as Dewees (1992:47) argues

there is a huge divergence between what the public sector and NGOs have been able to provide and what households in Communal Areas are evidently interested in with regard to trees and woodlands - in terms of real physical inputs, extension 'messages' and approaches, institutional structures and management approaches

It is clear that there is a need for the discrepancy between farmers' wishes and the

approach of external agencies to be reconciled. Farmers' priorities in tree growing, including the provision of income, have not been adequately integrated; in fact, the complexity and diversity of rural people's tree growing and management activities are not compatible with the current reliance in forestry extension on standardised technical packages. A key starting point must be with policy makers themselves to acknowledge that local people may be best able to judge what their needs are and how best these needs might be met (Hancock, 1991:95).

The dominant tree growing practices of CA residents, largely undertaken with minimal or no support from external organizations, appear to provide a fertile base for tree planting programmes that could respond to the varied needs of rural people. A new approach to forestry extension is required that moves away from the technical 'package' approach to one where extensionists act as consultants and catalysts in a system driven by the demands and needs of rural people.

In the end, a shift in the standard approach to extension of the kind described above involves a significant shift in the attitudes of planners regarding their role in the development process (Clarke, 1991:10; Chambers, 1991:9). There is also a need by policy makers to acknowledge the ability of local people to manage the resources of the indigenous woodland adequately. A change in the role of the state - from dictating policy to supporting locally-generated management systems and providing technical advice in response to community requests - would be a productive starting

point (Bruce, 1990:19-20, Nhira and Fortmann, 1991:58). An essential objective should be to help create effective and empowered local institutions able to devise and enforce rules surrounding resource use. However, the aim of strengthening local institutions should not simply be to create a more effective organisation for the diffusion of centrally created technical plans, but to create an environment for the evolution from within communities of multiple approaches that accurately reflect the ecological and social diversity of Zimbabwe's Communal Areas (Elliott, 1990:127, Scoones and Matose, 1992:56,61,64).

As Scoones and Matose (*ibid*:69) point out, questions of control over the use of natural resources "have little consequence unless linked to a discussion of investment strategy for sustaining production from the land". Management of resources must therefore be tied to a discussion of investment in rural development and the options for people to generate income from these resources (*ibid*). Craftwork activities and other forest-based enterprises are likely to see an increase in the number of participants given the current economic climate facing Zimbabwe. Current state management of forest resources is unable to respond to the reality of local use of these resources. By devolving control over forest resources to the local level it appears the opportunity exists for improved management with human needs at the centre of the debate, therefore, resources will be protected for people rather than from them as is the current rationale for resource management.

The need for a shift to more locally controlled programmes driven by local needs has been widely acknowledged in other studies although the degree to which it has been implemented is generally quite limited (Clarke, 1991:8). However, another factor of considerable importance which has tended to be ignored in forestry programmes is the demand side of the process, that is the disposal of the extra products generated. Given local people's interest in the income produced through the sale of tree products, it seems likely that locally driven programmes would focus more attention on the demand side of growing and managing trees than has previously been the case with the emphasis on supplying inputs for planting. Rural people often take up tree growing with the marketplace in mind; until this consideration is more centrally acknowledged in forestry planning, programmes will continue to have limited relevance to the needs of rural people. Programme support for these activities could bear significant dividends not only in increasing tree planting but more importantly in strengthening rural livelihoods and the management of natural resources.

A. the same time, consideration can be given to possible solutions to the obstacles faced by farmers in gaining the best returns from tree growing and management activities. Many of the problems are interrelated; for example, obtaining reliable transport to market for their produce is a significant problem for farmers leaving middlemen with considerable power over farmers who more often than not end up as price-takers rather than price-setters. Organised marketing systems such as the programme underway in parts of the study area which aim to provide transportation

and other marketing services to farmers can clearly have a positive effect on farmers' abilities to market their fruit. These programmes can help provide choices for farmers in terms of access to markets as well as provide information on outlets and pricing which have previously originated mainly with middlemen. The programme initiated in Mutoko has also sought to approach tree growing as part of a system, that is considering the process from production of the goods on-farm through to their disposal in the marketplace. Problems have arisen, some of which might be argued to originate with a programme focus that is still somewhat top-down, but there are indications that farmer concerns are being responded to. The establishment of collection points where farmers can bring their produce should help address current concerns over the reliability of pick-up which have led to farmers resorting to middlemen to market their goods.

Some questions still remain over equity of access to the programme. For example, households unable to acquire the necessary containers for transporting fruit within the programme are forced to sell to middlemen. Also, because of the current need for farmers to accompany their produce to market, women-headed households especially may lack the labour resources that would allow for a household member to be absent for one to two days. Allowing producers essentially to relinquish marketing responsibilities at the collection points located within the rural areas would help address these problems as well as the difficulties and costs most farmers face in accompanying their fruit to Harare.

If we as outsiders are to respond more effectively to the needs of CA residents surrounding the growing of trees, taking their practices and priorities as our starting point is an essential first step. It is also important that programmes do not stop at the supply of improved inputs and information on tree culture. Instead, there is a need to accompany the 'development' of the tree production system with the development of the system for disposing of these goods in a way which provides the best returns to farmers (Christanty *et al.*, 1986:156).

While forestry extension and subsidies for tree planting can positively influence farmers to grow trees - as has been seen to a certain degree in Zimbabwe - the presence of a viable market may be a more crucial factor in determining tree growing activities (Godoy, 1992:719; Foley and Barnard, 1984:87). Where tree planting is financially viable, as appears to be the case for fruit tree growing in at least some of Zimbabwe's CAs, planting will tend to be self-sustaining (FAO, 1985:86). Only time will tell if planned for reductions in subsidies for eucalyptus will have a negative impact on the planting of gums and, by removing the distortions created which favour these trees, help demonstrate to external organizations where rural people's priorities for tree planting lie. One can only speculate on the impact both in tree growing and in improvements in rural livelihoods that seedling subsidies might have had in Zimbabwe over the past ten years if the focus of attention had been on fruit trees.

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ANNEX 1

SURVEY OF THE MARKETING OF TREE PRODUCTS BY FARMERS IN
MANGWENDE, UZUMBA AND MUTOKO COMMUNAL AREAS

DATE: / /92 SITE # _____ ENUMERATOR # _____

NOTE: ALL RESPONSES TO THIS QUESTIONNAIRE ARE STRICTLY CONFIDENTIAL**PART A: RESPONDENT INFORMATION**

- 1 Sex of the respondent? male (0) female (1) _____
- 2 Sex of the household head (PROBE)? male (0) female (1) _____
- 3 Age of the respondent? _____
ESTIMATE AGE:	18 - 29 (1)	50 - 59 (4)
	30 - 39 (2)	60 + (5)
	40 - 49 (3)	

PART B: HOUSEHOLD SIZE AND LABOUR

- 4 Including yourself what is the total number of people who normally live and eat (reside) in this household? _____
- 5 What are their sexes and ages? (Fill in table below) (ENUMERATORS: check total against numbers above!!)

TABLE 1: HOUSEHOLD COMPOSITION		
Household Member (ages)	No. of MALES	No. of FEMALES
Under 7		
School Children (7-17)		
Adults (18-59)		
Older People (60 +)		

- 6 Did your household hold a *nhimbe* last year? no (0) yes (1) _____
- IF YES, did you make *mukumbi* or other fruit wine for the *nhimbe*? no (0) yes (1) _____
- 7 Did your household employ any casual labour during busy times last year, such as for weeding or harvesting? no (0) yes (1) _____

IF YES, how many people did you hire?

PART C: LAND ALLOCATION

- 8 For how long has your household lived at this place?
less than 5 years (1)	11-20 years (3)
5-10 years (2)	more than 20 years (4)
- 9 How many acres, in total, has your household been allocated?
- 10 How many acres were left fallow in the 1990-91 season?

PART D: CROPS AND FARMING PRACTICES

- 11 What crops did you grow last harvest year (1990-1991 season)?
(Mark no (0) or yes (1) for various crops in **column I, Table 2**)
- 12 For the crops grown, what was the total number of bags/bales/
bundles of each crop you sold? (Fill in **column II**)
- 13 Did your household buy any chemicals to fertilize your crops or
control insect pests during the last year? (**MARK** no (0) or
yes (1) for various crops **IN COLUMN III**)

TABLE 2	I Grow	II Sell #	III Inputs
Crop	no (0) yes (1)	bags/bales/ bundles	no (0) yes (1)
Maize (bags)			
Cotton (bales)			
Groundnuts/bags or _____)			
Sunflower (bags)			
Sorghum/Munga/Rapoko (bags)			
Vegetables (bundles)			
Other _____			

- 14 Did you have any problems in selling these crops? no (0) yes (1)

IF YES, what were your problems starting with the worst?

Worst problem 1 _____

2 _____

3 _____

- 15 How many livestock (including cattle, rabbits, chickens etc) does your household own? _____

IF NONE, go to question 18

IF SOME, how many do you have? (place totals in column I, Table 3)

- 16 Did you sell any livestock last year? no (0) yes (1) _____

IF YES, how many did you sell of each kind? (Fill in column II)

TABLE 3 LIVESTOCK	I # Owned	II # Sales
Cattle		
Goats/sheep		
Poultry		
Small Mammals i.e. Rabbits		
Other _____		

- 17 Do you hire out any of your draught cattle? no (0) yes (1) _____

- 18 Do you ever borrow money to grow/transport/market your crops?
no (0) yes (1) _____

IF YES, (specify) _____

- 19 How many of each of the following does your household currently own

- a) cars? _____
- b) bicycles? _____
- c) Scotch carts? _____
- d) wheelbarrows? _____
- e) sledges? _____

PART E: EMPLOYMENT AND REMITTANCES

- 20 Are any household members in paid employment including casual labour?
no (0) yes (1) _____

IF NO, go to question 21

IF YES,

- a) How many? _____
- b) Do they sometimes help the family with such things as school _____

fees or money for fertilizer, or provide other gifts?

no (0) yes (1)

(elaborate) _____

PART F: NON-FARM INCOME

- 21 Do members of your household do things other than farming or working for others to earn extra money? no (0) yes (1)

IF YES:

- a) Do they do brickmaking/building? no (0) yes (1)
- b) Do they do cooking/beer-making? no (0) yes (1)
- c) Other activity (explain) _____

PART G: TRAINING AND EXTENSION

- 22 Is anyone in this household a

- a) Master Farmer? no (0) yes (1)
- b) member of a farmers group, marketing cooperative
ARIDA etc no (0) yes (1)

(explain)? _____

- 23 Have you received advice on growing trees? no (0) yes (1)

IF YES. what and from whom (specify) _____

- 24 Has anyone in your household planted trees in the last 5 years? no (0) yes (1)

IF YES.

- a) What type? (specify) _____
- b) How many of those trees planted in the last 5 years are still surviving? (if many, estimate) _____

- 25 Do you or does someone in your household

- a) water tree seedlings? no (0) yes (1)
- b) fertilize/apply manure to trees? no (0) yes (1)
- c) protect trees from grazing? no (0) yes (1)

PART H: MARKETING

- 26 Have you received advice on marketing products from trees such as
fruits or construction poles? no (0) yes (1) _____

IF YES, specify what information, from whom _____

**QUESTIONS 27 - 33 ONLY TO BE ANSWERED IF ANY PRODUCTS ARE SOLD BY
HOUSEHOLDS, I.E. ONES IN THE 'S' COLUMN ON THE SEASONAL TABLE**

- 27 How do you decide what price to ask for your fruit and other tree
products? (Multiple choices acceptable **BUT DO NOT READ OUT LIST**) _____

observe in market? (1)
from other farmers? (2)
from buyers? (3)
from extension agents? (4)
other? (5)(specify) _____

- 28 When negotiating over the sale price with buyers, do you _____
almost always get the price you set? (1)
negotiate a mutually acceptable price with the buyer(s)? (2)
almost always get the price set by the buyer(s)? (3)

- 29 Do you receive immediate payment for your fruit/other tree
products _____
almost always? (1)
about half of the time? (2)
almost never? (3)

- 30 Do you ever make arrangements with buyers to purchase your fruits
or other tree products prior to harvest? no (0) yes (1) _____

- 31 Do you ever grade your fruit prior to selling them? no (0) yes (1) _____

- 32 Do you and the prospective buyer ever not agree _____

- a) on the grade of the fruit you are selling? no (0) yes (1) _____
b) on the weight/measurement of the fruit you are selling? no (0) yes (1) _____

- 33 Do you process any of your fruit products prior to selling them? no (0) yes (1) _____

IF YES, do you

dry them or salt them? (1)
make juice or wine/beer from fruits? (2)
make jam? (3)
other? (4)(specify) _____

	No (0) Yes (1)			Most common units	July		August		Sept.		October		November		December		January		February		March		April		May		June		
	B	B/S	S		#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	#	\$/u	
Mangoes																													
Guavas																													
Avocadoes																													
Citrus Fruit																													
Papaws																													
Bananas																													
Other Exotic																													
Indigenous Fruit/ prod.																													
W'iding Poles																													
Fuelwood																													
Mushrooms																													
Honey																													
Caterp/term																													
----- IN ANY PRODUCT																													
Bark Rope																													
Stools/Furn.																													
Mortars																													
Kitchen Uten																													
Yokes																													
Tool Handles																													
Tree S'dling																													
Medicine: Forest/trees																													

B. Do you buy these products for household use? UNITS: (1) each (2) 2.5 litre tin (3) head load (10) Scotchdard
 B/S. Do you buy & then resell (trade) these products? (1) bottle/cup (2) wooden box (8) sack (11) cord
 S. Do you sell products you produce/collect yourself? (1) box (6) 20 litre tin (9) wheelbarrow

ANNEX 2

LIST OF ABBREVIATIONS

AGRITEX	Department of Agricultural, Technical and Extension Services
CAs	Communal Areas
CDR	Complex, Diverse and Risk-prone agriculture
FBE	Forest-Based Enterprise
FC	Forestry Commission of Zimbabwe
FSR	Farming Systems Research
MEFVP	Mashonaland East Fruit and Vegetable Programme
NAE	Non-Agricultural Enterprise
PM	Producers' Market (Mbare Musika)
RAP	Rural Afforestation Project
RPF	Resource-Poor Farmer
RRA	Rapid Rural Appraisal
TOT	Transfer of Technology
VIDCOs	Village Development Committees

END

0 9 - 1 1 - 9 4

FIN