

**THE USE OF INDIGENOUS PLANTS AS FOOD BY A RURAL COMMUNITY
IN THE EASTERN CAPE: AN EDUCATIONAL EXPLORATION**

A thesis submitted in partial fulfilment
Of the requirements for the degree of
MASTER OF EDUCATION
of
RHODES UNIVERISTY

by
SOUL SHAVA

January 2000

ABSTRACT

Looking at the use of plants as food reflects how humankind has fashioned nature. There has been a significant change in production patterns from hunter-gathering through subsistence agriculture to technologically advanced commercial agriculture with a subsequent reduction in the diversity of plants used as food. A parallel trend in consumption patterns has occurred, from home-based food processing for subsistence through small-scale production to large-scale industrial processing and the commodification of food. The overall result of such trends is a narrowing of the food resource base and an increasing reliance on processed foods at the expense of traditional diets, accompanied by increasing diet-related health risks.

This research is an ethnographic case study on the use of indigenous food plants by the community of Tuku A village in the Eastern Cape using interviews and observations as the main data collecting strategies. A nutritional analysis of some wild food plants was also carried out.

An inventory of more than 70 food plant species was compiled, with the knowledge of such plants found among both the elderly and the youth. The incorporation of this knowledge into education systems is recommended.

Of the wild food plants documented, some were non-indigenous indicating the dynamic nature of indigenous knowledge. Some wild spinach were left to grow amongst cultivated food plants, hinting at some form of 'domestication' in process. This observation together with the observation that wild fruit trees were selectively conserved highlights the possibility of the continued use of wild food contributing to conservation of botanical diversity.

Community use of indigenous food was found to be diminishing. Stigmatisation of indigenous food plants, urbanisation, formal education, changes in lifestyle, and media were some of the factors possibly influencing this dietary shift. The community made links between diet and health, which correspond to modern scientific knowledge, with modern diet being lamented for ill health. The nutritional analysis revealed that wild food plants do contain essential dietary nutrients, an area recommended for further research.

TABLE OF CONTENTS

Title Page	
Abstract	i
Table of contents	ii
Acknowledgements	vi
SECTION 1	1
Introductory Section	
CHAPTER 1: INTRODUCTION	2
1.1. Edible Wild Plants	2
1.2 The Study Area	4
1.3 Rationale	4
1.4 Aims of the study	5
1.5 Clarification of Key Concepts	7
1.6 Outline of Study	8
CHAPTER 2: RESEARCH METHODS	8
2.1 Research Design	8
2.2. Participants	9
2.2.1 Sampling Technique	9
2.2.2 The research participants	9
2.3 Data Collection	10
2.3.1. Participant observation	10
2.3.2 Interviews	11
2.3.2.1 Unstructured interviews	11
2.3.2.3 Focus group interviews	12

2.4 Collection Trips	12
2.5. Nutritional Analysis	12
2.6. Data Analysis	13
2.7 Ethical considerations	13
2.8 Evaluation of Methodology	13
2.8.1 Constraints	13
2.8.1.1 Time	13
2.8.1.2 Language	14
2.8.1.3 Participants	14
2.8.2 Changes in methodology	15
2.8.2.1 The Sample	15
2.8.2.2 Focus Group Interviews	15
CHAPTER 3: LITERATURE REVIEW	16
3.1 The Role of Indigenous Plant Biodiversity as a Food Resource	16
3.2 Impact of Agriculture on Plant and Food Diversity	17
3.3 Indigenous People and Indigenous Plant-Use Knowledge	19
3.4 Diet and Health	20
3.5 Conclusion	21
SECTION 2	22
Research Findings	
CHAPTER 4: A WEALTH OF KNOWLEDGE ON INDIGENOUS FOOD PLANTS	23
4.1 Knowledge on Indigenous Food Plants Possessed by the Elderly	23
4.2 The youth and Indigenous Food Plant Knowledge: Evidence of Knowledge Transfer	23
4.3 Discussion and Interpretation	24

CHAPTER 5: CHANGING WITH THE TIMES- WILD FOOD PLANTS AND THE DIET	24
5.1 The Traditional Role of wild Food Plants in the Diet of the Community	27
5.2 Evidence of Change in the Role of Wild Food Plants in the Diet	27
5.3 Factors Influencing Change in the role of Wild Food Plants in the Diet	28
5.4 Availability of wild Food Plants	30
5.5 Discussion and Interpretation	31
CHAPTER 6: THEY ARE SO WEEK THEY KEEL OVER WHEN YOU SHOVE THEM-LINKS BETWEEN DIET AND HEALTH	36
6.1 Diet and Health	36
6.2 Nutritional Composition of Some Wild Food Plants	37
6.3 Discussion and interpretation	39
SECTION 3	44
Concluding discussion	
CHAPTER 7:CONCLUDING DISCUSSION	45
7.1The Place of Indigenous Education	45
7.2 The Dynamic Nature of indigenous Knowledge	46
7.3 The Role of Wild Food Plants	47
7.4 Indigenous Food Plants and Plant Biodiversity Conservation	48
7.5 Indigenous Food as Alternative sources of nutrition	49
7.6 Conclusion	49
REFERENCES	50
PERSONAL COMMUNICATIONS	56
LIST OF APPENDICES	
APPENDIX 1: AN INVENTORY OF WILD FOOD PLNTS USED IN TUKU VILLAGE, PEDDIE	57

APPENDIX 2: SUMMARIES OF INTERVIEW TRANSLATIONS	62
APPENDIX 3: NUTRITIONAL COMPOSITION OF SOME WILD FOOD PLANTS	102
Table I: Ascorbic Acid (Vitamin C) Content and Effects of Different Cooking Methods on Ascorbic Acid Retention	102
Table II: Concentration of Iron, Zinc, Sugar, Protein and Vitamin D in Some Wild Food Plants	103

ACKNOWLEDGEMENTS

My sincere thanks to WWF for the Prince Bernhard Scholarship award which has made my studies possible. Many thanks to my friends and work colleagues back home for their support during the course of this study. To my family back home, my deep felt thanks for all the encouragement and support. To my brother Shelton, thanks for the continued contact and keeping the wheels going, I do not know if I could have made it without your help. To Kathy Stiles thanks for all the support and relevant books.

To my course colleagues in Grahamstown, Vivian Molose, Sidwell Dingela, Ingrid Schudel and Nicola Jenkins, you really made a difference and filled in the void of being way from home. Thanks for all the companionship, support and sharing of the burden, the ups and downs, the laughter and the agony.

My sincere gratitude to the community of Tuku village for their all embracing welcome which made it easy to do my research. I owe all this welcome to Sidwell Dingela, to whom I am greatly indebted, who took me under his wing and incorporated me into his family. My heartfelt thanks to his grandmother, Mrs Madlingozi (NoDuduzela) who took care of me during my stay in the village. To her, Tamara, Yoliswa, Moyopo and Mkuseli, who became my family here in South Africa, I say “Enkosi kakhulu, ningadinwa nangomso!” To Yoliswa and Moyopo “Ningalibali ibilabila nohalakajanae”.

Viv, I cannot thank you enough for lending us your ‘baby’ to make the long uphill trips to Peddie, not forgetting your being there whenever I needed a friend.

Thanks to the Mazda Wildlife Fund –SA for the Rhodes University Environmental Education unit vehicle which we used for the field trips.

To Rob O’Donoghue, many thanks for those long intellectual e-mail conversations. They were really worth the while.

To Mike Powell, many thanks for giving me access to your computer and printer and working space at the crucial moment when I needed it most. I greatly appreciate it.

My sincere gratitude to Tony Dold the Selmar Schonland Herbarium of the Albany Museum, Grahamstown for plant identifications and to Andrew Ainsley for introducing me to the Herbarium staff.

Nutritional analysis of my samples was done by Nomfusi Spayile and Lindiwe Gcabashe through Dr Stephanie Burton of the Rhodes University Biochemistry Unit. My sincere thanks for having been able to accommodate me at short notice and for working with me in this untrodden ground.

To Boyce (the Management) and Portia Papu and the kids Themba and Khanya, thanks for providing me with the break away from the stress whenever I felt I needed that welcoming love and kindness which reminded me of home. It was always hard to return back to the realities of student life.

My sincere thanks to my supervisor Eureta Janse van Rensburg who came up with interesting insights into this research and gave guidance and consistent encouragement throughout the preparation of this thesis. “Enkosi Kakhulu!”

To Pat Irwin I am sincerely grateful for all the assistance and advice which enabled this project to materialise.

SECTION 1

This is the introductory section to the study. Chapter 1 introduces the topic of indigenous food plants and their role in food provision in traditional African communities. The description of the study area, rationale of the study and the research question are outlined in this chapter. The research process and methodology outlined in Chapter 2. Chapter 3 gives an overview of existing literature relating to the study.

CHAPTER 1: INTRODUCTION

This chapter gives an orientation to the study, i.e. the focus on indigenous food plants and their role in the diet.

1.1 Edible Wild Plants and the (African) Diet

The sustenance of many indigenous societies over many generations has been as a result of their reliance on a broad food base to supply their nutritional requirements. Though the food base included animals and other food sources, edible wild plants formed the major food source. I will give examples of this reliance on wild food plants in the southern African region.

Thayer Scudder (1962) in his study of the Gwembe Tonga in the Zambezi Valley noted such a reliance on wild food plants despite the fact that the community members spoke highly of their hunting prowess. I will quote the following statement from him:

“While agricultural relishes (especially cucurbits) may dominate during certain months of the year, frequent checks on what Valley families were eating in the River regions indicated that the gathering activities supplied the main source of relish during 1956-7. Indeed for three Mazulu Village households for which we have most data ... gathering supplied relish on more days than did agriculture, animal husbandry, fishing and hunting combined” (1962:201).

In many traditional African cultures a main meal comprises of a starch staple which is accompanied by supplement (the relish) of vegetables, meat or a combination of both which provides the other nutritional elements as well as flavour to the meals. The relish is therefore an important component of the diet.

Similar reliance on wild food plants was noted by Lee (1979) in his study of the !Kung San in Botswana:

“The security of the !Kung life in the Dobe area is attributable in a large part to the fact that vegetable foods and not meat is the primary component of their diet. Plant foods are abundant, locally available,

and predictable; game animals, by contrast are scarce and unpredictable, and though the !Kung hold meat in high esteem, they never depend on it for their basic subsistence” (1979:158).

Other studies in southern Africa include that by Rodin (1985) who documented the use of wild plants by the Kwanyana Ovambos, and by Reynolds (1989) on the Tonga tribes of the Zambezi valley.

From these accounts it is evident that the broad base of wild food plants was a reliable food source for these communities. This was more so during times of drought and famine when wild food plants provided a major nutritional supply (Scudder 1962, Lee 1979, Rodin 1985 and Reynolds 1989). Unfortunately however, most local communities have come to regard their traditional food resource base as primitive and inferior (Sibanda 1999) and to rely on an unstable modern agriculture system with its narrow food base. Problems of drought are now more prevalent throughout the world. These droughts play havoc with food availability, resulting in food shortages due to the reliance on cultivated crops that are poorly adapted to local conditions, with the major impact being in developing countries (Abraham 1991). Kocchar and Singh (1989) believed that: “One way to combat malnutrition is to broaden the existing food base and to this end ... ‘poor people’s plants’ should be developed” (1989: 559).

This study aims to explore and highlight the broad wild-food-plant base of indigenous communities, to investigate the nutritional value of such plants and to consider ways of educating people on the value of such plants and the need to promote their continued sustainable use to the benefit of ‘poor people’ in rural communities.

This research is an ethnographic case study of the use of wild food plants by a rural community. A rural community was chosen because it is within remote communities that one is expected to find individuals with the richest traditional knowledge (Cunningham 1994). Also the relationships between people and plants are often clearer in indigenous/traditional societies since the link between production and consumption is more direct (Balick and Cox 1996). The community studied was Tuku A Village in the Peddie District of the Eastern Cape. The community was chosen because the village is surrounded by indigenous vegetation from which I suspected they were harvesting some indigenous food plants.

1.2 The Study Area

KwaTuku A village is in the Peddie District of the Eastern Cape, approximately 130 km from Grahamstown and about 30 km from the seacoast. The surrounding vegetation is predominantly 'valley bushveld' comprising dense succulent thickets characterised by the succulent spekboom (*Portulacaria afra*), euphorbias (*Euphorbia spp.*), aloes (*Aloe spp.*), as well as the non-succulent sweet thorn (*Acacia karoo*), star apples (*Diospyros spp.*), the common cabbage tree *Cussonia spicata*, the jacket plum *Pappea capensis*, the cross berry *Grewia occidentalis* and other species (Martin and Noel 1960). This is interspersed on higher areas by grassland (grass turf). Encroachment by sweet thorn is evident on eroded and disturbed areas and there are some patches of 'karroid'.

Tuku is a village in transition towards urbanisation, with almost every home being electrified. The influence of the media is evidenced by the presence of radio and TV sets in almost every home. With the exception of a few dedicated individuals, agricultural activities are minimal. There is therefore a heavy reliance on the cash economy with most residents relying on pensions, grants or money from adult children employed in the cities, with some (particularly female-headed households) resorting to beer selling.

The population comprises mainly the elderly and the young, school-going youth. The middle-aged group is mainly in the cities though they keep contact with (and exert influence on) the village.

1.3 Rationale

Most African communities have traditionally relied on a very broad food base, comprising of mainly wild food plants, which was nutritionally excellent (Gelfand in Tredgold 1986) . However presently, presumably for a number of reasons, there has been a shift away from the use of wild food plants in the diet. This in turn may have a negative effect on the local plant biodiversity as some wild food plants are usually selectively conserved by local communities. In this research the focus was on understanding the relationship that a rural community had with the indigenous plants in their environment, specifically their use as food.

This study documents past and present use of wild food plants in the village, explores possible factors (social-cultural and economical, media influence, education etc.) influencing changes in attitudes towards wild food plants, and possible health implications of such changes. By explaining the trends in

wild food plant use and their influences, this study intends to inform education processes which could contribute towards ecologically sustainable use of botanical biodiversity and community health. Since little work has been done in southern Africa towards documentation of wilds food plant use (Dakora 1996), this study will also contribute towards this documentation.

1.4 Aims of the Study

The main aims of this study were

- to document indigenous community knowledge of wild food plants, both those currently in use and those used in the past, in an Eastern Cape village;
- to explore changes in the use of wild food plants by the community over time
- to investigate what factors played a role in changing patterns in the use of wild food plants in the village;
- to explore possible links the community makes between traditional and modern diet and health;
- to carry out a nutritional analysis of some of the indigenous food plants;
- to come up with some educational recommendations for the following practitioners in the education field: environmental educators, conservationists, dieticians and health workers, and agricultural workers.

1.5 Clarification of Key Concepts

- Indigenous Community – by this I refer to people who belong to and have occupied an area for generations and who still to great extent follow their traditional lifestyles and ways of knowing, or at least are well knowledgeable about it.
- Indigenous Knowledge- this is a way of knowing and skills possessed by original local communities which reflects their direct link with the environment. According to O’Donoghue (1999 pers. comm.) the term ‘indigenous knowledge’ is an abstract appropriation. He had suggested in its place ‘indigenous knowing’, which I have adopted.
- Indigenous Food Plants- these are food plants of indigenous origin i.e. which naturally belong to an area.

- Wild Food Plants- these are plants that occur in the wild, uncultivated form in natural ecosystems. These include both indigenous food plants as well as plants of cosmopolitan occurrence which might or might not be of indigenous origin. If they are not of indigenous origin these plants (of cosmopolitan occurrence) have become naturalised to the area, i.e. are capable of reproducing and spreading without the aid of humankind.
- Veld- this, loosely used, refers an intermingling of woody plants and grasses growing naturally together
- **Imifuno** or Pot-Herbs- these are wild vegetables or spinach that are consumed after cooking.
- Root/Tuber Plants- these are plants with edible underground parts. The edible part is either a root or tuber.
- Participants- I have preferred to use the term participants instead of informants in this study because I felt the people I engaged with in the study participated in discussions about an issue and voiced their opinions, views and concerns rather than passively gave information in response to questions asked. It is upon these discussions that the themes of the study eventually evolved.
- Chief Informant- this refers to an individual who was familiar with the research area and was responsible for introducing me to the community and helping me identify research participants. I owe my access to the community to him and I also stayed at his residence with members of his family during my field research periods.
- Research Assistant- this was a community member who served as a guide to me around the community as well as a translator when I encountered difficult words and terms in the local language (Xhosa). He was both conversant in Xhosa and English and was well known to community members in the village.
- Sustainability/Sustainable Use- this implies the utilisation of a resource in a way that will ensure its availability for future use.

N.B. All non-English names in this study will be written in **bold** and scientific names will be *italicised*.

1.6 Outline of the Study

This study has been structured into 3 sections comprising 7 chapters. Section 1 is the introductory section. Chapter 2 of this section outlines the research process i.e. an ethnographic case study involving participant observation, unstructured individual interviews and focus group interviews, as well as the data analysis process. Chapter 3 is a survey of existing literature.

Section 2 focuses on the research findings. Chapter 4 looks into the community's knowledge of indigenous food plants. The shifts in the role of indigenous food plants in the diet of the community and possible factors influencing such shifts are discussed in Chapter 5. Chapter 6 looks into the links that community members make between the diet (both the traditional and the modern diet) and health.

Section 3 is the concluding section containing the last chapter, Chapter 7. This chapter is a concluding discussion summarising key ideas which may have implications for environmental education and makes recommendations with particular reference to environmental education.

CHAPTER 2: RESEARCH METHODS

This chapter outlines the ethnographic research process.

2.1 Research Design

This study aimed to document the use of indigenous food plants by a rural community. Since the study focused on one specific community which was to be investigated in its natural setting, an ethnographic case study was done. Ethnography is defined as a branch of research methodology dealing with the description of individual cultures (Wiersma 1986). Ethnographies are analytic descriptions or reconstructions of intact cultural scenes and groups. Ethnographies should recreate for the reader the shared beliefs, practices, artifacts, folk knowledge, and behaviors of some people. They should represent the world-view of the participants being investigated (Lecompte and Priessle 1993). In this case the study looks into a particular aspect of cultural context, i.e. that with regards to the use of indigenous plants as food.

Since they are reconstructions of a single culture, ethnographies are by definition case studies. Most ethnographies are also by definition field studies. Field studies are defined by the site of the research, usually the natural habitat or customary environment of the participants (Lecompte and Priessle 1993). In my case I would define my study as being both a case study as well as a field study. This is because it was undertaken in a single community and within the natural settings of the participants.

Ethnography involves mainly qualitative data. It should not be inferred that ethnographic research is limited to qualitative data (Wiersma 1986). When quantitative or statistical data is involved however, it plays at most a subordinate role (Artkinson and Hammersely in Denzin and Lincoln 1994).

The study involved me staying in the village for one ten-day period (24 April –2 May 1999) and one subsequent sixteen-day period (29 May – 14 June 1999) of field study. A one-day scouting trip and a five-day (5 - 9 April 1999) preliminary survey of the research area and identification of research participants had been done prior to the main field study. A three-day independent collection trip was also carried out, marking the end of the field research. During all my visits and periods of residence in the village I was taken care of by the very kindly grandmother of my key informant (and friend). I

stayed and ate with the family and in this way observed and learnt a lot about the diet and culture of the community through them.

2.2 Participants

2.2.1 Sampling Technique

Purposive sampling was used in the selection of participants in order to allow me to have an in-depth focus on issues important to the study (Cantrell 1993, Cohen and Manion 1989). A key informant, who was a course colleague and a resident of the village, gave advice on whom to interview. Participants, comprising elderly members of the community, believed to be knowledgeable on indigenous food plants were selected. The initial sample of participants focused on the elderly members of the community because these had been identified as repositories of knowledge in some previous studies undertaken on indigenous knowledge (Lalonde 1993, Mtshali 1994, Ngwane 1999). However this was expanded to incorporate the village youth after an accidental discovery of their knowing of indigenous food plants during an interview with the elderly (see 2.8.2.1).

2.2.2 The Research Participants

The initial sample comprised six elderly females and seven elderly males with an age range between 50 and 80 years. The participants were Mrs Camagu (age unknown, roughly in her late 80's), Mrs Madlingozi (69 yrs), Mrs Mavata (75 yrs), Mrs Xamana (67 yrs), Mrs Madeyi (age unknown, roughly in her 70s), Mrs Hola (79 yrs), Mr Joka (age unknown, roughly in his 50's), Mr Magoswana (78 yrs), Mr Matshotyana (79 yrs), Mr M Mavata (63 yrs), Mr S Mavata (75 yrs), Mr Sikontya (73 yrs), Mr Tshoyo (79 yrs). All participants in the group were residing in the village during the time of the study. Most of the participants (except for Mrs Camagu and Mrs Madlingozi) had worked for a considerable amount of time in the cities. The majority of those that had worked in the cities were still reliant on pensions from their work places. Most of the participants were also still engaged in agricultural activities in the village.

The youth groups comprised of one male and eight males between the age of 18 and 34 years. There were three groups of youth participants. Participants in the first group were Vumile Mavata, Ngawodwa Luvuno, Aandile Twatwa and Zwelixolile Deliwe (aged between 18 and 30 yrs). When generally referring to this group it shall be called V Mavata *et al.* The second group had the participants

Zwelinzima Nqondi (26 yrs), Siyabonga Dingela (22 yrs) and Duduzile Nqondi (24 yrs). When generally speaking of the second group it shall be referred to as Z. Nqondi et al. The last group comprised Simphiwe Luvuno (34 yrs) and Nceda Vuma (32 yrs). When referring to this group both names shall be used. Amongst the youth only four (S Luvuno, N Vuma, S Dingela, and Z Deliwe) were neither engaged in academic activities nor employed.

While equal distribution of male and female participants would have been preferred in order to balance gender, this did not turn out to be so, particularly with the youth groups.

2.3 Data Collection

I employed the following methods in the collection of data: i) participant observation, ii) interviews (unstructured individual and focus group interviews), iii) field collection trips, and iv) nutritional analysis.

2.3.1 Participant Observation

Lecompte and Priessle (1993) classify participation in field research into four kinds: the complete participant, the participant-as-observer, the observer-as participant, and the complete observer. In the 'complete participant' the role of the researcher is not known to the group being investigated, with the researcher assuming an insider role. As the 'participant-as- observer' the researcher's role is known to the group and he/she interacts with the group under investigation. The 'observer-as-participant' is also known as the researcher to the group but has limited interaction with participants. The 'complete observer' like the 'complete participant' has a covert researcher role and participants go about their business without knowing they are being observed.

I have chosen for myself the role of 'participant-as-observer' in this research as this enables the researcher to address ethical issues more directly and enables access to the whole group. It also opens up negotiation (between the researcher and the participants) in the data collecting process and allows the researcher to seek feedback on what is seen and how it is interpreted (Lecompte and Priessle 1993).

Participant observation has a very long history. People visiting foreign countries and later describing the customs and achievements of the people they come across have done so since writing was invented (Wax in de Vos 1998). Participant observation is the intimate involvement in the daily life of the

research participants (Lecompte and Piessle 1993). It is a way of obtaining firsthand knowledge of persons and groups in their natural environment. The participant observer attempts to assume the role of individuals under study and attempts to experience their thoughts, feelings and actions. In this way the researcher attempts to generate data from the perspective of the individuals being studied (Wiersma 1986).

During my stay in the village I was able to generate interview questions from participant observation which I then used during my interview sessions.

Participant reports of activities and beliefs may not match observed behavior. Here participant observation serves as a check, enabling the research to verify that individuals are doing what they (and the researcher) believe they are doing (Lecompte and Priessle 1993).

2.3.2 Interviews

Two types of interview formats were used. These were unstructured individual interviews and focus group interviews. All the interviews were directly handwritten. No tape recordings or video clips were made. The interviews ranged between one and half to three hours, depending on the enthusiasm and eloquence of the participant (for interview summaries see Appendix 3).

2.3.2.1 Unstructured Interviews

Unstructured interviews are not completely unstructured in that the interviewer already has in mind a general topic and may want to ask specific questions (Schurink 1998). However there is no predetermined sequence of questions or specific wording. Open-ended questions were used in order to avoid restricting the participants' answers and to give respondents control over what they wished to say and how they wished to say it (Irwin 1999). They enable informants to express their opinions and perspectives freely and also allow for the capture of the unexpected (Mtshali 1994). Unstructured interviews have the advantage that reality can be constructed in the 'world' of the interviewee (Schurink 1998). The use of unstructured interviewing provides greater breadth than other interview types (Denzin and Lincoln 1994).

Unstructured interviews were used in this research to verify and elaborate on my observations as well as to obtain relevant additional information not observed such as indigenous food plants not in use in the

village during the time of study. Unstructured interviews were used for individual interviews with elderly participants.

2.3.2.2 Focus Group Interviews

Focus group interviews were originally intended for triangulation purposes, i.e. employed in conjunction with unstructured interviews with individual participants, particularly with regards to knowledge on indigenous food plants available in the area, so as to get a comprehensive inventory list. During the field research however, focus group interviews were only used as a data collection technique with the youth (see evaluation of methodology at end of chapter).

It should be noted that the youth were not a select group of well informed participants being asked specific questions about a topic as is usually the case with focus group interviews (Denzin and Lincoln 1994). Rather they were interviewed in order to assess whether knowledge on wild food plants was passed on to the youth in the community. The youth had not been interviewed individually prior to the group interview. The group interviews were however a convenient method to gather data amongst the youth and they did facilitate interaction between the participants (Kitzinger 1994). Open-ended questions (Irwin 1999) were used in these interviews.

2.4 Collection Trips

Having a botanical background I have developed a very keen dutiful belief in having any plants that I work with correctly identified. To achieve this end I made five collection trips during the research period in which I employed the expertise of the community members to point out to me indigenous food plants from which I then collected samples for herbarium identification. Identification was done with the help of staff from the Selmar Schonland Herbarium in the Albany Museum, Grahamstown. Besides collecting specimens for identification I also collected sizable samples of edible parts of the plants (fruits, roots/tubers, leaves etc.) for nutritional analysis.

2.5 Nutritional Analysis

The Biochemistry section of Rhodes University carried out chemical analysis of the nutritional composition of 12 different food plant species. The main factor determining what species and how

many were chosen was their availability, however an effort was made to cover the different food types (fruits, root/tuber plants and wild spinach).

2.6 Data Analysis

Content analysis (Berg 1998) was used in the analysis of the research data. Interview data was coded and sorted into themes. This exercise was also done for other data sources (observation field notes). Inconsistencies and unique statements were noted and given particular attention.

2.7 Ethical Considerations

In order to preserve anonymity of respondents some people resort to the use of pseudonyms. In the case of this study however I felt I should acknowledge the contributions of the community members, to whom I owe a great debt, by using their actual names rather than hiding their identity. Consultation though had been made with the participants to determine if they would object to my using their names. None of the participants objected to the idea.

2.8 Evaluation of the Methodology

2.8.1 Constraints

2.8.1.1 Time

As a novice researcher I found myself perpetually short of time while conducting my research. I felt I needed more time to address the emerging issues and questions and to collect more data, particularly with regards to some plant species that were not available because they were not in season.

While my assistant had been very reliable during my first long stay in the village during which I conducted my first interviews with the participants this was not the case in the second visit. During the later visit he was hardly available and to some extent elusive. Initially I could understand that he was actively engaged at the polling station in the village after which he got ill. Succeeding this he became very hard to get. This caused panic in me and also considerable time loss.

During my second long-stay period I also encountered transport problems at the beginning which eventually cost me three working days.

Some of my interview appointments failed to materialize due to participants getting engaged elsewhere. These scheduled interviews could not be annulled at the last minute and their time space filled by other interviews. This resulted in loss of time. I conclude from this that one needs ample time to conduct ethnographic field work.

2.8.1.2 Language

While I could understand basic Xhosa language, I had to grapple with new words, terms and a slightly different culture to mine. During the early stages of the research I was cushioned by the presence of my key informant who is a colleague as well as a friend. However when he could not be available in subsequent visits to the area I felt somehow lost. My assistant and the family members at my place of residence during my field research were very helpful in making me feel at home. My assistant was helpful in making the preliminary introductions on my behalf and in explaining uncommon terms to me as he was conversant in both Xhosa and English. However after my first long period of interaction with participants, I was more conversant and confident in subsequent periods of stay. I believe this was due to me being more used to most of the participants after having interviewed and interacted with them during the earlier periods of stay in the area i.e. rapport had been established between the participants and myself. I conclude from this that extended stays with informants are essential in ethnographic fieldwork.

2.8.1.3 Participants

I was unable to interview two of the adult participants suggested to me. One elderly lady claimed she was not very conversant in indigenous food plants and tactfully referred us to somebody else. I believe however that she underrated or underestimated her knowledge and was not very confident in herself. She did initially give us names of two food plants before suggesting that we pay a visit to her relative, a traditional healer, whom she claimed was more knowledgeable as she had been an informant in a study involving some white researchers who had been interested in medicinal plants. From this I also felt that she had not interpreted very well the fact that I was specifically interested in wild food plants. I however did not try to press her for more information as I had already several other willing participants. The other participant I failed to interview was male and had promised to attend to us on the scheduled date. However a death occurred in the village and he said he had to attend the funeral at the scheduled time. The same occurred to a female participant whom I would have very much loved to interview a second time to get her full story, as she was very articulate and conversant in both English and Xhosa.

However a death occurred in her family and prevented this encounter. I conclude from this that it is not always possible in ethnographic field research to get responses from all proposed informants due to fears developed by some participants and time limitations.

2.8.2 Changes in Methodology

2.8.2.1 The Sample (Participants)

Initially my sample of participants comprised only of elderly members of the community. This had been so because in similar previous research work (see under 2.2.1) the elderly were claimed to be the main repositories of knowledge within the community. However, by fortuitous accident while interviewing some of the elderly participants in the presence of younger family members, I observed that some of the youth participated and contributed names of indigenous food plants. After discussing this observation with my supervisor it was agreed that I interview some of the youth with the aim of establishing whether knowledge was indeed passed on to the youth. Eight youth were then incorporated into the sample.

2.8.2.2 Focus Group Interviews

Focus group interviews were originally intended to triangulate information obtained from interviews with individual elderly participants, particularly with regards to local names of indigenous food plants for which I was compiling an inventory. However, due to time constraints and the difficulty in getting participants together, this was abandoned. Moreover a mere comparison of lists of local names from individual participants showed a great deal of overlap, reducing the need for such interviews. Focus group interviews were however used with the youth. This was because it was an arduous task to meet the youth individually. I therefore resorted to taking advantage of the fact that most of the youth usually hung around their friends for most of the time and thus focus group interviews were a better strategy.

CHAPTER 3: LITERATURE REVIEW

This chapter gives an overview of available literature in areas of investigation that the study is intended to cover. These are the past and present role of wild food plants, the impact of agriculture on plant and food diversity, the value of indigenous people's knowledge and the relationship between diet and health.

3.1 The Role of Indigenous Plant Biodiversity as a Food Resource

Indigenous societies, through a process of trial and error experimentation in their environment, acquired immense amounts of knowledge on (the use of) fauna and flora around them (Fox and Norwood Young 1982). From this diversity of life they relied on a high proportion of wild plants as food. These food plants formed a very broad resource base.

In Africa, until way into the 19th century, indigenous food plants played an important role in the traditional diets of African people (Flueret 1979, Tallantyre and Goode 1975). Fox and Norwood Young (1982) recorded more than 1000 indigenous food plants in southern Africa alone. The significant role played by this diverse food base is however diminishing. Gomez (1989) has claimed that economic and technological growth have a debilitating effect on traditional cultural values and food habits which lead to a shift away from traditional food resources. Maundu (1995) cited westernised markets, formal education, urbanisation and change in food preferences as the factors contributing to loss of traditional knowledge on edible plant species. One of the interests of this study is to investigate possible factors that could have led to a change in the use of indigenous food plants by the Tuku community.

Taking an overall picture of the world at large, a similar trend as above can be observed. Approximately 500 000 flowering plant species are known to exist on earth (Fox and Norwood Young 1982). 75 000 are believed to be edible and of these about 150 are recognised world wide as food plants, nearly all of which were discovered by 'primitive' man (Wehmeyer *et al.* 1969). Only about 30 of the latter make a significant contribution towards human nutrition at present (Kocchar and Singh 1989, Koopowitz and Kaye 1990, Walters and Hamilton 1993), with the cereals maize, wheat and rice making up the major dietary staples (Koopowitz and Kaye 1990). This signifies a great reduction in the use of available food plants in the world.

3.2 Impact of Agriculture on Plant and Food Diversity

Biodiversity loss in Africa is as a result of several factors. These include inappropriate agricultural practices, over-harvesting of plant resources, commercial land use practices, introduction of alien species, climatic changes, pollution, population and migration pressure, and many more (Biodiversity Support Program 1993). I have however focused on agricultural practices because I believe that in rural areas the main cause of change in food preference and plant biodiversity loss is the impact of agricultural practices.

The current agrarian system has brought about clearance of natural vegetation to support vast hectares of uniform stands of biotechnologically produced crops in an effort to satisfy the demands of the world's economic markets at the expense of indigenous food plants better suited to the local conditions. The cultivation of monocultures of hybrid crop varieties has required manipulation of local conditions through the use of irrigation and heavy fertiliser and agro-chemical applications (Slikkerveer 1995). These bring about significant changes to the local environment, which have serious repercussions on plant biodiversity and on continued food security (Gomez 1989, Shiva 1995). Effects of agro-chemicals include release into the soil of toxic matter and increased soil acidity caused by ammonia-based fertilisers which in the long run lead to diminishing yields, environmental degradation and pollution of water resources. Pesticides and herbicides are not highly selective and usually lead to loss of beneficial organisms.

With regards to genetically modified crop cultivars, these are generated for crop uniformity in order to increase yields. If a disease or pest were to appear the entire crop would be wiped out. This has been evidenced by such catastrophes as the Irish potato blight, the southern corn blight of America and the Asian rice incidence, to name a few (Koopowitz and Kaye 1990, Shiva 1995). Such incidences have resulted in dire food insecurity for the affected nations, highlighting the danger of relying on a very narrow food base. Through the promotion of such crops modern agriculture is actually supporting the decline in food varieties, and hence biodiversity, as more and more people rely on fewer and fewer crops (Slikkerveer 1995, Shiva 1995). This approach to agriculture in my opinion is in itself the greatest single threat to biodiversity. Currently the seed industry, specifically the seed company Monsanto, has developed the genetically modified 'terminator' maize seed which produces non-viable seed (Macleod 1999). In addition to creating dependency of the farmer on the seed and therefore agrochemical industry, such genes can be a potential threat to biodiversity if they escape into wild plant populations

thereby affecting plant reproduction in nature. Commercial agriculture has also perpetuated the view of any competing wild plants appearing in the uniform field to be considered as 'weeds', despite some of them being useful to humankind (Shiva 1991).

Most communities have been turned to rely on commercial crops to the detriment of their local food sustenance. Slikkeveer (1995) has claimed that until the sixties Africa was self sufficient in its food production. The introduction of high yielding commercial crops marginalised the growing of indigenous food crops. People began to rely on sales of commercial crops to buy food which they previously grew for themselves. The resultant high yields from commercial crops are however short-lived (due to land degradation and negative impact of agro-chemicals) and in most cases market fluctuations in agricultural produce can have a catastrophic impact on the farmers. Such incidences have occurred in several African countries whose economies are based on agricultural exports. A vivid example was the growing of sugarcane in the Caribbean islands. Whilst initially sugar production brought wealth to the Caribbean, when prices of sugar began to fall the impact was devastating for the Caribbean communities. Hobhouse (1999:103-104) commented on the aftermath of this when he wrote "Few islands in the Caribbean have made a concerted effort at self-sufficiency, and despite the fact that the Caribbean has more food plants than Europe, people even in some of the favoured agricultural areas would starve but for imports, usually from Canada or the United States".

A similar event was related by Balick and Cox (1996) on the Anasazi Indians of Mesa Verde. Traditionally a hunter-gathering society, the Anasazi turned to a sedentary lifestyle upon the introduction and continued cultivation of maize in the thirteenth century. As a result of the introduction of maize they developed into an urban agrarian society with a population density that exceeded that of major European cities of that time. However by the end of the 13th century a twenty-three year relentless drought, from 1276 to 1299, forced the Anasazi to abandon the city of Mesa Verde. What this demonstrated was that the development of agriculture, while it usually increases food production levels, reduces resistance to unpredictable environmental conditions to which the people were previously cushioned from by a broad food resource base.

3.3 Indigenous People and Indigenous Plant-Use Knowledge

Global interest in and recognition of indigenous knowledge - “the local knowledge that is unique to a given culture or society” (Warren *et al.* 1995:xv)- is on the increase with the continued realisation of how such knowledge can benefit the world.

The International Forum of Non-Governmental Organisations held in Rio de Janeiro (International Council for Adult Education 1992) stated as one of its principles that “Environmental Education must recover, recognise, respect, reflect and utilise indigenous history and local cultures, as well as promote cultural linguistic and ecological diversity”.

In support of acknowledging knowledge possessed by indigenous peoples, Chapter 22 of Agenda 21 (UNESCO-UNEP 1992) proclaimed that “ Over many generations, indigenous people have evolved holistic, traditional scientific knowledge of their land, natural resources and the environment. Their ability to practise sustainable agriculture has been limited by economic, social and historical factors. Indigenous people should actively participate in the shaping of national law and policies on the management of resources or other developmental processes that affect them”.

Indigenous people, through a long period of interaction with their surrounding environment, are vested with comprehensive knowledge on the potential use of local plants in their environment. Balick and Cox (1996:5) have claimed that “...the relationships between plants and people are often clearer in indigenous societies than in our own, since the link between production and consumption is more direct”.

Several writers recognise the impending threats to indigenous peoples’ knowledge on the use of indigenous plants. Warren (1995:94) raised this concern when he said “Of equal concern (to global awareness concerning the conservation of biodiversity) to many world citizens is the uncertain status of indigenous knowledge that reflects many generations of experience and problem solving by thousands of ethnic groups across the globe. Very little of this knowledge has been recorded, yet it represents an immensely valuable database that provides humankind with insights on how numerous communities have interacted with their changing environment, including floral and faunal resources”.

With specific regard to indigenous knowledge on plant use, Booth and Lucas (1989:468) noted the concern that “There is urgent need to record the usage of plants by such (so-called ‘primitive’) societies, as both plants and aboriginal societies are disappearing at a rapid rate, and yet many of the modern drugs came from such sources, as they developed in primitive societies after long periods of trial and error procedures”.

On the use of indigenous food plants Gomez (1989:1) contended that “More serious than the physical decline and loss of traditional food resources...is the loss of vast and ancient knowledge in identifying and recognising these resources and of the often elaborate technologies of their utilisation.”

In southern Africa whilst there is increasing interest in indigenous knowledge relating to plant use, this has mainly been in relation to medicinal plants. Documentation on indigenous medicinal plants includes the works of Gilges (1955), Watt and Breyer- Brandwijk (1962), Kokowaro (1976), Gelfand *et al.* (1985) and Van Wyk *et al* (1997). Cunningham *et al* (1992) and Dakora (1996) confirm this lack of coverage of indigenous food plants, marking it as a knowledge gap that needs urgent attention.

Some work done recently in the southern Africa however includes the study of indigenous food plants. Mtshali (1994) in her investigation of environmental knowledge of the elderly in KwaZulu Natal documented indigenous plants used as food in Maphumulo and Ingwavuma. Ngwane (1999) also documented indigenous food plants in her study of factors that contributed to the decline of indigenous plant species in the Eastern Cape. The focus of the current study is solely on the use of indigenous plants as food by an Eastern Cape rural community.

3.4 Diet and Health

Modern diets, with their prevalence of processed foods, lead to over-consumption of fats and sugars and low consumption of fibre which impact negatively on health (Abraham 1991). Related illnesses include constipation, dental caries, colon cancer, acute appendicitis and coronary heart disease (Abraham 1991). Also health-threatening are food additives in the form of colourings and flavourings. Traditional diets on the other hand, with their diverse variety of indigenous food plants, have been found to be rich in fibre and a broad array of dietary nutrients (Balick and Cox 1996 and Gelfand in Tredgold 1986). In this study I will look at links that traditional communities make between diet and health.

3.5 Conclusion

While commercial agriculture has produced high yielding crop varieties which can feed a multitude of people using intensive cropping, this has come with its own price. The price includes loss of indigenous vegetation, a heavy reliance on the agrochemical and seed industries by local farmers with pending threats of pest and disease outbreaks, and a reliance on a narrow and precarious food base. Most of the staple food plants are refined during processing for consumption with loss of beneficial components (minerals, vitamins and fibre) and pose greater risks to health (coronary heart disease, malnutrition, etc.).

The need to recognise indigenous knowledge is becoming more widely noted as evidenced in various publications in this respect. Limited documentation however exists with regards to indigenous plant use as food in southern Africa. This study aims to contribute towards documentation of indigenous food plants and encouragement of their continued use and conservation for the benefit of rural communities. The study also aims to explore underlying factors contributing to shifts in diet, which increasingly excludes indigenous food plants. Links between diet and health are also investigated.

SECTION 2

This section tells the 'story' of the research, i.e. gives the research findings. The story has been documented under main themes which comprise the chapters of this section. These are: community knowledge of indigenous food plants (Chapter 4), shifts in the use of such food plants and possible factors influencing such shifts (Chapter 5), and links made by the community between indigenous food plants, modern diet and health (Chapter 6).

CHAPTER 4: A WEALTH OF KNOWLEDGE ON INDIGENOUS FOOD PLANTS

This chapter looks into the knowledge of indigenous food plants in the local environment possessed by the community.

4.1 Knowledge of Indigenous Food Plants Possessed by the Elderly

From interviews with elderly participants in the village as well as from identification and collection trips in the veld, I compiled an inventory comprising more than 80 species of edible wild plants used in the village (see Appendix 1). These could be broadly categorized into wild spinach or **imifuno** (21 species), wild fruits (41 species), edible roots/tubers (seven species), beverage plants (seven species), and other edible plants i.e. plants with edible gums/resins, bark or other vegetable parts (seven species). It should be noted that some plants overlap into more than 1 category e.g. they can be in the **imifuno** category as well as in the wild fruit category.

An interesting discovery was the fact that most of the **imifuno** mentioned are usually considered as arable weeds of cultivated lands in modern agriculture terms.

In this study the women knew slightly more of **imifuno** compared to men, while men on the other hand knew a broader range of wild fruits and root/tuber plants compared to women. Most of the participants were able to correctly recognize, identify and verify with local names the plant samples I collected without difficulty.

4.2 The Youth and Indigenous Food Plant Knowledge: Evidence of Knowledge Transfer to the Youth

The youths interviewed showed knowledge of quite a broad range of wild food plants, at as much as the elderly. It was quite interesting that my longest list of wild food plants (17 fruits, four root/tuber plants, four **imifuno**, three other vegetables and one beverage) came from an interview with two of the youth (S Luvuno and N Vuma) rather than from the elderly participants who I had expected to be more knowledgeable.

Besides the lists of wild fruit plants obtained from interviews with the youth, there were other indications of knowledge transfer to the youth (or the possession of knowledge of food plants by the

youth). On some of my collection trips into the veld, some very young community members volunteered to join us. I observed that they were able to point out the localities of, as well as identify, some wild food plants in the veld. I also had fruit brought from the veld for me on more than one occasion (as well as for consumption by the family) by a young member of the family I was residing with.

During the interviews some respondents (Mrs Mavata; Mrs Xamana; Mr M Mavata; S Luvuno and N Vuma, Mr Magoswana, Z Nqondi et al) stated that the youth went out to collect and bring back their favorite fruit to share (with girls and other family members). There was also mention that some of the elderly brought home wild fruit from the veld to so that the youth could learn to recognize them and thus be able to collect them for themselves in future (Mr S Mavata).

For my last two collection trips I relied heavily on the assistance of some of the older youth in the village that I had befriended to identify, locate and collect wild food plants. I also observed that they were very knowledgeable about the season of occurrence of most of the wild food plants, which was very important time-saving information.

4.3 Discussion and Interpretation

Indigenous people, particularly those dwelling in isolated rural areas, possess a wealth of knowledge about the flora around them (Cunningham 1994), and have discovered and come to rely on a wide variety of indigenous food plants (Fox and Norwood Young 1982, Gomez 1989).

Lee (1979), in his study of the !Kung San in the Kalahari, documented 105 edible plant species in the Dobe area alone. Thayer Scudder (1962) listed 131 species of edible wild plants in his study of the Gwembe Tonga. Both these studies were done on quite isolated communities. While Tuku Village is not very isolated from the city life (and in fact is a village in transition towards urbanization), it compares well in terms of the number of edible plants known by the community (more than 70 species).

Most of the knowledge of edible wild plants is said to be attributable to the elderly who are considered as repositories of indigenous knowledge (Lalonde 1993, Mtshali 1994, Ngwane 1999). The youth are said to lack interest in indigenous knowledge (Mtshali 1994, Ngwane 1999). However in this study there is considerable evidence that the youth are knowledgeable about indigenous food plants. This

might be due to that there is still a close bond between the village elderly and the youth, as the community comprises mainly these groups. The traditional culture in the village appears to be still intact despite the fact that it is in transition towards urbanisation. It might also be because these researchers took it for granted that indigenous knowing was a domain of the village elderly and they never made an effort to specifically look into knowledge possessed by the youth.

From the interviews with some of the elderly participants it is apparent that some kind of “show and tell” is employed in the transfer of knowing. One elderly for instance mentions that the youth learnt these plants by observing those that were brought into the home by the elderly and later going on their own to collect them (Mr S Mavata). Ruddle (1993) calls this means of knowledge transfer observation followed by imitation. I also think that the youth learnt by observing and imitating their peers or elders while in the veld. Deliberate instruction by knowing elders is also a possibility (Ruddle 1993).

The evidence of transfer of indigenous knowing to the youth is quite encouraging as it gives some hope of the continued existence of such knowing. The question that still remains however is how long this knowledge transfer will last. Taking into account the diminished use of indigenous food plants, as evidenced in this research, as well as the exclusion of such knowing in the formal educational setting due to the dominance of the western knowledge system (Sibanda 1999), one cannot help feeling that the future of indigenous knowing is under threat of extinction, as are the indigenous cultures. It is here that the documentation of such knowing becomes essential as a more permanent record. The need for documentation of indigenous knowledge has also been raised by Gomez (1988), Booth and Lucas (1989), Warren (1995) and Dakora (1996). Consideration has to be given however to the applicability of such documented knowledge, as I believe it will be useless and futile to document this knowledge for the sake of documentation alone. It should be pointed out that greater emphasis has been made on documenting indigenous knowing that is economically viable to external entrepreneurs and institutions without taking into consideration the local applicability and benefits of such knowledge (Masuku 1999).

Most women participants listed more **imifuno** compared to man, whilst man knew more wild fruit and root/tuber plants compared to women. It appeared to me that traditionally in the Xhosa culture **imifuno** were the domain of women who collected and cooked them, hence their broader knowledge about them. Mtshali (1994) made a similar observation in her study. Men are more likely to be knowledgeable about wild fruit and root/tuber plants because they spend more time in the veld and thus encounter these plants while herding or hunting (Fox and Norwood Young 1982, and Mtshali 1994).

Most **imifuno** in the village are what would be described in modern agricultural terms as weeds (Shiva 1991). I have observed that **imifuno** grow amongst cultivated crops in the village. However instead of them being eliminated as weeds they were allowed to grow together with other food crops and were in fact regarded as such themselves. This indicates the innovativeness of traditional agriculture and might be a step towards the domestication of such wild spinach.

Under traditional farming systems wild plants were not necessarily weeds. Farmers would manipulate and spare them as resources depending on what benefits they could offer (Alcorn 1995). While utilisation of some wild plants can cease to be sustainable with economically oriented demand, particularly medicinal plants (Cunningham 1995) this does not seem to apply to indigenous food plants. Campbell (1985 in Gomez 1988) observed that on agricultural land in Zimbabwe most of the communal people left behind wild fruit trees when clearing their fields for cultivation. This selective conservation to me is an indication of a non-economic value attached to indigenous food plants by the indigenous communities. Food security is a priority in such communities and they do make efforts to ensure this security. In this study I observed that wild fruit trees such as **ingwenya**, **umthombe** and **isiphingo** had been left standing in the village and in homesteads, despite most of the vegetation having been cleared. **Imifuno** still occurred in most people's gardens and were highly regarded in the village.

While I did not look much into conservation practices in the village, the above evidence indicates that continued use of wild food plants could be one of the ways to ensure plant biodiversity conservation.

CHAPTER 5: CHANGING WITH THE TIMES - WILD FOOD PLANTS AND THE DIET

In this chapter I am going to focus on the shifting role of wild food plants in the community diet and possible factors causing such a shift.

5.1 The Traditional Role of Wild Food Plants in the Diet of the Community

Amongst the interviewed participants there was a general consensus that indigenous food plants were mainly eaten as dietary supplements (V Mavata *et al*, S Luvuno and N Vuma, Mr M Mavata, Mr S Mavata). The main diet was said to be comprised of sorghum, maize and **amasi** (soured milk), these components being occasionally supplemented with meat and other foods (Mrs Mavata, Mrs Camagu). Wild food plants were consumed when available.

Contrary to the above statements was the popularity and widespread use of **imifuno** in the village. **Imifuno** are usually cooked mixed together with mealie (maize)-meal to make a dish called **isigwamba**. Also of note is statements by some of the participants that when they were boys herding cattle they never needed to come back home for food during the day: “When we were young boys (**amakwenkwe**) and we were assigned to go out herding livestock we usually left early in the morning and never had to come back until in the evening. During the day we relied on wild food plants available in the veld. These were adequate to keep our stomachs full”(V Mavata).

There was consensus from all participants that **imifuno** were traditionally not to be eaten by men as they were believed to make them weak and cowardly like women (**babengangomfazi**).

5.2 Evidence of Change in the Role of Wild Food Plants in the Diet

Statements by most participants with regards to current and continued use of indigenous food plants indicated that there was a general decrease in the use of indigenous food plants in the present diet of the community. S Luvuno and N Vuma stated that they no longer used indigenous food plants as frequently as they did in the past. Mr M Mavata said, “The main diet has changed from the traditional one. Even the adult population no longer eat most of the traditional foods with the same zeal as in the past”.

While traditionally **imifuno** were not eaten by men, there was now evidence to the contrary. Men were now eating **imifuno**. Mr M Mavata elaborated that the myth was a ploy by women who wanted to have

something they ate that men would not take part in. Women thus spread the rumour that **imifuno** made man weak. Men however were said to have since discovered this ploy and were now eating **imifuno** which they said made them strong, hence the use of the term “**iyeza lovalo**” for **imifuno**, literally translating to “the courage giving herb”.

5.3 Factors Influencing the Decline in the use of Wild Food Plants by the Community

From interviews with participants and personal observations, there is evidence that a variety of socio-cultural and economic factors were at play influencing the current and continued use of wild food plants in the community. These include the following.

- Stigma/negative attitude towards wild food plants:

Wild food plants were said to have been labeled as “dirty”, “primitive”, “a source of disease”, and “food for the poor” (V Mavata *et al*, Mrs Madlingozi, Mrs Camagu, Mr Tshoyo). Mrs Camagu for example claimed that she had stopped using some indigenous food plants because people would label her as poor and backward. She said, “**Inxina** is a beverage I like because it has nice smell and a refreshing taste. However I am afraid to continue using it because if people see me they would spread the word that I am poor and primitive”.

- Fear of the Wild/Veld

The current young generation was said to have developed a fear of such things as snakes and other wild animals thought to occur in the veld (V Mavata *et al*, Mrs Camagu). Mrs Camagu lamented the current behavior of young girls in her following statement: “In the past boys herded cattle and girls gathered firewood and in that way came into contact with a wide range of indigenous food plants. We used to climb up **ingwenya** trees and any girl in our company who could not do so would only eat of those fruits that fell to the ground on their own. Our entertainment revolved around these activities. Now these young girls no longer go into the veld for fear of getting their skins scratched by bushes”.

- Change in lifestyle

Several statements from participants indicated that the lifestyle in the village have changed. Changes included the easy availability of modern food, attraction to city life, urbanization (advent of electricity and stores), change in entertainment (sports, media: radio and TV) and change in family roles.

Modern food was readily available from stores within the village. What was not available people would send for or get from nearby Peddie Town. Most of the informants have admitted their being influenced by modern food to change their diet (Mr Tshoyo, Mr Magoswana, Mr Sikontya, Mrs Camagu, V Mavata et al). Mr Magoswana claimed that “in the past there were no stores to buy food from and people relied on traditional foods as their main food source. This has now changed over time as people have become more reliant on stores for their basic food needs”. During one of my interviews when I inquired from one of the youth, V Mavata, whether he would allow his children to gain knowledge on and use indigenous food plants he said “I would not allow my child to go hunting for food in the wild when I can easily provide it for him”. This to me indicated an association of wild foods with poverty.

Cultivated crops have also replaced most wild food plants in the diet. Mr Tshoyo claimed that “As an agriculturist I became exposed to a wide range of cultivated crops, vegetables and fruits which I am cultivating even now. One has to change with the times.”

Most indigenous food plants naturally occur in the veld. However, the veld was now considered distant due to easier availability of modern foods (Mr Tshoyo and Z. Nqondi et al). This point is dealt with more in Section 5.4. The time taken to prepare indigenous food plants was also another factor that has lead to the decline in the use of indigenous foods. Mr Tshoyo claimed that some traditional food plants were too tedious to prepare.

The youth were said to be attracted to city life. Mrs Camagu claimed that “They (the youth) no longer enjoy the food that we ate and they say that food from the granaries (**isisele**) is smelly and rotten. They tend to emulate the modern diet eaten by those from the city, eating these chips, biscuits, bread and tea.” **Isisele** is a traditional underground granary comprising a deep pit lined with dung. After filling the pit with grain the top is covered with a flat stone and sealed with dung to make it airtight. This was then used to preserve the grain for long periods. Upon unsealing the pit methane gas from the dung (which acts as the preservative) escapes from it and gives the grain a putrid smell as it is brought up from the pit.

With regards to entertainment I noted during my stay that almost every home that I visited had a radio and a television set. Families would gather in the evenings to watch their best programs on TV. Soccer seemed to be a big hit with the youth. They went out in numbers, both boys and girls, to watch the

village team play against other villages. At one instance I observed a sizeable audience watching a game in the village despite the fact that it was raining. Mr Sikontya confirmed this observation when he stated in an interview that “The young people no longer spend a lot of time in the veld. They no longer herd cattle or collect firewood as we did. Electricity has now replaced firewood and most of the food eaten is now obtained from the stores. The youth are too busy with sports and other entertainment to bother about gathering wild food plants.”

The roles played by the youth in most families were also said to have changed. This evidenced from Mr Sikontya’s statement above. With the advent of schools and electricity, the previous roles such as herding livestock and collecting firewood were no longer being performed by the youth. Most of the cattle herding I observed was carried out by the elderly males in the village. Collection of firewood was now very limited with the introduction of electricity and other fuel sources (e.g. paraffin).

- Economic Shifts

A number of people in the village were no longer reliant on cattle and other small livestock for their economic security but now rely more on money from pensions and from their adult children working in the cities. Mr Tshoyo supported this observation during one of the interviews. I also noted that some households, particularly female-headed ones, were also trying to generate income from selling beer in their homes.

- Education

Education does seem to impact on continued use of indigenous food plants. Children now spend most of their times at school and thus have limited exposure to the veld. Most of the youth after completing school leave the village for higher education or in search of jobs.

5.4 Availability of Wild Food Plants

A range of responses were given by participants with regards to the availability of indigenous food plants. Most respondents claimed **imifuno** were available in the vicinity of the village (Mr S Mavata, Mr Sikontya, Mrs Xamana, Mrs Camagu, Z Nqondi et al). They were however said to be abundant only during the rainy seasons. There was also a general claim that most root plants were available throughout the year within the grassland areas (**etafeni**).

Wild fruits were said to occur seasonally and were found mainly in the veld. There was however a difference of opinion with regards to distance of the village from the veld, some considered it nearby (Mr Matshotyana), while some considered it far (Mr Tshoyo). Some fruits such as **umthombe**, **ingwenya**, and **isiphingo** were said to occur within the vicinity of the village and youngsters still gather their fruit (Mrs Mavata, Mr M Mavata, Mrs Camagu, Mr Magoswana). However one respondent noted that the **ingwenya** trees within the village no longer bore fruit (Mrs Camagu). There were claims that some wild fruits that were present in the past no longer occurred in the veld and that there were some which, though present, no longer yielded ripe fruit (Mr Magoswana, Mrs Camagu, Mrs Xamana). The later claim was substantiated by my observations in the field. We observed thickets of the star apple *Diopyros spp.* which had fruit on them but the fruit were all shriveled before they ripened, probably due to some disease or pest attack. Mr Magoswana believed that the reason why some wild fruits were no longer available and some no longer had ripe fruit was because the area was getting drier. Other people voiced similar views (Mrs Camagu and Z Nqondi *et al*).

5.5 Discussion and Interpretation

TRADITIONAL AND CURRENT ROLE OF WILD FOOD PLANTS IN THE DIET

Wild food plants were said by most participants to have played a supplementary role in the traditional diet. Participants however did acknowledge the popularity of some wild food plants, in particular **imifuno** and some favorite wild fruits (e.g. **ingwenya**, **isiphingo**). It was also stated that in the past when the young boys went herding cattle they relied heavily on wild food plants available in the veld as they did not have to come back home during the day. These two statements reveal that wild food plants may have had a greater role to play in the traditional diet of the community. Maundu (1995:148) warned of the usually unnoticed role of wild food plants when he stated that:

“Wild food plants are often used casually and during food shortages, rural communities and especially children depend on wild food for essential dietary components such as vitamin C. Some communities depend a great deal on wild fruit, vegetables and roots for food. Wild food plants play a very important role for pastoralists but this often goes unnoticed by researchers as much eating is done casually and away from home”.

I believe the community did not fully recognize the role of wild food plants in their diet as these were consumed casually. With regards to the young boys most of these food plants were indeed consumed away from home. Scudder (1962), in his study of the Gwembe Tonga, noted that during the year 1956-7 the Gwembe Valley families were heavily reliant on wild food plants. Lee (1979) also made a similar statement about the !Kung San of the Dobe area whom he said were reliant on wild vegetable foods as a primary component of their diet.

Indigenous food plants might not have played a very major dietary role in the traditional diet of the community of Tuku village. However they could have made a significant contribution in the supply of nutrients (see Chapter 6).

Imifuno were traditionally not eaten by man, however this had changed in the village. The introduction of modern vegetables might be one reason for the change (Mr Tshoyo). Another reason could be food shortages in the village which have forced men into eating **imifuno** to survive and their having tried to justify this by calling them **iyeza lovalo** (the courage giving herb).

CHANGE IN ROLE OF INDIGENOUS FOOD PLANTS IN THE DIET

Most participants noted that there was a decrease in the use of wild food plants within the village community. People were said to have diminished interest in them. Several factors were said to have influenced the decline in the use of wild food plants in the community. These were the low regard for indigenous foods, fear of the wild, dominance of western food, urbanization (electricity, stores, the pull of the city), change in lifestyles (family roles, entertainment), education, and the influence of climatic changes (rainfall) on availability of wild food plants.

Maundu (1995) stated similar causes for decline in use of indigenous food plants. Sibanda (1999:60) has claimed that:

“Many local people now treat their own culture, knowledge and tradition as inferior to the western knowledge system, and hence are not in a position to take this any further than just talk about it. Their own knowledge has suffered serious erosion over time because it was treated as inferior for so long. Most of the younger people now believe there is little value to their own knowledge and have fully embraced western knowledge system.”

This above quote, to me, sums up the reasons for the diminished use of indigenous food plants in the village. I will now proceed to discuss each factor in turn.

FEAR OF THE WILD

The current young generation is said to have developed a fear of wild animals, snakes and getting scratched in the veld. Bauman (1995) has claimed that each era of history has had its own fears. In the modern era the main fear was said to be uncertainty. The solution to this has been the regimentation of humankind through such institutions as the army, the factory and schools. Preservation of the social fabric was through the rule of law and order, which maintained uniformity of behaviour. In the postmodern era the 'regime of regimentation' has broken down. Technical progress has reduced the demand for labour and soldiering. This has brought back the fear of uncertainty. This fear is expressed in the uncertainty of 'self', i.e. self-inadequacy. Similarly in the case of the village the youth have been relieved from the regimentation and control of the elderly in the community, whereby they were forced to go and undertake such duties as herding cattle or collecting firewood in the veld. Relieved of such obligations they now have developed what Bauman (1995:115) terms an 'inventory of postmodern anxieties' in his essay 'A Catalogue of Postmodern Fears'. They are uncertain about what challenges the veld holds for them.

STIGMATISATION OF INDIGENOUS FOODS

The dependence of people on wild plants is said to largely reflect their usually low position in South Africa's social hierarchy and the lack of attention paid to the resources they use follows from this (Cunningham 1994). People tend to shy away from indigenous food plants for fear of being considered as poor. Mrs Camagu's statement above with regards to her favorite beverage highlights this. There is gradual absorption of the local people, from the higher classes at the top downwards to the peasants and the urban poor into new consumption habits of the colonialists which are often costlier than local ones but more fashionable (Goonatilike 1984). Petras (1997:187) has claimed that "Cultural imperialism in the name of 'self expression' tyrannizes Third World people fearful of being labelled 'traditional', seducing and manipulating them by money images of 'class modernity'". Our diet is as a result getting more globalised and homogenised and is losing its variety in what Goonatilike described as a 'hegemonising tendency' mainly influenced by a Western European culinary culture (1984:107). With regards to wild food plants, most of them have been replaced by western fruits and vegetables. Local

food plants are consequently vanishing from the diet and end up only being eaten by the poor who cannot afford more fashionable alternatives.

EDUCATION

Western education systems impact negatively on knowledge on, and appreciation of, indigenous food plants. Western knowledge has regarded indigenous knowledge as inferior (Sibanda 1999). Because there is no coverage of indigenous food plants in the formal school setting most of the younger people place little value in their own knowledge systems and have fully embraced western knowledge.

Detached from the local context by the education system, whatever knowledge they possess on indigenous food plants becomes non-applicable and maybe lost. This is the reason why I believe Mtshali (1994) and Ngwane (1999) claimed that the youth seemed no longer interested in indigenous knowledge. Ki-Zebro *et al* (1997) have claimed that modern school tends to rob students of their historic roots such that they are unable to speak naturally to their own mother i.e. loses links with their cultural background. The school is said to act as an ‘instrument of humiliation’(1997:157), destroying and downgrading the community way of life. These students are said to be instilled with

“... new alienating values, attitudes and goals which eventually drive them to gradually reject and despise their cultural and personal identity” (1997:159). Dressed with new identities and a false sense of superiority such students, alienated from the village, then leave the village for the cities where they become the producers and consumers of the modern world.

URBANISATION

Urbanisation is inevitably spreading even into rural communities and with it comes the decline knowledge and use of indigenous food plants. Fox and Norwood Young (1986) have claimed that city dwellers have less knowledge about wild food plants compared to their rural counterparts. The urban environment, with its array of supermarkets, offers a range of non-local food products from which the consumer can choose, at the expense of indigenous foods.

Time taken to prepare indigenous food and the distance from which it is collected were some factors said to influence the decline in the use of indigenous foods. The food processing industry is said to claim to be providing services to save the food preparer time and effort (Gussow *et al* 1984). Studies have proved however that while women spend less time preparing a meal at present they spend more time shopping for food, thereby spending almost the same time in food-related activities (Walker 1969

and Walker and Sanik 1978 in Gussow *et al* 1984). Perpetuation of this belief amongst consumers by the processed food manufacturers is through media advertising.

IMPACT OF THE MEDIA AND ADVERTISING

While there might still be communities relying on traditional diets, such communities are rapidly dwindling. Proportions of manufactured foods on the other hand are increasing due to advances in food technology (Streek 1970). Such foods are changing the eating habits of the southern African communities. Advertising has been extensively used by food manufacturers as a 'persuasive force' to bring about this change. People in the Third World are "...entertained, coerced, titillated to be modern, to submit to the demands of the capitalistic market"(Petras 1997:187). The media (vehicles) for advertisements are very wide, including newspapers, magazines, radio and television. Turner (1965 in Streek 1970:7) put the impact of advertising very clearly when he defined it as "the whip that hustles humanity up the road to a Better Mousetrap".

Marketing and advertising of industrially processed mass produced foods can have very far-reaching consequences. Products of trans-national corporations such as CocaCola or Kentucky Fried Chicken prepared to taste "finger-lickin' good" have spread to most parts of the world (Goonatilake 1984:107). The food industry has turned food from a satisfier of subsistence needs into a commodity, with people being turned from producers into consumers of processed foods (Gussow *et al* 1984:86). Bauman (1995:111) has described this transition in humankind as being from a 'purveyor of goods to sensation-gatherers'. The impact of such products on the poor can be quite detrimental. Goonatilake (1984) has claimed that malnutrition caused by women switching from breastfeeding to infant formulas or cases of children forgoing a meal to buy a costlier but more fashionable CocaCola have been well documented.

By being made to rely on the modern diet the capacity for communities to be self-sufficient and satisfied with local resources is being eroded and, consequently with it, comes poverty (Ndione *et al* 1997). Ndione *et al* have claimed that development (in this case in the food sector) brings along with it "...nothing but the avalanche of goods and the spectacle provided by their consumption. It is no longer enough to live, it is necessary to consume"(1997:369). Hillcoat and Janse van Rensburg (1998) have coined the term 'malconsumption' for this kind of consumption to reflect that, while people have to consume to stay alive, certain consumption patterns are not sustainable.

CHAPTER 6: THEY ARE SO WEAK THEY KEEL OVER IF YOU SHOVE THEM! -LINKS BETWEEN DIET AND HEALTH

In this chapter I will look at participants' perspectives on the links between the traditional diet, the modern diet and health and an analysis of the nutritional content of some wild food plants. I will explore in my discussion the current views with regards to diet and health and how they compare to those of the community.

6.1 Diet and Health

While the participants claimed that they never ate any of the wild food plants for health reasons, they did state that the traditional diet kept them healthy and long-lived compared to what the modern diet is doing for the youth (Mrs Mavata, Mrs Xamana, Mrs Camagu, Mr Sikontya, S Luvuno and N.Vuma, Mr M Mavata, Mr S Mavata, Mr Tshoyo, Mr Matshotyana, S Dingela). The elderly participants particularly lamented the modern diet for all the health problems reportedly afflicting the younger generations.

With regards to the claims that indigenous foods were not eaten for health reasons V Mavata *et al* said “We ate wild food plants because we were told that they were edible and because some had a sweet taste. We never ate them because we knew they contributed to our health, in fact we did not know of this health aspect.” Mr S Mavata supported this claim when he stated that when they were herding cattle most wild food plants were eaten to fill up the tummy and for their taste rather than for health purposes.

Amongst the elderly there was a recurrent view that the traditional diet (comprising wild food plants) kept them healthy and long-lived. Mr Sikontya claimed that “During the time we grew up we ate a lot of wild food plants (**ukutya kwendalo**). We were very healthy and illness and death were of very rare occurrence. The people who usually died in the village were very old people. Nowadays death is so common, even amongst the youth. It is this modern foods that they eat, beef stock, aromat, spices and others that cause this.”

The perceived (suggested) links between a modern diet and postulated health problems among the youth were well expressed by Mrs Camagu in the following quote: “This modern food that our children so much like is the main cause of too many illnesses. These young children of nowadays are so weak that when you shove them they just keel over very easily like sacks. They now rely on doctors,

pharmacies and clinics for pills and medicine which we hardly used in our time”. Mr Matshotyana supported this claim when he stated that “The youngsters of nowadays grow like broilers. They grow and age quickly and die young like their white counterparts from whom they have inherited the modern diet. I have worked for a number of white people on the farms who were of my age or even younger. Most have since died and their kids are also dying after them. But look at me, I am still alive, walking and healthy despite my age.”

Some participants (Mr S Mavata, S Dingela) gave very good insights into the problems of the modern diet. Mr S Mavata, with regards to the processing of foods in the modern diet, stated the following about maize: “When they process maize (**umbona**) to make mealie-meal they take out the yellow part (germ) of the grain. Without the germ the refined mealie-meal is not as nutritious (**ayiselakho ukutya okondla umzimba**). Mr Mavata also claimed that modern diet is rich in fat, sugars and starch. Other participants (Mrs Xamana, Mrs Camagu) also made this claim. What Mr Mavata was also wary about was the shelf life of some packaged foods which he said lasted so long on the shelves that he was doubtful of their still being fresh.

Mr M Mavata was suspicious of the ingredients of some processed foods which he thought could be detrimental to health. He made the following statement “I am not sure about the bright colours of some of these packaged foods. They are just made to entice the eye of the consumer. Some of the flavours of some foods are also not original”. S Dingela shared similar sentiments about food additives and he talked about them as ‘chemicals’ added to the food.

Most of the elderly participants spoke strongly against refrigerating foods over long periods of time, particularly frozen chicken whose bones were said to become powdery. Mr Matshotyana vowed never to eat chicken sold from the stores, saying he only ate chicken reared in the village.

6.2 Nutritional Composition of Some Wild Food Plants

Twelve wild plants used as food in the village were analyzed for their nutritional composition. As discussed in section 2.6 these were chosen because of their availability during the period of the research. The plants analysed were the fruits *Carissa bispinosa subsp. bispinosa*, *Ficus capensis*, *Ficus craterostoma*, *Harpephyllum caffrum* and *Scutia myrtina*; the root/tuber plants *Bergeranthus multiceps*, *Cussonia spicata* and *Eriospermum parvifolium*; and the **imifuno** *Bidens pilosa*, *Portulaca afra*,

Sonchus oleraceus and *Urtica urens*. The analysis was done for presence of vitamins (B, C and D), proteins, minerals (iron, zinc) and sugars. The detailed results for these tests are tabulated in Appendix 3 (Table I & II).

Vitamin B was undetected in all samples with the method used. For vitamin C only four plants, *Cussonia spicata*, *Ficus capensis*, *Portulaca afra* and *Scutia myrtina*, were tested as material could not be collected in adequate quantities for the other samples. On these species the effect of different cooking methods, i.e. boiling, steaming, microwave cooking and baking, were investigated. The fruit *Scutia myrtina* as well as the edible root plant *Cussonia spicata* were found to have high vitamin C content. Of the different cooking methods minimal vitamin loss was recorded from baking and microwave cooking. In the boiled and steamed samples a considerable percentage of vitamin C was recovered from the boiling or steaming water respectively. Vitamin D was found to be present in all the **imifuno** tested but was absent from all the other plants except for the fruit *Harpephyllum caffrum*.

In the tests for minerals iron was found to be highest in root/tuber plants, followed by **imifino** and lowest in the fruits. Zinc content was found to be highest in the **imifuno** plants. Protein was found to be highest in the **umfuno** *Urtica urens*. It was high in the root plants *Bergeranthus multiceps* and *Cussonia spicata* and the fruits *Carissa bispinosa var bispinosa* and *Scutia myrtina*.

Sugar concentration, in this case the combined concentration of glucose, fructose and maltose, was found to be highest in fruits within the sample. Amongst the fruits *Scutia myrtina* had the highest content followed by *Carissa bispinosa*, *Harpephyllum caffrum* and *Cussonia spicata* respectively. The root plant *Eriospermum parvifolium* had the second highest sugar concentration amongst all the samples.

6.3 Discussion and Interpretation

WILD FOOD PLANTS AND HEALTH

There was general claim by participants that wild food plants were not eaten for health reasons. This, I think, would be expected of any rural community as the priority is to fulfil the hunger rather than to make health considerations. The participants, particularly the elderly, however as an afterthought suggested an appreciation of the positive health aspects of the wild food plants when they stated that the traditional diet kept them strong and healthy. This traditional diet included wild food plants.

Several writers (Gelfand in Tredgold (1986), Tredgold 1986, Wild 1972, Fox and Norwood Young 1982, Gomez 1988, Maundu 1995, Mbangata et al 1984) mentioned the nutritional value of wild food plants. The study on the nutritional content of some of the wild food plants available in Tuku A Village vicinity confirms this. Most wild fruits appeared to be rich in vitamin C which is an important antioxidant in the body and helps boost the body's immune system (Holford 1998). In nature the main source of vitamin C is from fruits and vegetables (Fox and Cameroon 1976). Citrus fruits are highly favoured for supplying vitamin C. The average content of vitamin C in citrus fruits is roughly 50mg/100g, i.e. 5mg/10g (Fox and Cameron 1976), which is exceeded by all the plants tested in the sample with the exception of *Ficus capensis*. Wild food plants are therefore a good source of vitamin C. Cooking was seen to reduce the content of vitamin C. This is supported by Fox and Cameron (1976). It appeared however that baking and microwave cooking caused the least loss in vitamin C from cooking. With the microwave this might be due to the shorter cooking times. As for baking this could be related to the fact that there is no water involved. Boiling and steaming caused considerable reductions in the vitamin C content in the food. Most of this was recovered in the cooking or steaming water. One can conclude that if food should be boiled or steamed therefore this should be for a short time period and that the vegetable stock (cooking or steaming water) should not be discarded.

Most **imifuno** were found to contain Vitamin D. With the method used however it was not possible to determine the content of vitamin D in the samples. Vitamin D is required for strong bones and teeth and is almost exclusively found in animal foods. It is however very limited in its distribution and because of this there is more danger of vitamin D deficiency than of any other vitamin (Fox and Cameron 1976).

The content of the mineral iron was found to be highest in root/tuber plants and also considerably high in **imifuno**. The high concentration in the roots could be due to the fact that roots actually have the function of absorbing minerals from the soil, in which iron is a common mineral. Vegetable matter is one of the main sources of iron, which is a component of haemoglobin in the red blood cells that is responsible for transportation of oxygen around the body (Fox and Cameron 1976). The iron requirement in the body is in trace amounts though it is needed regularly (Fox and Cameron 1976). **Imifuno** were found to be a source of the mineral zinc. Zinc is important in the body as an antioxidant and for body immunity (Holford 1998) and is required in trace quantities (10-20 mg/day) though it is an essential trace element (Fox and Cameron 1976). This amount can be met by the regular consumption of **imifuno**.

Protein availability was found to be very variable, with some plants in the different food categories exhibiting high concentrations. The **umfuno** *Urtica urens* was seen to contain the highest protein content. Protein is required for growth and tissue repair and its main source is animal tissue, though certain essential amino acids are derived from plants (Fox and Cameron 1976). Some plants are very rich in protein, for example soya beans which contains all the essential amino acids (Fox and Cameron 1976), and can be used as main protein source for communities where meat is too expensive.

Sugar, a main source of energy, was found to be highest in fruits. This was expected since most of them tasted quite sweet. The root plant *Eriosema parvifolium*, which is eaten raw and does taste sweet, also had a high sugar concentration within the sample. It should be noted that the sugar test was for combine sugars including disaccharide or complex sugars which do not have bad effects on health as does glucose.

While literature hinting on the nutritional value of wild food plants does exist, little work exists on the actual nutritional composition of such wild food plants. In order for wild food plants to be better appreciated, more work should be undertaken to determine their nutritional composition so that they can be compared with widely cultivated food crops.

MODERN DIET AND HEALTH

Most of the elderly participants lamented the modern diet for health problems that they claim the current young generation has. This overall blame on the modern diet for health problems might be a way of romanticizing the past (Sibanda 1999). Not all illnesses can be attributed to one's diet. Interaction amongst people through increase trade and transport access has brought with it epidemics through the introduction of infectious diseases into areas where they were previously non-existent. Accidents and exposure to damaging pollutants and other substances also have their own toll. The claims though by Mr Matshotyana that modern diet makes the youth 'grow like broilers' (in reference to battery-fed chickens) and by Mrs Camagu that the youth are so weak that they 'keel over when you push them' seem to be substantiated by Goonatilake (1984). Goonatilake has claimed that changing habits in food culture to western food resulted in a physical change i.e. an increase in the height of the average Japanese, however their longevity and resistance to cardiovascular disease were negatively affected.

The modern diet has however been linked to many forms of ill health. As noted by the same participants, a modern diet is usually rich in fats and sugars and is low in fibre (Abraham 1991). Fats are linked with coronary heart disease. Abraham (1991) stated that sugar is the main contributory cause of dental caries as well as coronary heart disease. Low fibre diets affect bowel function and are associated with cancers of the bowel and colon, constipation and acute appendicitis. Consumption of a large quantity of sugar can provide nearly all the body's energy requirements. When sugar is habitually consumed it inhibits the production of starch and fibre converting enzymes and as result the body finds it difficult to digest starch and fibre foods which therefore become mere vehicles accompanying the sugar (Hobhouse 1999). Malnutrition, vitamin and mineral deficiency accompanied by sugar addiction can then ensue.

Low fibre content of the modern diet is a result of the food refining process which gets rid of the roughage. Mr S Mavata correctly claimed that refining and processing of maize lowers its nutritional value. Abraham (1991) described a similar process in the refining of wheat to make white bread. The bran and the germ are removed in this process, eliminating roughage, protein and vitamins from the end product, thus rendering it less nutritious. Removal of the bran results in loss of essential vitamins (Hall 1974). From my own observations it is currently fashionable in Zimbabwe (and I believe South Africa) to purchase white bread because it is more expensive compared to brown bread i.e. it is a status symbol. However people do not realize that such bread contributes less nutrients to their families. This trend had also been observed in ancient Rome where white bread was for the elite and in the United States obsession with white bread has led to manufactures adding harmful chemicals to whiten the bread and to increase its shelf life (Hall 1974).

One can argue the case for the modern diet in terms of its provision of minerals, vitamins, major nutrients and fibre content. I believe however that careful considerations for the inclusion of all nutritional components depend on knowledge about the diet as well as accessibility and affordability of the necessary foods. In my observations of the types of meals eaten in the village the vegetable and particularly the fruit component of most families' diet was very minimal. Most of the meals provided mainly starch and protein. Fruits were hardly ever included in the diet and were not available even from the local shops. Thus while the diet was indeed changing, the nutritional role played by wild food plants (in the provision of vitamins, mineral salts, etc.) had not been adequately catered for by the modern diet. Manufacturers of industrialised foods are said to provide food items which are modified beyond comprehension of the consumer, making it difficult to make wise choices with regards to providing a

balanced diet (Gussow *et al* 1984). Comparatively in traditional cultures, where the principal foodstuffs are known, malnutrition usually arises from food shortages rather than from bad choices.

The dietary shift to western food can also impact negatively on the health of indigenous communities as was documented by Balick and Cox (1996) in a study of the (impact of dietary change on the) River Pima tribe of the Sonora Desert of Arizona. The tribe, who traditionally survived on gathering wild plants, began experiencing a high rate of diabetes (the highest in the world) when they shifted to western food. Upon investigation it was discovered that they had genetically adapted to the low insulin production resulting from their traditional diet, which had a high fibre and low sugar content. Insulin is the hormone secreted in the body in response to high blood sugar levels to stimulate the metabolism of sugars in the body (i.e. their conversion either to energy or glycogen and fat for storage), whose level is usually high after a meal. The diet of the River Pima tribe was rich in slowly digested carbohydrates, which resulted in a slow rise in sugar levels in the bloodstream after a meal and their low insulin response. The change to a sugar-rich diet and a sedentary lifestyle resulted in obesity and diabetes.

Concern about additives was also registered from some participants. Abraham (1991) elaborated on the hazardous aspects of food additives such as colourings and flavourings which are used to enhance the quality of the product. Colourings are used to create an illusion of freshness in synthetically produced foods and processed food which would naturally lack the colour. Flavourings are used to reinforce the natural flavour of a product, to provide distinctive flavours to otherwise tasteless products and to conceal unpleasant flavours in a product. In natural food colour and flavour are natural means to tell the freshness and suitability of food for consumption (Hall 1974). However modern processed food is made to imitate these naturally occurring aspects of food, i.e. to become a surrogate for the senses through the use of chemical additives. Chemicals used in such processes usually have hazardous effects on health. Chemicals such as agene (nitrogen trichloride) and chlorine dioxide used to bleach flour to make white bread, nitrites to keep meat red, and coal-derived synthetic food dyes have been found to be highly toxic to the human body (Hall 1974).

Prolonged periods of food refrigeration were believed to affect food quality by most of the elderly. While freezing food stops microbial growth, it does not stop but rather slows down physical and biochemical reactions that bring about food deterioration (Shafuiv Rahman 1999). Enzymatic and non-enzymatic changes continue at much slower rates during frozen storage. Time therefore has an effect on the loss of quality of frozen foods. Refrigeration is also said to cause color (browning) and flavor

changes as well as vitamin loss in fruits and vegetables. Loss of colour and flavour is said to be an indicator (through sensory attributes) of vitamin loss (Sahfuiiv Rahman 1999). Freezing is said to cause destruction of vitamin C.

Complaints raised in the village about the quality of battery-fed frozen chicken had been raised earlier on by white South African housewives in the sixties who claimed that such chicken were watery and tasted fishy (Streek 1970). Battery-fed chicken are part of the genetically modified breed of animals and plants, in this case hormonally modified to mature in a short period of time. The effects of eating such foods are beginning to show as similar growth trends are occurring in humankind due to hormonal imbalances resulting from consuming such foods. Studies in the United States revealed that girls are showing signs of sexual maturity at the age of nine, while in Britain they do so at the age of ten (Holford 1998).

SECTION 3

This section is the concluding discussion which highlights some key points of the study which may have implications for environmental education and includes some environmental education recommendations.

CHAPTER 7: CONCLUDING DISCUSSION

7.1 The Place of Indigenous Knowledge in Education

Community knowledge on locally available wild food plants abounds in Tuku Village. The evidence that the youth in the village have acquired this knowledge provides hope that this knowledge may continue to exist in the community. However continued use of these wild food plants is not as promising, such that one can picture a future scenario where wild food plants will just be stories told about what people used to eat in the past (Sibanda 1999).

It should however be noted that western knowledge systems have actually grown by tapping from other knowledge systems (Nader 1996), as can be exemplified by the growth of western medical and pharmaceutical know-how from the cures of 'primitive' societies.

The dominance of the western knowledge paradigm is perpetuated in southern Africa by our westernised education system. Very little reference, if any, is made of indigenous plants in the various school curricula for example. The agriculture syllabi, on the topic of fruits, use exotic examples. The food and nutrition classes focus on the dietary importance of domesticated vegetables at the expense of indigenous ones. This applies across most subject disciplines. Eisner (1985: 107), in his discussion of the three curricula that all schools teach, defined what schools do not teach as the 'null curriculum', i.e. "...the options that the students are not afforded, the perspectives they may never know, much less able to use, the concepts and skills that are not part of their intellectual repertoire". What this kind of education does in rural community settings is to provide 'educated' graduates who are poorly fitted to the local context in that their knowledge is not practically applicable to everyday community life. Henderson (1991: 16) recounted a story about Iroquian Indian youth who had received the so-called best formal education of the times but were good for nothing when they came back to their community as they could not "hunt or lead ceremonies and did not know their duties within the family and community or their responsibilities to the land." Western education in African contexts also denies the learner the ability to bring into the classroom his/her own experiences.

I recommend that educational approaches should be contextual and should encourage the learners to bring in and share their experiences in the learning situation. Even students that are not brilliant in the classroom situation can be given an opportunity to enhance their self esteem, for example by taking

excursions into the veld where they can participate by pointing out these wild food plants. The need to contextualise the education curricula to suit local community settings was also expressed by Mokuku and Janse van Rensburg (1997:31) when they claimed that colonial school curricula “weaned the child from his roots and failed to adequately prepare learners to survive in their own environment”.

Elderly community members possess a vast wealth of indigenous knowledge acquired over generations and hence are repositories of this knowledge, as illustrated in this study as well as by Mtshali (1994) and Ngwane (1999). However the status of such knowledge is being overwhelmed by the dominant western knowledge, as has the role of the elderly as community educators. Rahnema (in Ki-Zerbo *et al* 1997:159) stated that “ The old days described by Julius Nyerere, when ‘every adult was a teacher’ were over. Now only those certified by the school system, according to its self-devised criteria, had the right to teach...” The school system has thus robbed the elderly of their previous role. In educational settings such as the school, the accumulated knowledge of the elderly should be drawn upon to enrich the learning environment and to enable their participation in educational processes. Ngwane (1994) and Masuku (1999) have also expressed this view. This allows the bringing together of different knowledge systems in education, thereby reducing the domination of one system of knowledge.

7.2 The Dynamic Nature of Indigenous Knowledge

During the process of drawing up an inventory of indigenous food plants in the village I discovered that most of the **imifuno** (wild spinach or potherbs) were what would be termed ‘weeds’ in modern agricultural terms. Some of these ‘weeds’ are of cosmopolitan distribution and thus are not necessarily of indigenous origin. This led me to redefine my reference to food plants as ‘wild’ (i.e. undomesticated) instead of ‘indigenous’. What this also elucidated was the fact that the local community had incorporated these plants as ‘indigenous’ as they did not differentiate between them and other food plants of indigenous origin in their responses to my questions. It is highly probable that some of these plants may have been introduced into the area at the same time as, and with some of, the cultivated crops. That people have given them local names and incorporated them as food plants indicates the adaptive nature of indigenous knowing, in this case to the benefit of the community. A similar realisation was made with regards to some cultivated crops such as maize, which most local communities in southern Africa strongly believe is indigenous despite its foreign origin (O’Donoghue 1998, pers. comm.). This discovery signifies the dynamism of indigenous knowledge which, I recommend, should influence the definition of indigenous knowledge. Definitions by the Biodiversity

Support Program (1993), Le Roux (1999), and Kawagely and Barnhardt (1999) recognise this adaptive nature of indigenous knowledge systems.

7.3 The Role of Wild Food Plants

A question that arises from this study is the future role of wild food plants in the diet. Are they really of value considering that there are readily-available modern alternatives? I believe wild food plants do have a role to play in future and there are several factors that allude to this.

Firstly, the current widely cultivated food crops came about as result of discoveries by primitive societies (Fox and Norwood Young 1982). These plants were of indigenous origin to these societies. Presently the security of such crops from devastating disease blights comes from resistant genetic material from wild relatives (Shiva 1995). Wild food plants are therefore indirectly responsible for our current food security.

Secondly, there is evidence that wild food plants directly provide food security for rural communities. Certain wild food plants are lowly regarded during the good years but on the onset of food insecurity, such as famines and drought, these food plants are sought after and become the mainstay of community survival (Lee 1979, Reynolds 1989).

A third aspect of the continued role of wild food plants is their potential as food crops of the future. While indigenous food plants have generally been regarded as ‘the poor people’s plants’ (Kochhar and Singh 1989:559), that attitude seems to be changing as some are playing an increasingly dominant role in the diet. A good example is the current role of soya beans which had been until recently relegated to the ‘poor man’s plant’ category. Realisation of soya beans’ nutritional value and cultivation potential led to its inclusion in the group of widely cultivated crop plants. In southern Africa plants such as the marula *Sclerocarya birrea* are now commercially exploited. The marula is used in the commercial manufacture of a liqueur. Herbal teas are also becoming increasingly popular, competing with or replacing the caffeine-rich cultivated tea and coffee. Examples are commercialisation of Rooibos tea in South Africa and Lippia tea in Botswana. In Zimbabwe the Department of Research and Specialist Services under the Ministry of Agriculture is currently experimenting on varieties of small grain cereal crops for drought areas and on the indigenous, protein rich Bambara nut *Vigna unguiculata*.

Back at home I have observed that my mother has a specific patch of land, fertile in that it was made by spreading a termite mound, which only she and the girls were permitted to cultivate. On this patch she grows most of her indigenous crops such as curcubits, sweet reed, and some wild spinach of which I recall wild okra *Corchorus olitorious*, *Cleome gynandra* and *Cleome monophylla*. The mature plants were not cut down but were allowed to flower and seed to provide new crop each growing season. The main reason we (men) were not allowed in it was because we would not notice the wild spinach and thus would decimate them while cultivating. It dawned on me recently that I was observing the processing of gradual selection and integration of wild plants into agriculture. The development of African Agriculture through such innovations may have been thwarted by the introduction of foreign models of agriculture (Alverson 1984 in Cleveland 1990) and they need to be revamped in our current concerted efforts towards developing ecologically sustainable agriculture.

7.4 Indigenous Food Plants and Plant Biodiversity Conservation

Wild food plants are rarely exploited commercially and therefore their use poses no threat to plant biodiversity. Indeed in some instances such plants are spared when clearing land for agricultural activities as observed by Campbell (1985 in Gomez 1989) with regards to favoured wild fruit trees in communal areas of Zimbabwe. I made similar observations during this study. Most villagers spared fruit trees around their homesteads as well as **imifuno** in their gardens.

What the study did not look into was the various conservation practices, if any, performed in the village to protect wild food plants. This is an area that warrants future investigation.

7.5 Indigenous Food Plants as Alternative Sources of Nutrition

The modern diet can provide all the nutritional requirements to any diet-conscious person. While there is a possibility that rural community members may know the constituents of a balanced diet, certain foods tend to take precedence and are deemed as the basic components of a meal. As mentioned by community members in the village, wild food plants were not eaten for their nutritional role, but rather to satisfy hunger and for their taste. Bulk may have been the main priority rather than nutritional composition of a meal. Besides the above reason, some rural people may be very well aware of their dietary requirements, however availability and cost of certain foods may be inhibiting. Nutritionists and health workers should therefore be informed of the nutritional value of locally available wild food plants, which the community can harvest at no cost. They in turn should educate the community of

these alternative sources of nutrition. The communities should also be educated about how best to prepare these and preserve their nutritional value. Vitamin C for example is lost from plants when it is boiled or steamed and some of it is retained in the boiling or steaming water. Communities should therefore be educated to boil foods for short periods and to use the remaining vegetable stock (cooking water) rather than throw it away. With regards to health requirements, some refined foods are not very nutritious but are fashionable, such as preference of white bread to the healthier brown bread. Communities have to be educated of these differences so that they can make wise decisions as to nutritional value of the food that they will choose to consume. Continued efforts should be made to investigate the nutritional value of wild food plants for the benefit of communities in which such plants occur.

7.6 Conclusion

Indigenous knowing is still evident in some rural communities like Tuku village. The value of such knowing should be supported through our formal education systems, which should embrace different kinds of knowing. Within indigenous communities, the value of indigenous knowing and its relevance to local settings should be revived as this can be beneficial to them. In the case of this study the community could benefit from the use of locally and freely available health giving foods, which will also help them preserve their cultural pride. The nutritional value of indigenous food plants needs to be further investigated so as to determine how they compare nutritionally with the modern diet. The use of indigenous food plants also has the potential, through selective conservation and domestication, to contribute to the maintenance of plant biodiversity. Traditional conservation practices related to indigenous food plants are a dimension of indigenous knowing that can be researched into.

REFERENCES

- Abraham, J. (1991). *Food and Development. The Political Economy of Hunger and the Modern Diet*. London: World Wide Fund for Nature & Kogan Page Ltd.
- Alcorn, J.B. (1995). Ethnobotanical knowledge systems- a resource for meeting rural development goals. In Warren, D.M., Slikerveer, L.J. and Bronksha, D. (eds) 1995. *The Cultural Dimension of Development. Indigenous Knowledge Systems*. London: Intermediate Technology Publications.
- Bauman, Z. (1995). *Life in Fragments. Essays in Post-modern Morality*. Oxford & Cambridge: Blackwell.
- Balick, M.J. and Cox, P.A. (1996). *Plants, People and Culture. The Science of Ethnobotany*. New York: Scientific American Library.
- Berg, B.L. (1998). *Qualitative Research Methods for the Social Sciences*. Needham Heights: Allyn & Bacon.
- Biodiversity Support Program (1993). *African Biodiversity. Foundation for the Future*. Beltsville: Biodiversity Support Program.
- Booth, F.E.M. and Lucas, G.L.I. (1989). The role of botanic gardens in economic botany. In Swaminathan, M.S. and Kochhar, S.L. (eds.) 1989. *Plants and Society*. London & Basingstoke: Macmillan Publishers.
- Cantrell, D.C (1993). Alternative paradigms in environmental education research: The interpretive perspective. In Mzarek, R. (ed.) 1993. *Paradigms in Environmental Education Research*. Lethbridge: NAAEE.
- Cleveland, D.A. (1990). Development alternatives and the African food crisis. In Huss-Ashmore, R. and Katz, S. H. (eds.) 1990. *African Food Systems in Crisis. Part Two: Contending with Change*. New York, Philadelphia, London, Paris, Montreux, Tokyo and Melbourne: Gordon & Breach Science Publishers.

- Cohen, L. and Manion, L. (1989). *Research Methods in Education*. London & New York: Routledge.
- Cunningham, A.B., de Jager, P.J. and Hansen, L.C.B. (1992). *The Indigenous Plant Use Programme*. Pretoria: Foundation for Research Development.
- Cunningham, A. B. (1994). Combining skills: participatory approaches in biodiversity conservation. In Huntley, B. J. (1994). *Botanical Diversity in Southern Africa. Proceedings of a Conference on the Conservation and Utilization of Southern African Botanical Diversity, Cape Town, September 1993*.
- Cunningham, A.B. (1995). Wild plant use and resource management. In Bennum, L.A., Aman. R.A. and Crafter, S.A. 1995. *Conservation of Biodiversity in Africa. Local Initiatives and Institutional Roles. Proceedings of the Conference held at the National Museum of Kenya, September 1992*.
- Dakora, F.D. (1996). Using indigenous knowledge to increase agricultural productivity in Africa. In Norman, H., Snyman, I. and Cohen, M. (eds) 1996. *Indigenous Knowledge in Southern Africa*. Pretoria: Human Research Council.
- Denzin, N.K. and Lincoln, Y.S. (1994). *Handbook of Qualitative Research*. Thousand Oaks, London & New Delhi: Sage.
- De Vos, A. S. (ed.) 1998. *Research at Grassroots*. Pretoria: J.L. van Shaik Publishers.
- Eisner, E. (1985). *The Educational Imagination*. New York: Macmillan.
- Fleuret, A. (1979). Methods of evaluation of the role of fruits and wild greens in the Shamba diet: A case study. *Medical Anthropology*, III, 334-349.
- Fox, B.A., and Cameron, A. G. (1976). *Food Science- a Chemical Approach*. London, Sydney, Auckland & Toronto: Hodder and Stoughton.
- Fox, F.W., Norwood Young, M.E. (1982). *Food From the Veld. Edible Wild Plants of Southern Africa*. Craighall: Delta Books.

- Gelfand, M., Mavi, S., Drummond, R.B., and Ndemera, B. (1985). *The Traditional Medical Practitioner in Zimbabwe. His Principles of Practice and Pharmacopia*. Gweru: Mambo Press.
- Gilges, W. (1955). *Some African Plants and Medicines of Northern Rhodesia*. Livingstone: The Rhodes Livingstone Museum Occasional Paper 2.
- Gomez, M.I. (1988). *A Resource Inventory of Indigenous and Traditional Food in Zimbabwe*. Harare: University of Zimbabwe Publications.
- Goonatilake, S. (1984). Food culture and human rights. In Eide, A., Eide, W.B., Goonatilake, S., Gussow, J. and Omawale (eds) 1984. *Food as a Human Right*. Tokyo: United Nations University.
- Gussow, J., Muchena, O., Eide, W.B. (1984). Women and food – equity and development? In Eide, A., Eide, W.B., Goonatilake, S., Gussow, J. and Omawale (eds) 1984. *Food as a Human Right*. Tokyo: United Nations University.
- Hall, R.H. (1974). *Food for Nought. The Decline in Nutrition*. Hagerstown, Maryland, New York, Evanston, San Francisco & London: Harper & Row.
- Henderson, M. (1996). A Mohawk vision of education. *Green Teacher*, 49, 15-18.
- Hillcoat, J. and Janse van Rensburg, E. (1998). Consuming passions: Educating the empty self. *Australian Journal of Environmental Education*, Vol. 14, 57-63.
- Hobhouse, H. (1999). *Seeds of Change. Six Plants that Transformed Mankind*. London: Papermac.
- Holford, P. (1998). *100% Health. The Drug Free Guide to Feeling Better, Living Longer and Staying Free from Disease*. London: Piatkus.
- International Council for Adult Education (1992). Some principles of environmental education for equitable and sustainable societies. Course Notes, Theme II, Rhodes University Certificate/Goldfields Participatory Course in Environmental Education, Grahamstown.
- Irwin, P (1999). An Introduction to Conducting Surveys and to the use of Questionnaires. Unpublished Course Notes, Research Methodology Course, Department of Education, Rhodes University, Grahamstown.

Kawagely, A.O. and Barnhardt, R. (1999). Education indigenous to place. Western science meets native reality. In Smith, G. and Williams, D.(eds) 1999. *Ecological Education in Action*. New York: State University of New York.

Ki-Zerbo, J., Kane, C.H., Archibald, J., Lizop, E. and Rahnema, M. (1997). Education as an instrument of cultural defoliation: A multi-voice report. In Rahnema, M. and Bawtree, V. (eds) 1997. *The Post Development Reader*. London & New Jersey: Zed Books.

Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research participants. *Sociology of Health & Illness*, Vol. 16 No. 103-121.

Kochhar, S.L. and Singh, B.M. (1989). Plant resources for AD 2001. In Swaminathan, M.S. and Kochhar, S.L. (eds) 1989. *Plants and Society*. London & Basingstoke: Macmillan Publishers.

Kokowaro, J.O. (1976). *Medicinal Plants of East Africa*. Kampala: East African Literature Bureau.

Koopowitz, H. and Kaye, H. (1990). *Plant Extinction. A Global Crisis*. London: Christopher Helm.

Lalonde, A. (1993). African indigenous knowledge and its relevance to sustainable development. In Inglis, J.T. (ed.) 1993. *Traditional Ecological Knowledge: Concepts and Cases*. Ottawa: International Program on Traditional Ecological Knowledge.

Le Compte, M.D. and Preissle, J. (1993). *Ethnography and Qualitative Research Design*. London: Academic Press.

Le Roux, K (1999). Ethically indigenous: Articulating indigenous knowledge in/as environmental education processes. In O'Donoghue, R., Masuku, L., Janse van Rensburg, E. and Ward, M. (eds) 1999 *Indigenous Knowledge in/as Environmental Education Processes. EEASA Monograph No.3*. Grahamstown: EEASA.

Macleod, F. (1999, 20-26 August). Call for Ban on Illegal GM Crops. *Mail and Guardian*, p.5.

Martin, A.R.H. and Noel, A.R.A. (1960). *The Flora of Albany and Bathurst. Incorporating a General Survey and an Annotated Check List of the Vascular Plants*. Grahamstown: Rhodes University, Department of Botany.

Masuku, L. S. (1999). The Role of Indigenous Knowledge in/for Environmental Education: The Case of a Nguni Story in the Schools Water Action Project. Unpublished masters thesis, Rhodes University, Grahamstown.

Maundu, P. (1995). Indigenous knowledge as a means of conserving biodiversity at the community level: The Indigenous Food Plants Programme. In Bennun, L.A., Aman, R.A. and Crafter, S.A. (eds) 1993. *Conservation of Biodiversity in Africa. Local Initiatives and Institutional Roles*. Nairobi: Centre for Biodiversity, National Museums of Kenya.

Mbangata, M., O'Connell, M. C. and Johnson. C.T. (1984). *Imifino. English Edition*. Umtata: Transkei Appropriate Technology Unit.

Mokuku, T. and Janse van Rensburg, E. (1997). Reflecting on socially transformative environmental literacy for Lesotho. *Southern African Journal of Environmental Education*, 17, 31-39.

Mtshali, C.S. (1994). An Investigation of Environmental Knowledge among Two Rural Black Communities in Natal. Unpublished masters thesis, Rhodes University, Grahamstown.

Nader, L. (1996). Anthropological inquiry into boundaries, power and knowledge. In Nader, L (ed.) 1996. *Naked Science. Anthropological Inquiry into Boundaries, Power and Knowledge*. New York & London: Routledge.

N'Dione, E.S., de Leener, P., Perier, J., Ndiaye, M. and Jacolin, P. (1997). Reinventing the present: The Chodak experience in Senegal. In Rahnema, M. and Bawtree, V. (eds) 1997. *The Post Development Reader*. London & New Jersey: Zed Books.

Ngwane, M.S. (1999). Socio-Cultural Factors That Have Contributed to the Decrease of Plant Species in the Eastern Cape: A Case Study of Etyeni Village, Tsolo, Transkei. Unpublished research paper, Rhodes University, Grahamstown.

Petras, J. (1997). The new cultural domination by the media. In Rahnema, M. and Bawtree, V. (eds) 1997. *The Post Development Reader*. London & New Jersey: Zed Books.

Rodin, R.J. (1985). *The Ethnobotany of the Kwanyama Ovambos*. Missouri: Missouri Botanical Gardens.

- Ruddle, K. (1993). The transmission of traditional ecological knowledge. In Inglis, J.T. (ed.) 1993. *Traditional Ecological Knowledge: Concepts and Cases*. Ottawa: International Program on Traditional Ecological Knowledge.
- Shafuiv Rahman, S. (1999). Food preservation by freezing. In Shafuiv Rahman, S. (ed.). 1999. *Handbook of Food Preservation*. New York & Basel: Marcel Dekker.
- Shiva, V. (1991). Biodiversity, biotechnology and profits. In Shiva, V., Anderson, P., Schuking H., Gray, A., Lohman, L. and Cooper, D. 1991. *Biodiversity. Social and Ecological Perspectives*. London & New Jersey: Zed Books.
- Shiva, V. (1995). Biotechnological development and the conservation of biodiversity. In Shiva, V. and Moser, I. 1995. *Biopolitics. A Feminist and Ecological Reader on Biotechnology*. London & New Jersey: Zed Books.
- Schurink, W.J. (1998). Participant Observation. In De Vos, A.S. (ed.) 1998. *Research at Grassroots*. Pretoria: J.L. van Schaik Publishers.
- Sibanda, B. (1999). CAMPFIRE: Tonga cosmovision and indigenous knowledge. In O'Donoghue, R., Masuku, L., Janse van Rensburg, E. and Ward, M. (eds) 1999 *Indigenous Knowledge in/as Environmental Education Processes. EEASA Monograph No.3*. Grahamstown: EEASA.
- Slikerveer, L.J. (1995). Indigenous knowledge systems in East Africa: Retrieving past and present diversity for future strategies. In Bennun, L.A., Aman, R.A. and Crafter, S.A. (eds) 1993. *Conservation of Biodiversity in Africa. Local Initiatives and Institutional Roles*. Nairobi: Centre for Biodiversity, National Museums of Kenya.
- Streek, F.E. (1970). Advertising in the Food Industry in South Africa. Unpublished masters thesis, University of South Africa.
- Tallantyre, A.C. and Goode, P.M. (1975). A Preliminary study of food plants of the west Nile and Madi districts of Uganda: The utilisation of leaves and fruits of local mainly indigenous plants in supplementing the staple foods. *East African Agricultural Journal.*, XL, 233-255.
- Tredgold, M.H. (1986). *Food Plants of Zimbabwe*. Gweru: Mambo Press.
- UNESC-UNEP (1992). UNCED the Earth Summit. *Connect*, Vol. XVII, NO2, 1-7.

Van Wyk, B., Van Oudtshoorn, B. and Gericke, N. (1997). *Medicinal Plants of South Africa*. Arcadia: Briza Publications.

Walters, M. and Hamilton, A. (1993). *The Vital Wealth of Plants. WWF and the Conservation of Plants*. Gland: World Wide Fund for Nature.

Warren, D.M. (1995). Indigenous knowledge, biodiversity, conservation and development. In Bennun, L.A., Aman, R.A., and Crafter, S.A. (eds) 1995. *Conservation of Biodiversity in Africa. Local Initiatives and Institutional Roles*. Nairobi: Centre for Biodiversity, National Museums of Kenya.

Warren, D.M., Jan Slikkeveer and Bronkesha, L. (eds) (1995). *The Cultural Dimension of Development*. London: Intermediate Technology Publications.

Watt. J.M. and Breyer Brandwijk, M.G. (1962). *The Medicinal and Poisonous Plants of Southern and Eastern Africa*. Edinburgh & London: E. & S. Livingstone.

Wehmeyer., A.S., Lee, R.B. and Whiting. M. (1969). The nutrient composition and dietary importance of some vegetable foods eaten by the !Kung Bushmen. *S. A. Medical Journal, Vol. 43, 1969, 1529-1532*.

Wiersma, W. (1986). *Research Methods in Education: An Introduction*. London: Allyn & Bacon.

PERSONAL COMMUNICATIONS

O'Donoghue, R (1998, 16 June). Senior Professional Officer (Education), KwaZulu Natal Nature Conservation Services, Pietermaritzburg.

O'Donoghue, R (1999, 30 December). Senior Professional Officer (Education), KwaZulu Natal Nature Conservation Services, Pietermaritzburg.

APPENDIX 1: AN INVENTORY OF INDIGENOUS FOOD PLANTS USED IN TUKU VILLAGE,
PEDDIE

<u>Scientific Names</u>	<u>Common Name(s) (Eng.)</u>	<u>Xhosa Name(s)</u>	<u>Uses</u>
<i>Acacia karroo</i>	Sweet thorn	UmuNga, umNga	Gum & bark edible
<i>Amaranthus hybridus</i>	Pigweed	IMbuya, iTyuthu, iTyiwuthu	I
<i>Amaranthus thunbergii</i>	Cape pigweed, poor-man's spinach	IMbuya, iTyuthu, iTyiwuthu	I
<i>Apodytes dimidiata</i>	White pear	UmNqabaza, umDakane	F
<i>Bergeranthus milticeps</i>	N/A	UNomgushe	R
<i>Biden pilosa</i>	Black jack	UmHlabangubo, uQadolo, iNongwe	I
<i>Buddleia salviifolia</i>	Sagewood	lLothana	B
<i>Burchelia bubalina</i>	Wild pomegranate	UmFincafincane, umFincane	F
<i>Canthium inerme</i>	Common turkey berry	UmNyushubele/I	F
<i>Carissa bispinosa var. bispinosa</i>	Carissa, num-num	UmBethankunzi, isaBethankuzi. Isincum'ncum'	F
<i>Carpobrotus edulis</i>	Hottentot's fig, sour fig	ITyum'tyum'	F
<i>Cassine aethiopica</i>	Koobo-berry, bushveld cherry	UmGxube	F
<i>Centella asiatica</i>	Marsh pepperwort, pennywort	UNongotyazana, uNonyongwana/e	I
<i>Chenopodium album</i>	White goose-foot, fat-hen	IMbikicane, iMbilikicane	I
<i>Citrullus lanatus</i>	Wild watermelon, watermelon	Intshabotyi	F, V
<i>Colpoon compressa</i>	Cape sumach	IsiDuli, Intekeza, iMbulunyathi	F
<i>Cordia rudis</i>	Small bone-apple	INsinde, iNtsinde	F
<i>Cotulia anthemoides</i>	N/A	UmQokolo	F

<u>Scientific Names</u>	<u>Common Name(s) (Eng.)</u>	<u>Xhosa Name(s)</u>	<u>Uses</u>
<i>Cucurbita pepo</i>	Pumpkin	IThanga, amaThanga	I, V
<i>Cussonia spicata</i>	Common cabbage tree	UmSenge, iNsenge	R
<i>Cyperus esculentus</i>	Yellow nut-grass	INqoba	R
<i>Diospyros dicrophylla</i>	Common star apple	UmBhongisa	F
<i>Dovyalis caffra</i>	Kei apple	UmQokolo	F
<i>Dovyalis rhamnoides</i>	Common sourberry, Cape cranberry	UmQokolo	F
<i>Dovyalis rotundifolia</i>	N/A	UmQokolo	F
<i>Ehretia rigida</i>	Puzzle bush	UmHleli/e	F
<i>Encephalatos sp.</i>	Cycad	UmGwavu	F,R
<i>Euclea undulata</i>	Common guarri, small-leaved guarri	UmGwali	F
<i>Eriospermum parvifolium</i>	N/A	UnoNyadhe	R
<i>Ficus capensis</i>	Cape fig	UmKhiwane, umKhwane	F
<i>Ficus craterostoma</i>	Forest fig, bastard natal fig	Uluzi	F
<i>Ficus ingens</i>	Red-leaved rock fig	UmThombe	F
<i>Gardenia amoena</i>	Thorny gardenia	Ithongoti	F
<i>Gunnera perpensa</i>	Wild rhubarb	Iqhobo	R
<i>Grewia occidentalis</i>	Cross-berry	UmNqabaza, UmNqabalaza	F
<i>Harpephyllum caffrum</i>	Wild plum	UmNgwenya	F
<i>Helichrysum spp.</i>	Helychrysum	ICholachola	B
<i>Hippobromus pauciflorus</i>	Horsewood	Ulwathile, uMfazi-onoxolo	F
<i>Hydnora africana</i>	Jackal food	Unopetse	F
<i>Hypochoeris radicata</i>	N/A	UnoNjenti, umaJenti/e	I
<i>Hypoxis argeanta</i>	N/A	Ilebatheka	R
<i>Ipomoea simplex</i>	N/A	IGontsi	R
<i>Lagenaria siceraria</i>	Bottle gourd, butternut	IKhomane	V

<u>Scientific Names</u>	<u>Common Name(s) (Eng.)</u>	<u>Xhosa Name(s)</u>	<u>Uses</u>
<i>Lantana rugosa</i>	Bird's brandy	UTywala-bentaka	F
<i>Leonotis spp.</i>	N/A	IMfincafincane	B
<i>Lippia javanica</i>	Lippia, fever tree, wild tea	IZininiba, uZinzilibe	B
<i>Lycium ferocissimum</i>	N/A	UmBhovu	F
<i>Mentha longifolia</i> <i>subsp. polyadena</i>	Wild mint	INxina	B
<i>Mimusops caffra</i>	Coastal red milkwood	INtunzi, iThunzi	F
<i>Moraea elliotii</i>	N/A	INcembu	R
<i>Olea europea subsp.</i> <i>africana</i>	Wild olive	UmNquma	B, F
<i>Osteospermum</i> <i>grandidentatum</i>	N/A	IQobaqoba	F
<i>Oxalis spp.</i>	Oxalis	IsiMuncwana, isiMuncumuncwan-a	Salad
<i>Pappea capensis</i>	Jacket plum, indaba tree	ILitshe, iNgqalutshe	F, B
<i>Plectranthus esculentus</i>	Native potato	ITapile	R
<i>Portulacaria affra</i>	Porkbush	IGwanitsha/I	I
<i>Portulaca oleracea</i>	Common purselane, pigweed	IGwanisha/I	I
<i>Protorhus longifolia</i>	Red beech	IKhubalo, umKhomuso	I, F
<i>Rapistrum rugosum</i>	N/A	IsiQwashumbe	I
<i>Rhus dentata</i>	Nana berry	INhlokokotshane , iNhlokotshiyane	F
<i>Rhus incisa var. effusa</i>	N/A	INhlokokotshane, Inhlokotshiyane	F
<i>Rhus lucida</i>	Glossy currant	Inhlokokotshane, iNhlokotshiyane	F
<i>Rhus pentheri</i>	Common crowberry	INhlokokotshane, INhlokotshiyane	F
<i>Rhus rehmaniana</i>	Blunt-leaved currant	INhlokotshane, iNhlokotshiyane	F

<u>Scientific Names</u>	<u>Common Name(s) (Eng.)</u>	<u>Xhosa Name(s)</u>	<u>Uses</u>
<i>Rhoicissus tomentosa</i>	Common forest grape	IsaNqodi	F
<i>Rubus pinnatus</i>	Bramble, South African black-berry	Iqunube	F
<i>Rumex spp.</i>	Dock	Idololenkonyane	I
<i>Scutia myrtina</i>	Cat-thorn	IsiPhingo	F
<i>Sisymbrium spp.</i>	Wild mustard	IsiQwashumbe	I
<i>Schotia latifolia</i>	Bush boer-bean	UmGxamu	F (seeds)
<i>Schulzeria umkhowaan</i> (<i>Termitomyce</i> <i>umkhowaaani</i>)	Mushroom	IKhowa	V
<i>Solanum nigrum</i>	Black nightshade	UmSobo, umSobosobo	I, F
<i>Sonchus oleraceus</i>	Sow thistle, wild thistle	Irhabe, iHlaba	I
<i>Taraxacum officinale</i>	N/A	UQudalele	I
<i>Urtica urens</i>	Stinging nettle	IRhawu, uRhalijane, uRhalakajane	I
<i>Urtica dioica</i>	Stinging nettle	IRhawurhawu, uRhalakajane	I
<i>Xysmalobium undulatum</i>	Wild cotton, milk bush	ITshongwe, iLothana	I
<i>Zantedeschia aethiopica</i>	Arum lily	INyibiba	I

¹N.B Source of common English names:

Fox, F.W. and Norwood Young, M.E. (1982). *Food From the Veld. Edible Wild Plants of Southern Africa*. Craighall: Delta Books.

Pooley, E. (1993). *The Complete Field Guide to Trees of Natal, Zululand and Transkei*. Durban: Natal Flora Publication Trust.

¹ Key to Uses

I-imifuno (wild spinach/pot-herb) F- wild fruit R- edible root or tuber B- beverage V- other vegetable

APPENDIX 2: SUMMARIZED INTERVIEW TRANSLATIONS

PEDDIE REPORT NO.1

PRELIMINARY SURVEY OF RESEARCH AREA

During this visit Sidwell Dingela and myself made a 5-day trip to KwaTuku village in Peddie in order to get an introduction to the community as well as to get a general feel of the surrounding vegetation type.

Day 1: 05/04/99

This commenced with travel to Peddie, which took up the greater part of the day. In the evening we paid a visit to 3 people. The first was an introductory visit to the SANCO chairman in the area, Mr S. Mavata. Sidwell told him the purpose of my visit and that I was going to stay in the area for some time while conducting my research. The chairman welcomed the idea of researchers coming to work in the area to document indigenous knowledge. He mentioned that it would be appropriate to attend a community meeting scheduled for Wednesday that week so as to be introduced to the broader community. Sidwell acknowledged the importance of attending this meeting and mentioned that he had already made plans that we attend it. Mr Mavata also hinted that someone in the village had brought in a researcher working along similar lines and that it would be advisable to meet with that person to see if there was any useful information that they could share. This will be followed up in succeeding visits.

The next visit was to Mrs N. Mavata, a very interesting old lady of 75 years who apparently was very conversant in English despite her age (this might prove a useful interpretive reference point for the research in future). Upon being introduced to my area of study she began to quite vividly describe how they prepared some of the traditional dishes during the harvest period from early crops. You could actually see she was wetting her appetite as she recalled in detail those meals. Sidwell tactically redirected her to indigenous food plants from the veld. In a short space of time she managed to recall a number of that they used from the wild. These included the spinach (imifino) inkunzane, ihawuhawu and unojente; the fruits amaqobo, umgxube, ingwenya, unonyhade, intsenge. Among the root plants she

clearly recalled one plant which she described as a sweet-tasting Xhosa equivalent to the cultivated carrot (to follow up on name in subsequent visit).

Our last call of the day was to Mr B.M. Joka who is responsible for looking after initiates during initiation ceremonies for the abaKwetha in the village. Sidwell informed me that he regularly ventured into the surrounding natural veld where he hunted, collected medicinal plants and gathered honey and that he was quite good in identifying the local vegetation. The main purpose of visiting him was to invite him to accompany us to one of the closer natural vegetation areas about 30 km away where we intended to mainly hike, camp overnight, and get a feel of the vegetation with his help on identifying some food plants. This trip was scheduled for day 4 of the visit. Mr Joka agreed to accompany us on this visit.

Day 2: 06/04/99

We made trip to Peddie Town Centre where Sidwell was scheduled to meet with the Town Chairman. The meeting did not materialise as the chairman was attending another meeting and had no made arrangements for one of the councillors to represent him. The councillors we found at the office were all rushed up to attend a workshop on developmental issues in the Peddie area to attend to us. This meeting we attended briefly before leaving for King William's Town for banking transactions which took up most of the afternoon. In the evening we paid a visit to 2 people in the village. The first visit was an introductory visit to the chief of the area Mrs Mrwebo (whom we ritually brought a drink). The chief welcomed research in the area and mentioned the community meeting scheduled for the next day as a good introductory/entry point to the community.

We then next visited an influential (ANC) village elder Mr M. Mavata. He also welcomed the bringing of research workers into the village but had a keen interest in what contribution I was making to the community. Sidwell explained that my research was purely academic and highlighted the need to document indigenous knowledge existent in the village before it was lost. He also made mention of my previous teaching background in Biology and That I could be called on when the need came and it suited my schedule to help the school going village youth on some biology topics that they found difficulty in understanding. He also mentioned that I could help them in identifying some plants and trees around the community as I had a botany background. This seemed to satisfy Mr Mavata.

Day 3: 07/04/99

The day begun with attending the community meeting scheduled for that morning. This started quite late and was poorly attended due to the heavy rain (most of the attendants had been attracted to the meeting by the presence of the bakkie). The meeting seemed to have no agenda and the main focus was therefore my introduction to the community. Most community members stood up to welcome my presence in the community and promised to help whenever they could with regards to my research.

In the afternoon we then visited a waterworks project in the area which was to supply water to some of the communities in Peddie.

Day 4: 08/04/99

Extremely heavy rains marked this day. We made a trip to Hamburg in the morning where Sidwell was to meet with the Town Clerk to discuss developmental issues in the town. The meeting was held in the town clerk's office which leaked very heavily such that buckets and dishes had been put in place to hold the drips.

Our field trip for this day was abandoned due to the heavy rain which impeded our hiking to the surrounding veld area, let alone camping there. I spent the rest of the day trying to sharpen my Xhosa speaking skills.

Day 5: 09/04/99

Preparation for return to Grahamstown.

General Comments

- Of most of the elder people we came across on the roads there was notable surprise/awe at the idea of studying indigenous food plant use. It was evident from their talk that most no longer used indigenous plants.

- In almost all the homes that I entered there was electric power supply connected and TV sets in the living rooms. Most youth seemed to follow the popular soap operas.
- As observed on day 1 and day 4, most youth (both boys and girls) were ardent soccer fans, following the inter-village matches despite the rain on day 4.
- I was to stay at Sidwell's family home in the village where her grandmother was going to take care of my needs during my stay. I was to also use her as a main source for verifying my observations on the use of wild food plants in the village.
- To get clarification on difficult Xhosa concepts it was decided that I use a young member of the community well known to the village elders who was also conversant in both Xhosa and English as an interpreter.

PEDDIE REPORT NO.2

INTERVIEW SESSIONS; 24 APRIL – 02 MAY 1999

24-26/04/99

Travel and ceremonies covered these first three days. On the 24th we left for east London where we attended a graduation ceremony on the 25th. On the 26th there was a tomb unveiling ceremony at Sidwell's residence which spilled into the next day. Of note was the fact that no indigenous herbs or imifuno were mixed with the meat cooked during the ceremony. The only exception was the traditional use of branches and leaves of the wild olive *Olea eurpea sub. africana* for placing the meat on. Sidwell left on the 27th while I was struggling to get an assistant to help me navigate the homesteads and arrange interviews. Since this was the first time he had ever left me to work on my own I felt a bit lost and insecure. The person whom he had arranged for me to go around with, Andile Twatwa, unfortunately announced he was no longer working in the area and thus would not be available. Andile however promised to get me someone to help. Whom he eventually turned up with in the afternoon before he left. This turned out to be his brother, Zwelixolile Deliwe. Since there was a group of young university graduants from the village who had come in for the ceremonies, I took the opportunity to interview them with regards to indigenous food plants.

27/04/99

INTERVIEW 1: GROUP INTERVIEW

I arranged an interview with some graduants from the village who had come in for the ceremonies scheduled for the long weekend. Though I had planned to focus on individual interviews during this visit I realised I could not arrange this for the members of this group. I therefore grabbed the availing opportunity and decided to interview them as a group. The interviewees were:

Vumile Mavata

Ngawodwa Luvuno

Andile Twatwa

Zwelixolile Deliwe

The age range was between 20-30 years

Upon enquiry as to whether they had ever gathered and eaten indigenous food plants the four stated they did as they grew up while herding cattle or hunting. They made a statement that due to the coming in of urbanisation in the village they might be the last generation to ever do so as the younger people at present no longer herded cattle, hunted or fetched firewood and are thus no longer exposed to these plants. The group said generally the young boys in the village now no longer went into the bush out of fear of snakes and other wild animals and parents did not encourage them to do so.

I managed to get the following list of plants during the interview:

Imifuno

Irhawurhawu

Imbuya

Umsobo

Isiqwashumbe

These were said to be usually mixed with mealie-meal to make 'isigwamba'. Traditionally they were eaten by women as they were believed to make man weak and cowardly (abengangofazi-like a woman).

Fruits

Isiphingo

Ingwenya

Amaqhobe/o

Amakhiwane

Root plants

Uthomboti

Intsenge

Isicakathi

According to the group, indigenous food plants were mainly eaten as dietary supplements upon availability and never constituted a main part of the everyday diet. They said they ate these indigenous food plants because they were told they were edible and because some had a sweet taste to them. There were mixed feelings amongst the group on as to whether there is continued use of indigenous food plants by the community. Some said that the community now generally regarded indigenous foods as dirty and a source of disease since some of it was collected and eaten raw and unwashed and also that it was food for the poor. Others believed that use still continued in the village. There was agreement however that commercial foods had become dominant to the extent that indigenous foods were now sidelined.

With regards to availability of indigenous food plants the group agreed they were available around the homes in the gardens and in the uncultivated areas as well as in the nearby veld.

When I asked as to whether there were any specific indigenous food plants that were eaten during the initiating ceremonies of the abaKwetha, they said there were none that they used during their initiation but pointed out they might possibly have been used in the past and that it was worth following up with the older people.

INTERVIEW 2: MRS B. MAVATA (75YRS)

In the afternoon we decided that we visit Mrs Mavata, the 75yr old lady that I had met during the preliminary survey. The talk with Mrs Mavata, like in the first interview, began with her making vivid descriptions of how they prepared traditional dishes in general and the use of grain storage pits. It was apparent from her talk that sorghum, maize and amasi (soured milk) comprised the main everyday dietary foods, being occasionally supplemented with meat and other foods. I did manage to swing the discussion into indigenous food plants. The following plants were mentioned during the discussion.

Imifuno

Umsobo

Irhabe

Imbuya/ityuthu

The leafy parts of these plants were collected, washed, chopped up, then added to mealie-meal. The mixture was then boiled in water until cooked. The dish was called isigwamba. When I asked whether man did eat isigwamba she said that in the past it was taboo for man to eat the dish as they believed it made man physically weak. However some men do it and they believe it makes them strong. She also mentioned that the young boys (amakwenkwe) use to collect imifuno on and prepare isigwamba on their own which they ate. The following plants were mentioned during the discussion.

Fruits

Amakhiwane

Ingwenya

Isabethankunzi/isabetha

Umqokolo

Umbhoxo

Umgwavu

Isiphingo

Ungxube

Umthombe

Mrs Mavata said most of the above plants were still available. However some of them no longer bloom. She also mentioned that youngsters even today still gather and eat umthombe, ingwenya, amakhiwane and isaphingo.

Root plants

Unomgushe

Umnhlohlo/unopetse

Iqhobo/amaqhobo

Unonyhada/e

Intsenge

Beverages

Imfincafincane

Inxina

Beverages were taken to add health and to relax the body (ukuswabulula umzimba). Both the above beverages are said to have a bitter taste.

Mrs Mavata, like most old people in the village, holds the belief that traditional foods (including indigenous food plants) had kept them strong, healthy and long-lived. She lamented the modern diet and claimed it was responsible for the weak stunted appearance of the current young generation. She mentioned the fact that as girls they were never allowed to eat eggs, let alone chickens. These were only eaten by adults. She claims that this kept them healthy and free of heart problems and obesity which the younger generations now have.

28/04/99

FIELD TRIP AND INTERVIEW3: MR M.S. MAVATA

The day started off with us paying a visit to Mr Mavata who had promised to help (rather show) me with regards to indigenous food plants the previous evening. What I had originally anticipated to be a sit-in interview turned out to be a field excursion. I took the opportunity to collect some food plant specimens for later identification and analysis. During the walk we had a discussion with regards to indigenous food plant use. It was disheartening that quite a number of the trees he pointed out were not in fruit that time. The vegetation was typical valley bushveld with open grasslands on the higher ground and sections of riverine forest. Mr Mavata pointed out the following plants during the trip.

Fruits

Isaphuxo/isiphingo

Umnqabaza

Inhlokokotshane (2 species were pointed out)

Umnyushubele

Isabetha

Umbhongisa

Ingwenya

Ilitshe

Umthombe

Umbhovu

Root Plants

Iqhobo (not pointed out but mentioned in discussion)

Unonyhade (not seen but mentioned during discussion)

Umsenge/insenge

Other food plants

Umuncwana/umuncumuncwana (whole plant edible)

Umnga (gum from plant eaten, loved by baboons hence the name 'inhlaka yemfene'; inner bark also edible and is sweet)

Mention was made of imifuno being found in the area. However we came across none. Mr Mavata also confirmed the belief that imifuno were not eaten by man as they made them weak. Most of the root plants were not located as they were out of season. Mr Mavata said there was a possibility of getting them in the grass vlei areas.

INTERVIEW 4: MRS MADEYI

In the afternoon we made an effort to interview Mrs Madeyi. She welcomed us in and gave us names of 2 plants used as imifuno. These were isigubo and itshongwe. However after this she claimed she had little knowledge of the indigenous plants and referred us to another Madeyi homestead at the far end of the village who was a traditional healer related to her (Mrs N Dingela). We then proceeded to the healer's home where we had along wait before being allowed to see her. People of the homestead thought we had come to consult the healer for medicine (amayeza) or a cure. We had to explain the purpose of our visit to more than 3 people and they still seemed not convinced.

We were finally allowed to see the lady who apparently worked with another man. Though they said they were preparing to go somewhere on a healing errand they did give us audience. The following food plants were mentioned during the interview.

Imifuno

Isiqwashumbe

Irhabe

Umsobo

Umbilicane

The above were claimed to be not eaten by young men in the past, rather by older married man. They did state however that presently even man eat isigwamba due to food shortage as well as dietary changes where now man eat cultivated vegetables.

Fruits

Isabethankuzi

Ingwenya

Root Plants

insenge

Beverages

Inxina

Uzinzilibe/izininiba/e

Other food plants

Ithanga

Intyabotyi

Umnga

Ityuwa

Igwanishi/e

24/04/99

This day turned out to have a bad start. My assistant did not turn up and after waiting for almost 2hrs for him I checked at his home and was told he had gone to purchase electricity units from the next village. I then decide to try and go out on my own. It was unfortunate I did not know the location of the homes of the people whom we had arranged to interview that day. I however had the fortuitous incident

of meeting with one of the interviewees on his way to his usual 'watering hole' as I was going back to collect my bag. I then arranged to interview him at his home.

INTERVIEW5; MR N. MATSHOTYANA (79 YRS)

Mr Matshotyana made things easy for me by categorising the plants himself during the interview into root plants, fruits and imifuno, which was surprising for a man claiming to have no formal education background. The plants are as follows.

Imifuno

Irhabe

Mr Matshotyana mentioned that though in the past imifuno were eaten only by women, they now are eaten by men as any other cultivated vegetable is.

Fruits

Ilitye

Unonqutho/u

Isiphingo

Ithunzi/intuzi

Ingwenya

Umnqabaza

Ungxube

Root plants

Umtsibe (common in the fields during the ploughing season)

Unonyhada/e (available any time of the year in grassland areas)

Igontsi (available in grasslands any time of the year)

Iqhobo (in grassland any time of the year)

Unomgushe (available in grassland any time of the year)

Mr Matshotyana believes that traditional food was good for one's health and made people live long. He spoke against eating hybrid frozen chicken and meat, which he described as being not fresh and so artificial that when one cooked it the bones become powdery. He said in their times when a beast was slaughtered the meat was eaten while it was very fresh.

INTERVIEW 6: MRS S. XAMANA (67 YRS)

For my second interview of the day I decided to visit Mrs Xamana who is an aunt to one of the graduants and to whom I had been introduced. She was very welcoming and did her best to make me feel at home. She even took me to her garden where I found growing amongst the cultivated vegetables most of the imifuno that people had mentioned to me. In the interview she came up with the following plants.

Imifuno

Umsobo (berries also eaten as a fruit)

Irhaba/e

Imbuya

Inongwe

Upon my inquiry with regards to eating of imifuno by man she mentioned that only old men could eat imifuno.

Fruits

Ingwenya

Isiphingo

Iminqabaza

Inhlokokotyane

Umthombe

Amakhiwane

Ilityane/ityanyane

Root plants

Amaqhobo

Insenge

Mrs Xamana said that most traditional foods were healthy because they were prepared without use of fat or oil as compared to modern food. Another notable mention from her was the statement that imifuno were not only cooked with mealie-meal to make but could be cooked alone and eaten with pap. When eaten alone the dish is called uluxu. She lamented modern vegetables which she said were bought after staying for days on the supermarket stalls. She said in their time imifuno were collected and eaten while still very fresh from the veld.

With regards to use of indigenous food plants by the village at present she said families who conserved their cultural values, particularly the older generations, still prepared and ate these food plants though they currently mix them with other modern foodstuffs. She said when they grew up it was rare for people to go to a clinic, let alone be admitted to hospitals as now with such illnesses as high blood pressure, heart attacks, cancer and tuberculosis as indigenous food plants and the methods of preparation ensured that they stayed very healthy. She went on to elaborate the preparation of traditional dishes with meticulous detail.

30/04/99

INTERVIEW WITH MR S MAVATA

My assistant was back so the day started out very well. Our first port of call was to an old lady called Nxuselwa. However when we got to her homestead she was not available. Having walked quite a distance it was a relief to come across Mr. Mavata who was tending to his garden nearby. We hastened to make an appointment to interview him at a later time, noting that he was busy. After I introduced my research interest he asked how much time I would need for the interview to which I answered less than an hour. He said he could spare us the time then, so we sat down and had the interview.

The following plants were mentioned during the interview.

Imifuno

Ihabe

Imisobo

The two were said to be abundant during summer but both could be seen growing in his garden, though not in large populations.

Fruits

Isiphingo

Intunzi/inthunzi

Ingwenya

Amaqunube

Unonqunqutho

Root Plants

Unopetse

Unomgushe

Unonyhade

Umphunzisa (has a big root which is dug out, peeled, dried, pounded and ground into pulp which is used to make pap)

Insenge

Isicakathi (roots from this plant were fed to infants of 3 months and over and were said to be very nutritious)

Iqhobo

Other plants

Amakhowa (mushrooms-these occur in fertile soils, abandoned cattle kraals, etc. they usually appear after a storm.)

Amathanga- these were collected from the wild in the past but now are cultivated. Mr Mavata told a story about 2 women who were married to the same man. One of them had just given birth and, being weak, the other had to prepare food for her. Out of jealousy she collected amathanga from the wild and prepared them with the intent to poison her. Instead the other wife got fatter and healthier every time she

fed her amathanga. The jealous wife then joined in the eating of the plant and it later became popular amongst the local folk.

INTERVIEW8: MRS CAMAGU (AGE UNKNOWN)

We made 2 attempts to interview people (Mr Tshoyo and Mr Magoswana) in the afternoon of this day which both failed as the interviewees were not available. However we secured an interview with Mrs Camagu, a very old lady, late in the afternoon. From the position where we were seated I observed a large population of imisobo growing in Mrs Camagu's garden and I used these to prompt the discussion.

Mrs Camagu was quite old, she struggled to recall indigenous food plants they used in their time. However she was very pleasant and insightful company. She jokingly chided me about researching things that I hardly new of to be presented to my 'teachers' who had an even vaguer knowledge on indigenous food plants who would accept whatever findings I made as valid. I pointed out to her that it was the essence of research to discover the unknown. She went on to say that during her time teachers new everything they taught whilst nowadays the so-called educated people openly admitted they did not know everything and were eager to learn from ordinary people like herself. (I did not decipher whether she saw the advantage in this). I managed to get the following food plants from her.

Imifuno

Umsobo

Ihabe

Igwanishi/a

Fruits

Umngwenya

Izaphingo

Isabethankunzi

Intunzi

Isanyinyi

Ilitye

Beverages

Inxina

Ilitye

The old lady lamented modern food for bringing ill-health to the young generation whom she said were so weak that when shoved they would just keel over and constantly needed to go to the pharmacy or clinics for medicine. She strongly despise frozen food, in particular chicken, which she said had powdery bones and hence the weak bones of the young people.

Mrs Camagu went on to discuss other traditional foods, grain storage pits and also sea-foods that they collected. After that she claimed she had given me enough information and asked me to go and find other old ladies to bother.

01/05/99

There were several functions going on in the village on this day that I failed to get any interviews arranged. In addition my assistant had gone to East London and thus left me alone. I decided to spend the day looking up and matching Xhosa plant names that I had with scientific names. I did manage to squeeze in an interview with Sidwell's grandmother, Mrs Madlingozi while we sat watching TV and having tea.

INTERVIEW 9: MRS N.H. MADLINGOZI (68 YRS)

During my interview with Mrs Madlingozi she mentioned the following food plants.

Imifuno

Umsobo

Ityuthu

Ihabe

Isiqwashumbe

Irhawurhawu

Fruits

Umqokolo

Ilitshe

Amakhiwane

Isincumuncumu

Umbhongisa

Umngwenya

Iqunube

Unonqutho/u

Root Plants

Unopetse

Itapile

Unonce

Beverages

Inxina

Icolocola

Umhlonyane

Mrs Madlingozi claims that indigenous food plants no longer appeal to the young generation who consider them primitive. This, she said, was why they were prone to such illnesses like ulcers, cancers, and heart disease. She mentioned that in the past food was eaten while fresh, including meat, and that no aft or oil was used in their cooking as fat was only available when a beast was slaughtered and thus the diet was healthy.

02/05/99

My assistant turned up very tired from the previous night's activities (there had been a boxing tournament in the village that had lasted until 04:00 hrs in the morning) and was therefore too sleepy to take me around on the scheduled interviews. I however got assistance from Mandisa and Nomawonga Ntutu who were available later that day. We managed to get 2 interviews done despite a late start.

INTERVIEW 10: MR H. TSHOYO

We managed to get hold of Mr Tshoyo after the Sunday morning church service. From our discussion he came up with the indigenous food plants listed below.

Imifuno

Irhabe/ihlaba

Umsobosobo (said to be good for the bones and against arthritis)

Fruits

Inqoba

Amaqabuza

Ingwenya

Inhlokokotyane

Isiphingo

Inyiki

Root plants

Iqhobo/a

Unomgushe

Insenge

Ithuma

Unopetse (grows in association with Euphorbia spp.)

Beverages

Inxina

Icolacola

With regards to indigenous food plants Mr Tyoyo said most of these are no longer eaten because they are tedious to prepare. He believes lack of their use has an effect on the health of the younger generations. Mr Tyoyo also said that most people no longer eat wild fruits because they occur in the veld and few people are now keen to travel long distances to get them. He promised to find time to take me into the veld and show me the food plants if I called again.

INTERVIEW 11: MR J.J. MAGOSWANA (78 YRS)

Our next call of the day was on Mr Magoswana's homestead. From the interview with him I obtained the following list of indigenous food plants.

Imifuno

Umsobo

Ihlaba

Isiqwashumbe

Imbilikicane

Umhlabangubo

Unomdlomboyi

Fruits

Inhlolokotyane

Umnyushulube

Ithongoti

Ingqalutye/ilitye

Isiphingo

Umngwenya

Umthombe

Root plants

Iqhoba/e

Umsenge

When I enquired as to why people no longer take as much interest in indigenous food plants as in the past Mr Magoswana replied that in the past there were no stores to buy from hence people relied on wild plants as their food source. This, he said, has however changed over time as people have become reliant on cultivated crops and food bought from the stores. He voiced his concern/fear over this trend in the young generation, whom he said no longer know food plants from the veld. He said a time might

come when crops will fail and people might have money but no food to buy and thus die of hunger when there is a bountiful supply of food around them.

General Comments

- Most people in the village do not rely on agriculture for their day to day survival, rather they talk about going to the city to get money from pensions, children working in the city, etc. Of those that stay in the village a number, particularly female households, supplement their livelihoods by selling liquor.
- During my interviews with some of the elderly I realised that some of the youth joined in and contributed local names of indigenous food plants to add to those mentioned by the elderly.
- In a number of the homes I visited I noticed that wild fruit trees such as umgwenya, isiphingo, umqokolo etc. were left growing in the homestead. In some homes igwanisha formed the fence around the home. Some huge umthombe trees grace the village entrance as one approaches it from the secondary school edge.

This trip has been marred by many negative (if not catastrophic) events which have resulted in quite a considerable loss of time. To begin with Vivian had kindly lent me her car, full tank and all, to ferry me to Peddie and Sidwell had offered to drive me there. We intended to arrive in Peddie on the night of 29/05/99 (Saturday) and then make an excursion to the veld on Sunday morning (30/05/99) before Sidwell made his trip back. However things did not go as planned. To begin with Sidwell had to pick up material from one of his informants in Kenton-on-Sea which he intended to use. On the way to Kenton he made the comment that the car was not performing as he expected. As we left Kenton now herded for Peddie the problem worsened and we only made it as far as Port Alfred before the Car broke down. We tried all we could to get it back on the road without success and eventually we had to sleep in the car the whole night, fearing to leave it unguarded. It was a very cold night indeed, what with Sidwell having mentioned that he had a fever the previous night. On the morning of the Sunday we had the car towed to Valley Trucks garage where a mechanic diagnosed the fault as being electrical. It being a Sunday there was no place to get spares to get it fixed and Sidwell suggested we arrange to have the car towed back to Grahamstown. We eventually got help from Andrew, one of Sidwell's former work-mates from the Working for Water Project who brought his truck and helped us tow the car that night.

When we got back to Grahamstown and broke the news to Vivian she was quite unsettled to learn her car had broken down. We had left the car at the VW garage and she suggested it was safer to tow it and leave it at her abode, which we eventually did. I could understand why Vivian was so pensive. You do not lend people your car in full functional order and expect it to turn up with a problem. On the other hand I was quite sympathetic with Sidwell's position. Despite being unwell he had still offered to drive me to Peddie. He least anticipated the breakdown but it had happened all the same and he also went out his way to try and get the car fixed and, on failing to do so, arranged to have towed back to Grahamstown. The worst realisation was that both parties had gone out of their way to help me and all I had succeeded in doing was getting them pitted against each other. Though I would have liked to, I could not wait to see how it went with Vivian's car as Sidwell had organised to get me to Peddie in Andrew's truck. So it was back on the road in the early hours of Monday morning sipping Vivian's flask of tea. Feeling quite drained myself I really wondered where Sidwell was getting the energy that still made him manage to cope. Sidwell left soon after he had dropped me off and I prayed he had a safe journey back.

31/05/99

I had a late start this day after the events of the weekend. When I went to look up my assistant I discovered that he was involved in the electoral posts at the polling station at the local secondary school. This was going to take up the next 2 days, so I briefed him on my plan for this stay and made alternative arrangements to utilise my time. I decided to start off by arranging follow up interviews with informants from my previous visit. My first port of call was Mrs Mavata's residence where I made arrangements to see her on the morning of 3/06/99 after the election date. I also made call on Mrs Xamana that very day and she agreed to meet with me on the 4/06/99 in the morning. I was also lucky to come across Mr Blackman Joka, with whom Sidwell and I had intended to go into the veld with as he was acclaimed to be very knowledgeable about the veld. He promised to take me out that Saturday (5/06/99) so I set aside that day for the field excursion. It should be noted that I could not get hold of anybody on the election date as most people were out voting.

01/06/99

I continued to make my interview appointments with informants from the previous session. I arranged to meet with Mr N. Mavata on the eve of 05/05/99. When I visited Mrs Camagu she expressed her pleasant surprise at what she called my inability to get rebuffed by her and she agreed to meet me in the evening after her heavy day's work in the garden on 08/06/99. I jokingly said she should have asked me to come and help and she laughed it off saying that would be the last she would see of me as I would not last an hour of hard work. I found Mr Matshotyana offloading cement bricks from a donkey cart and I joined them in the process after which I arranged to interview him on the morning of 08/06/99. I then proceeded to visit the homesteads of Mr N. Mavata and Mr Tyoyo and arranged to interview them on 09/06/99. I was to meet Mr Magoswana on 10/06/99.

02/06/99

Being Election Day I dared not venture out away from home for fear that violence might erupt. I decided to spend the day re-looking my plans and doing my readings. My fears turned out to be in vain by the end of the day as the voting was done peacefully.

03/06/99

I turned up at Mrs Mavata's place as planned, only to learn from her that she was going to be involved in some traditional ritual somewhere in the village and thus could not make time for the interview that day. We however arranged another interview for the morning of Sunday 06/06/99.

I then proceeded from her place to my assistant's residence to check up on him and arrange a schedule for interviewing new informants. Upon arrival at his place I was told that he had left early for a football match at a place called 'Lovers Twist' (probably a corrupted version of Oliver Twist). I asked them to inform him I would call on him at 09:00hrs the next morning so we could arrange for the new interviewees.

I spent the day trying to locate and harvest 'imifuno' around the vicinity of the village. In this I did not meet much success as most of the plants had died out with the onset of winter and the few that still survived could not be gathered in sufficient quantities for the nutritional analysis. I managed to collect a sample of the stinging nettle, which also used as 'umfuno'. Despite all the care I had exercised in picking it, during packing it into the bag it somehow slipped from my hold and landed on my bare thighs setting off a series of nasty stings. As I tried to brush it off my thighs the stinging hairs got into the back of my hands eliciting more pain. The whole collection effort ended up being a big scream of despair. It took more than a hot bath and night's sleep to finally get rid of the stinging sensation and nasty experience.

04/06/99

I turned up at my assistant's place as planned and he was still in bed, down with fever. I could not therefore take him around with me. I however gave him the list Sidwell had compiled of new older interviewees and asked him to make suggestions for new younger interviewees. He said he could locate most of the people on the list and could make arrangements for the younger interviewees as soon as he got well. He promised we could still make up for lost time and believed he would be much better come Sunday. I briefed him about arrangements I had already made and promised to check on him.

INTERVIEW WITH MRS XAMANA

At the beginning of the interview I asked Mrs Xamana if she had ever worked or stayed outside Peddie for a considerable time in her past. She replied she had been working in Port Elizabeth from 1952 to 1994 when she eventually retired. Asked as to whether she still ate traditional foods and kept in touch with her rural home during this period she said she did come home during her vacations and holidays and took the opportunity to indulge in whatever indigenous food was available at home during those periods. When asked whether she still eats indigenous food at present she said she does and still finds them enjoyable and quite tasty to eat. She developed arthritis while in P.E. which she blames on the nature of her work where she had to stand up for long periods. However she says she has no other ailments and attributes her good health to the traditional diet, the eating of 'imifuno' and other wild food plants.

Inquiring as to whether she held the opinion that the younger people no longer used and valued indigenous food and also why there was generally less use of indigenous food plants, she said that in the vicinity of the village the young still eat 'imifuno' and other wild fruits available. She pointed out availability as a factor affecting use. Some of the wild fruits were no longer available around the village and can only be found in the wild. 'Imifuno' on the other hand only occur in abundance with good rains and become scanty if a dry spell prevails. She also said most of the older youth from the village have now moved to the cities in search of work or educational opportunities and were no longer in contact with indigenous food plants. However most, she says, still enjoy 'imifuno' and other wild fruits when they came back home to visit and most still know these indigenous food plants.

Mrs Xamana was however quick to note that the diet is changing within the community as people now prefer modern food such as rice and other starchy sugar-rich foods. She said presently people have a lot of ailments as a result of this diet and deaths are frequent even amongst the young. She claims that in the past hospitals and clinic visits by people were very rare because people were stronger and deaths were associated only with very old people. Bread, she claims, was rarely eaten and in its place sweet potatoes, mealies and sorghum were eaten. Meat was not scarce and people always had a supply of fresh meat as any beast slaughtered in the village was communally shared. Nowadays the meat is no longer fresh as people rely on refrigerated chicken which last so long in storage that the bones become powdery and soft, hence the poor health of the young people. Similarly 'imifuno' taste nicer than cultivated vegetables because they are eaten fresh and juicy whilst cultivated vegetables are left to stand for very long periods before they are eaten. She says 'imifuno are healthier and there is wider variety which does not bore the palate.

05/06/99

I turned up at Mr Joka's place very early in the morning for the planned field trip only to learn from his wife that he had left even earlier that morning for a function to be held at kwaHoyi. I then went back home and busied myself with my readings until it was late enough in the morning to visit other people. I visited the traditional healer's place with the hope of obtaining her personal details and to arrange for a second interview with her. Upon arrival I was told she hardly works from home and was presently away on a series of errands that would keep her from the village for an unknown period. I resignedly started back the long distance walk and prepared for my appointment with Mr Mavata late that afternoon.

Upon arrival at Mr Mavata's place I realised all his brothers were gathered at his premise in what seemed like a family discussion or ritual and they were all heading towards the cattle kraal. I took caution to ask the youngsters at the home and they confirmed my hunch. There had actually been a death in the family and I knew I had to postpone the interview for a later date.

I had arranged to interview Mrs Mavata at 10:00hrs this morning. However it turned out that she was involved with the other Mavatas and was also involved in the funeral proceedings. I then decided to try and follow up on the interview on a later date. I then visited my assistant's home and I found he had recovered considerably. We sat down and made arrangements on whom to visit and make appointments with. We decided to start off with people in close vicinity to our residences and then to move outwards. I made a point to him that, while I was still interested in interviewing the elderly informants, I was more eager to hear from the younger generation. After drawing up a list of potential participants we then set out to arrange the interviews. Amongst the youth we first contacted was Siphwe Luvuno who agreed to see us on the morning of 7/06/99. We then proceeded to visit Mr T. Dingela at his residence. He was not very keen on giving us a definite meeting date and time, but after a while we convinced him of the necessity of this due to our tight schedule. He agreed to see us on the eve of 11/06/99.

INTERVIEW WITH MR X. SIKONYTA (73 YRS)

Our next port of call was at Mr Sikontya's place. In our effort to arrange an interview with him for a later date, noticing that it was already getting dark, Mr Sikontya said he did not know when he next available and began listing local names of indigenous food plants he could recall to us. Realising what

was happening and trying to take advantage of the situation, I hastily retrieved my notebook and pencil and started jotting down the plant names he had said and I repeated the names to try and coax him into recounting any that I had left out. Proceeding thus, the following list of food plants was obtained from him.

Fruits

Ityumutyumu

Isincum'ncum'

Umthombe

Itywala bentaka

Intyabotyi

Utywala bemnyayi

Isiphingo

Isiduli

Root Plants

Igontsi

Unomgushe

Imifino

Umsobo

Imbuya

Irhabe

With regard to the belief that men should not eat imifuno because it makes them weak he said man do eat imifino, including himself. He claimed that he sometimes in the past used to gather and prepare imifino for himself when he still had the energy to do so and that he prefers imifino not to be overcooked so as to retain the flavour.

On the availability of indigenous food plants he said most were still within reach of the village inhabitants. He claimed most imifino were still available even within the village.

With regards to the continued use of indigenous food plants Mr Sikontya acknowledged that there has been a change of lifestyle in the village. The young, he claimed, no longer spent long time in the veld herding cattle or collecting firewood with the advent of electricity and stores. He said electricity had now taken over the collection of firewood while food that was consumed in the village was now obtained from the stores. He observed the young no longer bothered about wild food plants that the adults told them about and were too busy with sporting activities and other forms of entertainment to bother about gathering wild food plants.

Mr Sikontya believes that their diet kept them healthy compared to the modern diet. He said that illnesses and death were of rare occurrence when they grew up. He believes modern diet affects gastric function and that said that most of the young people frequently have stomach problems.

Mr Sikontya said he once worked in Port Elizabeth but has since retired. He admits that his diet has been changed by his exposure to town life and that, like everybody else, he is now very much reliant on the modern diet that he so much despises. He blamed such modern food as beef stock, gravy, aromatics, spices, etc. for ill health.

07/06/99

INTERVIEW WITH S LUVUNO (34 YRS) AND N VUMA (32 YRS)

Siphiwe Luvuno and Nceda Vuma claimed they had previously been employed, the former in several places around Hauteng and Transvaal and the latter around Peddie and East London. However they were at the time of the field research out of work and were taking up any employment offers that came their way. During our discussion they between them they mentioned the following indigenous food plants:

Fruits

Ingwenya

Amaqunube

Isaphingo

Isiduli

Umtyerityeri

Isincum'cum'/isanyinyi

Umnqabaza/umnqabalaza

Umkhwane

Umthombe

Umnga (edible gum=inhlaka)

Umbhongisa

Umbhovu

Inhlolokotyane

Umqokolo

Idololenkonyane

Umnyushubeli

Umgxamu

Root Plants

Unomqhobe

Unonyhade

Umsenge/intsenge

Igontsi

Imifuno

Umsobo/umsobosobo

Imbuya

Irhabe

Irhawurhawu

Other Vegetables

Amathanga

Ixoxozi/imixoxozi

Intyaboty

Beverages

Inxela/inxina

With regards to the availability of these plants they said most of them still occurred in the veld, however their availability was said to be seasonal as well as regulated by water availability during the

course of the year. They claimed that most imifino and some wild fruit such as umthombe were even available in the village vicinity.

When asked as to whether they found any nutritional advantage in eating indigenous food plants and as to whether such plants played a significant role in their diet they said they ate most of the wild food in order to pass time while herding cattle. They said these plants had no significant dietary role. They said however that while they were out herding cattle they never found the need to go back home for food because of the availability of these plants. With regards to health they said they never ate any wild food plants for health purposes, rather for their presence and taste as well as to get rid of the hunger.

On whether the youth were knowledgeable of indigenous food plants they claimed that most of the youngsters still know the popular fruits. However their (the youth) knowledge of indigenous food plants is said to be now very limited as most no longer herd cattle as was done by the youth in the past.

After this interview we proceeded to Mrs Hla's residence to arrange an appointment with her. However she was not available and we then left a message saying we would try and contact her when she became available.

08/06/99

This day began with a call on Mr Matshotyana after I had tried and failed to get hold of my assistant.

INTERVIEW WITH MR MATSHOTYANA

Mr Matshotyan was already waiting for me when I called at his residence. I started off by asking Matshotyana as to whether he had worked or lived outside the village in his life. He said he had worked in several places, including Hauteng, the pine farms around Peddie and East London. When I asked whether this had any effect on his use and view with regard to indigenous food plants he claimed that he still enjoys eating imifino and wild fruits up to date.

With regards to availability of indigenous food plants he said imifino were still available around the village and that one only had to go into the veld to get wild fruits when they were in season.

On the claims that most people, particularly the young, no longer used indigenous food plants he said that most of the older people still like and eat imifino. He however admitted that the young people no longer ate most of these foods as they no longer frequented the veld, herded cattle or collected firewood as in the past and because they have been exposed to modern food. He however claimed that some fruits were still popular with the youth and that the youth went out to collect them, such as isiphingo which was popular during the time of the field research.

Mr Matshotyana said indigenous foods and the traditional diet kept them healthy and claimed that he had been ill to an extent of being hospitalised only twice, first for a tuberculosis infection and the second time for a broken limb. He said the youth were no longer as healthy as they were when they grew up as a result of dietary changes. He claimed that youngsters nowadays grew like broilers, aged quickly and died young like their white counterparts from whom they had inherited the modern diet. He went on to state that the white people he had worked for in their farms, despite some of them being his age or younger than him, had all since died and their kids had followed suit.

INTERVIEW WITH MRS CAMAGU

We found Mrs Camagu in her hut, which was poorly lit, such that during the discussion that ensued I had to rely on my torch to get enough light to jot down the interview.

Mrs Camagu claimed she had stayed in the village all her life relying on agricultural activities for her survival. With regards to availability of indigenous food plants she said that most were still available in the nearby veld and that imifuno still occurred around most people's gardens. She however stated that in the past they used to stay in more densely vegetated area before they were moved to where she was now. She claimed that although some of the indigenous fruit trees were available in the veld, they no longer flowered or bore fruit due to change in the weather.

When I asked her whether she still continued to use indigenous food plants she said she still did, though not as much as in the past. She claimed that she still ate most of the imifino and allowed them to grow in her garden and that most people still ate isigwamba. She however said she had stopped using other indigenous food plants, for example inxina which she said was a beverage she liked because it had a nice smell and a refreshing taste but which she no longer uses for fear of being regarded as poor and primitive by other community members.

With regards to indigenous food plants and health she claimed that too many illnesses nowadays were a result of people changing to the modern diet. She said in the past illnesses were very rare and one hardly had any need to visit a clinic, hospital or doctor. Presently, she said, people relied on the stores for everything while in her time they only bought such things as flour, tea, coffee beans, chicory and sugar. She claimed that in the past one would go the shops for basic necessities and would be offered sugar as a 'mbasela'(free gift). She said these free gifts used to be weighed out rather than came as packaged products and that the amount you got depended on the amount you spent on your grocery. This she said was the beginning of sugar addiction that is now prevalent amongst people. She claimed that currently there was very little agricultural activity, which was the reason for the reliance on shops.

Commenting on whether they ate indigenous food plants for health reasons, she said that most of these foods were eaten because of their flavour and taste and because they were available at the time. She claimed however that they did keep them healthy in comparison to the present day youth, who she said suffered severely even from the common cold. She said now people have high blood pressure from sugary things and that they eat chillies and then complained from stomach burn.

Commenting on why the youth no longer had interest in indigenous food plants and the traditional diet she said the youth were now wooed by city life and tended to imitate the lifestyles of those from the city. She claimed they (the youth) also had different forms of entertainment compared to what her generation had and that the role of the youth in the family had also changed. She said in the past boys herded cattle while girls collected firewood and in that way came into contact with a wide variety of indigenous food plants. Mrs Camagu then related how in the past when they went collecting firewood and came across an umngwenya tree any girl who could not climb up the tree would have to pick those that had naturally fallen to the ground as none of the other girls would bring her down fruit from the tree. Their entertainment, she said, revolved around those activities. She said now girls no went into the veld for the mere fear of their skins getting scratched. Mrs Camagu observed that currently TV and football are the major forms of entertainment in the village.

09/06/99

I had planned to visit Mr M Mavata early that morning, so I felt it was wiser to start off with him prior to calling on my assistant who lived nearby him. I found him working in his garden and after a short wait

he joined me in his living room where the interview was conducted. It was a welcome relief to see Sidwell in his brief visit to check on how I was getting along during the course of the interview.

INTERVIEW WITH MR M MAVATA

I started off by asking Mr Mavata on the availability of indigenous food plants in the area to which he answered that most still occur in the veld nearby as well as around the village. He also claimed that most people still ate these plants even at present. This, he said, included even the young. He gave an example of isiphingo, which he said was a popular fruit in the village and was available at the time of the field research. He however said that most of the youth now have little knowledge of wild food plants because they grew up in the cities and were therefore not exposed to them.

On health aspects of wild food plants he claimed that these plants kept them in good health and helped them get protection against disease, hence the long life of most members of his generation. He claimed that, with the reduced use of indigenous food plants, the health of the community was deteriorating and the life span of the youth was greatly reduced.

Commenting on the role of indigenous food plants in the diet he said field crops such as maize and sorghum comprised a major part of the diet with wild food plants being eaten when available. He however said that while herding they relied on wild food plants in the veld such that they had no need to come back home for food during the day.

When I asked him about the belief that man should not eat imifino as they were said to make them weak, he dismissed this as a myth and gave me an interesting story to it. He claimed that this myth had been spread by women who wanted imifino only for themselves i.e. something men would not partake in eating. Women thus spread the rumour that imifino made men weak so as to discourage men from eating imifino. He claimed that man had however discovered with time that imifino were beneficial to health, hence the name 'iyeza lovalo' meaning the 'the courage giving herb', and were now eating them.

Mr Mavata said the diet in the village was changing and that most people were now losing interest in the traditional diet. He claimed that presently people had dental problems due to eating sugar rich foods and they could no longer chew some of the tough food stuffs eaten in the past.

After the session with Mr Mavata I looked for my assistant with the hope us attending the weekly communal meeting and giving some feedback on the research and to also arrange for some focus group interviews. When we got there we discovered the meeting was very poorly attended due to a number of funerals in the village. We therefore abandoned our plan and went on to arrange more interviews. We managed to arrange an interview with Mrs Hola for the afternoon of the next day (10/06/99).

INTERVIEW WITH MR TSHOYO

In the afternoon I went to interview Mr Tshoyo as scheduled. Mr Tshoyo told me he had worked mostly in the Department of Agriculture in East London up until he retired in 1986. From then on he had come back to stay in the village. When I asked whether working in the city had any impact had any effect on his eating indigenous food plants he said it had indeed. He also added that his involvement with the Department of Agriculture added to this as he had become exposed to a wide range of cultivated crops, including fruits and vegetables that he was cultivating at that time.

He said that, while he believed traditional diet and indigenous food plants made them healthy as they grew up, one has to change with the times. He claimed the time factor had a great impact on the continued use of indigenous food plants. He said most traditional foods were tedious to collect and prepare compared with modern food. He also claimed that people were now too busy to go into the wild and that, having been exposed to a new variety of easily available and ready to cook foodstuffs they had no reason to go into the wild to seek food such as wild fruit. He said imifino were however still available around the homes and were eaten by most people in the village.

Mr Tshoyo claimed that most youngsters who still went into the veld to herd cattle had knowledge of some popular wild food plants. However he believed that this habit was dying as people were becoming less reliant on cattle and other small livestock whose numbers were said to be diminishing. He claimed that most people would pass a lot of the wild food plants without knowing them. Mr Tshoyo claimed that the younger generation no longer had interest in traditional foods and considered them to be primitive.

On the impact of reduced use of indigenous food plants and health, Mr Tshoyo claimed that the traditional diet kept them healthy and long lived compared to nowadays where death was a common

occasion and disease very rife. Mr Tshoyo blamed the modern diet, with its high sugar and fat levels, for ill health. He also did not consider meat that had been refrigerated for long periods to be fresh as he claimed that the bones become dark and powdery. Mr Tshoyo believed in meat being eaten soon after slaughter in the traditional custom. He said that most wild food plants were similarly eaten when still fresh.

10/06/99

I tried to get hold of my assistant as we arranged the previous day but to no avail so I decided to set out on pre-arranged interviews. I was fortunate to come across Mr Joka and he explained why he had not been available on the planned date. Noticing I had concrete interviews set up for the next day, I quickly arranged for him to accompany me into the veld the next morning. It was an opportunity I dared not miss.

INTERVIEW WITH MR J.J. MAGOSWANA

To begin our discussion I inquired from Mr Magoswana whether he had lived or worked outside the village before. He recounted numerous places he had worked prior to his retirement in 1979 while working in East London. Since then he said he had spent most of his time in the village practising agriculture. When I asked him whether this period in the city had an effect on his use of indigenous food plants in the diet, he said that like everyone else he now ate modern food. He however claimed he still ate most of the wild fruits he came across whenever he ventured into the veld. Mr Magoswana said although he could not at present put names to all the edible food plants that he came across he still was able to identify what was edible and what was not.

On availability of indigenous food plants Mr Tshoyo said in the past a lot of them were available when rainfall was abundant, however presently the rainfall pattern had changed and it was now drier. He claimed that as a result some plants had died out and some, though they were still available, no longer flowered. Mr Tshoyo also claimed that indigenous food plants increased as one got closer to the sea.

With regards to the youth he claimed that most of them no longer went into the veld and thus did not know most of the edible wild fruits. He mentioned however that when popular fruits are brought into the home the youth still enjoy them. He also claimed that the young boys who still herded cattle brought home popular fruits they found in the veld such as ingwenya, umthombe and isaphingo.

On indigenous food plants and health Mr Magoswana said people had developed a taste for cultivated fruits and vegetables. He claimed most of these vegetables were less greener and therefore less nutritious than indigenous ones. He said he still prefers imifuno to cultivated vegetables. He claimed people could now no longer eat food without the addition of bisto or beefstock, which he believed did not possess health giving aspects. Mr Magoswana claimed the modern diet encourages excessive consumption of sugar, which has a negative effect on digestion and the teeth.

11/06/99

The collecting trip I had planned with Mr Joka did eventually materialise. I spent the greater part of this day walking, collecting and photographing indigenous food plants that we encountered in the veld. Later in the afternoon, exhausted after the long walk, I sorted out nutritional analysis specimens into plastic bags which I then placed in the refrigerator. The specimens needing identification I trimmed to fit into newspaper sheets for pressing and drying.

I then proceeded to Mr M Dingela's residence for schedule interview only to find him on his way to a funeral.

12/06/99

I failed to get my assistant again on this day, so I decided to find Zweli, one of the youths Sidwell had recommended I interview. I was fortunate to find him together with his sister and cousin at home. I therefore arranged to interview them together.

INTERVIEW WITH ZWELINZIMA NQONDI (26), SYABONGA DINGELA (22) AND DUDUZILE NQONDI (18).

From our discussion the following food plants were known to the group.

Fruits

Isiphingo

Inthunzi/umthunzi

Ingwenya

Ilitye

Umkhwane

Uluzi

Umthombe

Ukutyakwentaka

Iqhunube/amaqhunube

Isanyinyi/amehlomlungu

Umnquma

Umbhomgisa

Umtyerityeri

Root Plants

Unomqobe

Unonyhade

Igontsi

Most of the root plants were said to be available throughout the year.

Imifino

Igwanisha

Irhabe

Imblikicane

Umsobo

Irhawurhawu/urhalakajane

Ityuthu

Isiqwashumbe

Beverages

Umhlonyane

Umnquma

When I inquired as to how they had come to know all these plants the boys said through herding cattle and hunting while the girl said it was from observing plants cooked and eaten around the home and in the village. Asked as to whether they still ate most of these plants they said they did, except for Zweli who said he no longer had the time to go looking for such plants. With regards to the other youth in general they however claimed that amakwenkwe (young boys) would know these plants as they herded cattle and they still collect and eat them.

With regards to health aspects of indigenous food plants, Siyabonga came out strongly saying that these plants and the traditional diet were health giving. He claimed they did not have chemical additives which were found in modern foods as they were eaten directly from the plant and in fresh form.

On the belief that imifino should not be eaten by men, Zweli claimed that imifino were good for the blood (for health) and that he loved eating imifino.

Of note was the fact that even the very young members in the home contributed local names of plants and mentioned the localities where these were available both around the village and in the wild.

At the end of the interview I arranged to go out and collect plants with Zweli and Siyabonga the next morning. On my way back home I came across Mr S Mavata whom I had failed to interview earlier due to family commitments. He promised he would be available that evening.

INTERVIEW WITH MR M. MAVATA

When I arrive at Mr Mavata's residence I found him at supper. Our discussion ensued after a short wait for him to finish supper. During our discussion Mr Mavata told me he had worked in several places including Montie, Peddie town, Johannesburg, Cape Town, before his retirement while working in Port Elizabeth in 1985. I asked whether his working in the cities had impacted upon his use of indigenous food plants to which he said his diet had changed from the traditional one. However, he claimed he still ate imifino and most of the wild fruits when he could get hold of them (as he no longer herded cattle and usually ate at home before going to work his garden or field).

On whether they had ate indigenous food plants for health reasons, he replied that most of them were eaten to fill the stomach and satisfy the hunger and for their taste rather than for health purposes. He

observed however that the community was now experiencing health problems with the shift to modern diet. To illustrate the character of modern processed foods, he gave an example of the processing of maize into samp and mealie-meal which he said removed the yellow germ and made the product less nutritious. He said the diet had now been replaced by things like beef-stock and aromat which he believed had no nutritional value. He was also wary of the time food spends on the shelves nowadays and wondered whether such food could be considered fresh. Of suspicion to him were colours and tastes of most modern food which he claimed were made to entice the eye of the consumer and were not original. Mr Mavata claimed the modern diet was rich in fat and had many unnecessary additives. This, he believed, could be the source of ill health.

Mr Mavata said during his time tea never constituted part of main meal as it now does. He claimed with it came the addiction to sugar. He claimed he never touched tea or coffee all his life.

Still on diet and health Mr Mavata claimed that when they grew up death was rare and then it was confined to the old people. He said one never heard of the deaths of the youth as is prevalent nowadays. He claimed that in the past there was no doctor in Peddie, neither was there a clinic in the village, yet people survived. He attributed the high incidences of ill health to the modern diet.

With regard to the youth he claimed that most no longer had interest in indigenous foods as they had now embraced the modern diet despite the availability of indigenous food plants. Mr Mavata claims even the adult population no longer eats most traditional dishes with the same zeal as in the past.

On transmission of knowledge on food plants to the youth, Mr Mavat said they were exposed to such knowledge as these plants were brought into the home as fruits, which they saw and took part in consuming. He claimed that presently most youth brought back wild fruits that appealed to them from the veld. However, he said they were losing interest in them in preference for cultivated fruits.

13-14/06/99

I spent these two days consolidating my field trips, covering as wide a range as possible of the surrounding veld so as to increase the chances of getting most of the indigenous plants and to get a feel of the vegetation around the village. I was accompanied by Zweli and Siyabonga during these two days.

General Comments

- In more than one instance I came across very young members of the community who apparently had considerable knowledge of indigenous food plants. A young boy from the home I was staying (age 15) brought me a variety of wild fruit and I made an excursion accompanied by another young boy who confidently and rightfully pointed out some food plants.
- Imifino and some other fruits were not available as it was winter and these may need a separate trip in the summer period.
- I had problems accessing some people as I did not know their location in the village mainly because my assistant was hardly available. In future I may need to rely on more than one assistant.
- There is still a need to look into whether focus group interviews with the elderly are still necessary given the amount of data gathered from individuals and the problems of arranging such interviews.

APENDIX 3: NUTRITIONAL COMPOSITION OF SOME WILD FOOD PLANTS

Table I : Ascorbic Acid (Vitamin C) Content and Effects of Different Cooking Methods on Ascorbic Acid Retention in Food

Species	Boiled sample		Steamed Sample		Microwave	Baked sample	
	Content in Fresh sample (mg/10g)	% retained in boiled sample	% recovered in boiling water	% retained in steamed sample	% recovered in steaming sample	Cooked sample	
		% retained in cooked sample	% retained in baked sample				
Cussonia spicata	7.07	62.2	31.26	53.6	14.9	74.4	72.6
Ficus capensis	1.076	41.4	30.76	46.56	40.2	74.1	66.5
Portulaca afra	5.13	52.4	34.9	35.9	35.86	84.6	45.41
Scutia myrtina	9.42	68.58	18.15	72.8	12.2	82.3	87.26

Table II: Concentration of Iron, Zinc, Sugar, Protein, and Vitamins in Some Wild Food Plants

Scientific name	Iron (Fe) Concentration (umol/g)	Zinc (Zn) Concentration (umol/g)	Sugar Concentration (ug/ml)	Protein Concentration (ug/ml)	Vitamin D Presence
<i>Bergeranthus multiceps</i>	78.40	0.42	9.50	194.00	N/A
<i>Bidens pilosa</i>	N/A	N/A	N/A	N/A	Present
<i>Carissa bispinosa</i> var. <i>bispinosa</i>	0.75	0.29	36.00	260.00	Not present
<i>Cussonia spicata</i>	77.60	0.25	14.50	118.00	N/A
<i>Eriospermum parvifolium</i>	3.11	0.15	35.30	29.10	Not present
<i>Ficus capensis</i>	1.13	0.20	20.90	15.00	Not present
<i>Ficus craterostoma</i>	0.52	0.36	5.60	30.80	Not present
<i>Harpephyllum caffrum</i>	N/A	N/A	22.50	N/A	Present
<i>Portulacaria afra</i>	4.10	0.80	2.50	29.50	N/A
<i>Scutia myrtina</i>	0.55	0.32	39.00	112.00	Not present
<i>Sonchus oleraceus</i>	9.04	0.81	N/A	75.00	N/A
<i>Urtica urens</i>	1.84	0.05	9.50	295	Present

- N.B. i) A test for Vitamin B complex was done for all specimens, however from the method employed, vitamin B content was non-detectable.
 ii) sugar concentration is the combined sugar concentration of glucose, fructose and maltose.