Medicinal plants in Makomereng, Pepela, and Mabua – Local use, knowledge and perceptions on sustainability

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Interdisciplinary Land Use and Natural Resource Management A
Copenhagen, Denmark
March, 2003
(9324 words)

Acknowledgments

We like to thank the people of Makomereng, Pepela and Mabua for being such wonderful people and for having permitted us to live among them to develop our project.

We also want to thank our African counterparts, Sarah Colvin (University of Natal), Lindokuhle Dlamini (University of Swaziland), Khumbulani Hlongwane (University of Durban Westville) and Modisane Moletsane (University of Botswana), without whom this project could not have been realized.

Further a special thanks to Gloria Mnyameni, our wonderful field guide who opened the doors to an incredible world, and to Mr. Mkangala and Mr. Simon (our interpreters) for their great efforts.

We are further grateful to Dr. Trevor Hill (Department of Geography, University of Natal) for his good directions and to Musa Khanyile (Department of Geography, University of Durban Westville) for his support during the field work. Also thanks to Dr. Nomcebo Simelane (Faculty of Social Science, University of Swaziland) and Mrs.Botepa (University of Botswana) for their comments during our stay in South Africa.

And last but not least we want to acknowledge Dr. Quentin Gausset and Christian Boehm (Institute of Anthropology, University of Copenhagen), and Dr. Andreas de Neergaard (Institute of soil science, Royal Veterinary and Agricultural University) for their support and comments during the process and realization of this project.

Abstract

This study investigates the importance of the local use and knowledge of the most prevalent medicinal plants used in the households in Makomereng, Pepela and Mabua. Further it was sought to determine villagers' perception on the sustainability of this resource. Social science methods such as questionnaires and semi-structured interviews were used to achieve the objectives, while three field walks were completed in order to identify some of the medicinal plant species growing in the region. Hundred-and-ten medicinal plant species were found in the study area, four of these were predominantly preferred by the people for self-treatment of pharmaceutical problems. It was found that many of the respondents rely on this resource as it is readily available. There is, however, a concern that the muti-market is affecting the availability of these plants, as it is generally believed that these plants will continue to be used in the future due to people's traditions and beliefs in the use of this treatment.

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I. Introduction

Indigenous medicine is widely used in South Africa, with reports of up to 80% of blacks in South Africa making use of traditional medicines (Holdstock 1978 in Mander, 1998). For the black population traditional medicine is considered a basic consumer good; it is based almost entirely on the use of medicinal plants that are the major non-wood forest product in South Africa (Mander, 1998).

In South Africa there are long-standing traditions of gathering and processing medicinal plants for the markets. The KwaZulu-Natal Province is an area of active harvesting, trade and consumption of medicinal plant, with Durban being one of the main markets in the area (Mander, 1998).

There are roughly six to seven million black people residing in the province of KwaZulu-Natal. Of these approximately six million people utilize indigenous medicine (Mander, 1998). In South Africa there are over 100,000 traditional healers practicing who use medicinal plants. Traditional healers are not gender specific, but a majority of the dealers are black women (Mander, 1998).

The demand for medicinal plants is immense both in its diversity and quantity and the demand for the plant exceeds the actual supply. The indigenous plants are generally harvested from wild plant stocks in KwaZulu-Natal, neighboring provinces and countries such as Lesotho (Mander, 1998).

The supply of medicinal plant products is critical not only for the welfare of approximately 27 million consumers in South Africa, but also for the people employed in the process. In 1998 roughly 20,000-30,000 people derived their income from the trade of indigenous plants.

Indigenous medicinal plants have various utilities and are employed both in the treatment of people and livestock. Healers often use the medicinal plants to reach a level of conscience, in which they can connect with their ancestors but the medicinal plants are also used by the general population in the everyday healing of minor and larger illnesses, such as coughing, stomachache, malaria, and chest pains (Kokwaro 1993).

Mander's report from 1998 showed that intensive harvest of wild stocks of the medicinal plant was a serious threat to the biodiversity. More than 700 medicinal plant species, were regularly traded in South Africa. Of these more than 400 were marketed within KwaZulu-Natal. The plant stocks and their harvesting were not managed and little cultivation took place. NGO's and delegates of the FAO in the area feared an increase in the use of destructive harvesting techniques in order to maximize harvest, would lead to the depletion of the wild stocks (personal conversation with supervisors; Mander, 1998).

Following up on the concerns of the NGO's and the delegates of the FAO, we will like in this research to highlight to what extent these concerns are recognized by the population of the areas of Makomereng, Pepela and Mabua. However, due to the importance of the medicinal plants as a resource, we will first identify the most prevalent medicinal plant species used in the study region. Additionally we will focus on the general uses and knowledge about these plants, and further estimate the sustainability of this resource in the region. In order to achieve these goals, our objectives will be:

II. Objectives

Main Objectives:

To investigate the importance of the local use and knowledge of the most prevalent medicinal plants used in the households in Makomereng, Pepela and Mabua. Further to determine people's perception on the sustainability of this resource.

Sub-Objectives:

- Identify the most prevalent medicinal plant species used by the people in Makomereng, Pepela and Mabua.
- Determine the different uses of the medicinal plants found in the area.
- Investigate how the knowledge is used and transmitted.
- Determine the perception people have on the availability of the wild stocks now and in the future.

Definitions:

Sustainability

- The use of a natural resource to the level that it can continue to renew itself (WWF, 2002).

Medicinal Plants

- Plants that are used to cure or solve physical and spiritual/psychological problems and situations.

III. Site Description

The study was conducted in the villages of Makomereng, Pepela (situated in Madlangala), and Mabua (Tsita). These are located in the Maluti District of the Transkei Region, which is part of the Eastern Cape Province. The study site is located on the foothills of the Drakensberg Mountains (approximately at 1700 m.a.s.l), belonging to the grassland biome (Meadows, 2000) with a mean annual precipitation of 710 mm and annual mean temperatures ranging from 1°C (July) to 26 °C (January) (SA SLUSE homepage, 2002). This area, however, is connected to a higher degree by its only road leading to the Province of KwaZulu-Natal.

The residents of Makomereng, Pepela and Mabua belong to the Xhosa and Sotho people (ILUNRM lectures on South Africa, Fall semester 2002), though people from Makomereng and Pepela speak mostly Xhosa, and the ones from Mabua in general speak Sotho.

IV. Methodology

The creation of the project synopsis as well as the preliminary questionnaires and preliminary questions for the semi-structured interviews was developed in Denmark by the Danish students. Changes and additions to the project were realized in South Africa by the South African, Botswanan, Swaziland and Danish students in cooperation (total of 7 students).

Before the fieldwork in the region of Madlangala the entire SLUSE group visited the medicinal plant market in Durban in order to get an idea of the diversity, quantity and ways that medicinal plants are commercialized.

Field methodology

Since most people residing in Makomereng, Pepela and Mabua are not proficient in English, one field guide and one interpreter were assigned each research team. Initially an even distribution between team members was sought in terms of academic field and nationality. However, when understanding that three students in our group spoke Zulu or languages related to Zulu, it was found more beneficial to take full advantage of the group size by dividing into three sub-groups in which one group did not have an interpreter but instead conversed directly in Zulu or in a combination of South African languages. A few changes took place during the week according to whom the team was to interview, but generally the subgroups looked as follows: 1) one student from Swaziland and two students from South Africa, 2) two Danish students and the field guide, and lastly 3) a Botswana student, a Danish student, and the interpreter.

The methods used in this study are:

- **Questionnaires / survey**

The questionnaires contained both basic household information questions as well as a combination of open-ended, close-ended, and ranking questions (see Appendix A). The questions in the survey were read and then translated by the interpreter to the respondents, as high illiteracy exists in the area. The questionnaires were tried out the first day in the field and changes had to be made due to repetition of questions and respondents having difficulties understanding the questions. The questionnaires took between 30-35 minutes, and depending on the degree of knowledge of the respondent it was prolonged into a detailed semi-structured interview that lasted approximately 1-1 1/2 hours in total. It was estimated that for the given period of time in the field (six to seven days), 30 questionnaires would be achievable. But in this period of time 46 questionnaires were obtained.

- **Semi-structured interview**

The semi-structured interviews were conducted on four main informant groups:

- Household members that after having completed a questionnaire were considered as knowledgeable people (3)
- Traditional healers (9)[1]
- Collectors / Gatherers (2)
- Others: Chief (1), Soldiers (1), Clinic (1) and Herbal Shopkeeper (1)

The first three groups overlap each other to some extent in that an informant often represent a household, but simultaneously is identified as healer or gatherer of the settlement. The informants were identified according to their own definitions. The interviewees were mainly chosen due to their large knowledge on medicinal plants, or because it was known that they had reasons to have insight in specific related topics such as how the restriction on gathering of medicinal plants was implemented (the chief) or if any illegal gathering was taking place (soldiers).

Different topics were selected with several tentative questions each (see Appendix B). These questions did not have a structured order in which they should be asked, as efforts were made to make the interviews develop as natural conversation. The estimated time for each semi-structure interview was between 45 minutes and one hour. The estimated number was approximately 15 semi-structured interviews, while 18 were achieved in this study. The data gathered with the semi-structured interviews were used to obtain specific type of information relevant to the study.

- **Field Walks**

Three field walks were realized in different regions. Two were conducted in the mountains to the Northeast and North of Makomereng with a male gatherer and with a male traditional healer, and one in the mountains to the North of Pepela with two female traditional healers. During the field walks a semi-structured interview was conducted. Plant specimens were collected during the field walk as well as information regarding the name and use of the plants. Observations of the method of collection were also made. Photographs were taken in all the steps of the field walks. The identification of the species' scientific names took place at the base-camp and in the post-face of the fieldtrip. The data from the field walks and the questionnaires were analysed using excel.

[1] There are different definitions for traditional healers. This will further be explained in our results.

V. Limitation

This section summarizes the methodological problems encountered in the field.

Only five working days and two half working days were at the disposal in the field, which is a very limited time for a baseline study of this kind to achieve trustworthy results. The authors are aware that previous research on the topic, have spend up to eight months building up a credibility level of the researchers, allowing for in-depth disclosement of knowledge in regard to medicinal plants (Mander, 1998). With only a limited time at hand our team was not able to assure this credibility. If constrained sincerity was present, it may have affected the quality of the information gathered in the interviews.

Lack of proficiency in the local languages may also in general terms have influenced the data collected. Particularly responses given to the questionnaires may reflect only parts of or simplifications of the actual answers, as these queries into more specific information which could have been interpreted differently by respectively translators and informants

Careful measures were taken, however, to discuss the questionnaires and interview questions with our guide and interpreter. In respond they took very good hold on the questions we were asking and the information we were trying to extract, and remained reasonably objective to the respondent's answers.[2]

In addition to imprecise and vague terms, we also found that some of the questions in the questionnaire were repetitive. However, this was detected and adjusted early in the field and should not have affected the results.

Because of the team's limited language and cultural knowledge, it was impossible to assess whether people spoke freely in our presence. Another obstacle was that the interpreters lacked full proficiency in speaking and understanding Sotho, which was generally spoken in Mabua. It was further suspected that respondents' answers sometimes reflected efforts to achieve the favours of the interviewers, hoping that financial support would be offered in return, rather than reflected their honest opinion or knowledge – or lack of the same.

In the second component of the objective, in which it was sought to assess the sustainability of the medicinal plants, we went into the field knowing that it was not possible to obtain quantitative data of this particular area, neither in literature. Therefore it was decided not to make field measurements (establish a sustainable frequency and intensity of harvest, availability, etc.). The team was entirely dependent on the questionnaires and interviews to ascertain the perceptions of the community whether or not current harvesting levels were perceived as sustainable. It was recognized that measurements of the actual sustainability of the medicinal plants in the area could not be taken due to time limitations and the team's limited knowledge of the vegetative history of the area. However, a rough estimation was made on the sustainability relative to a non-quantified base by means of observations in the vegetation in the general area as well as during the field-walks.

[2] One of our interpreters had a higher status and some authority in the area, while simultaneously involved with the limitation and regulation of the gathering of medicinal plants. Though he understood the questionnaire well enough, he unfortunately took the liberty of re-phrasing the questions according to his own terms, which resulted in the respondents being less willing to answer openly and honestly. Due to this effect he was only used the first day in the field.

In the post-face of the study it was realized that more qualitative information related to sustainability could have been gained had we phrased the questions more specifically. Most disturbing to the reliability of this data was a miscommunication in regard to the frame of the interval we had in mind when querying into the perceived changes in the availability of the plants. In the questionnaire where we were referring to a time-frame of approximately five years, our respondents tended to answer in terms of seasonal differences.[3]

Reliability of Data

As stated earlier the data of this research relies largely on informants' personal perceptions, their sense of confidence toward the researchers, and their willingness and ability to disclose truthful information. However, the atmosphere during the data collection generally was perceived positive by the interviewers, who made efforts to keep the level of conversations relaxed and informal. Hoping to communicate equality and comfort between all actors involved in the survey in the presence of research members, respondents were strongly encouraged to interrupt and question the interviewers during the survey sessions.

Though our guide and interpreter did very well trying to stay impartial to the questions we asked them to translate, it cannot be ignored that they both were members of the community in which we resided during our stay. Not only did they both have personal knowledge and experiences in regard to the local gathering and use taking place of the medicinal plants, but as locals they knew and were known by most of our informants. Though this familiarity came very handy when we needed to find good potential informants it may also have biased the selection of the representatives of the different informant groups. Having lived in this area for years, the helpers were likely to know both legal and illegal gatherer, and since they as guides were required to be well informed about the official policies in the area, it is likely that situations were avoided which could have revealed sensitive information or induced tentative threat upon village members.

In addition the visit to this area by the SLUSE project was an event subtracting more money into the area in a couple of weeks, than what was generally achieved over the course of several months. It is thus clear that the present of our research groups largely affected the lives of the inhabitants in the area, while possibly sparking the hopes of many community members to achieve personal goals during our stay. This may not only have affected our informants, but also the people with whom we worked.

Though the interview questions were discussed in length before the fieldwork was initiated, it could not be avoided that the team members, being fairly inexperienced in fieldwork and furthermore coming from very diverse academic back groups as well as nationality, were inconsistent in the way the questions were proposed to the informants. The diversity of team members has without doubt meant that even if informants' answers were translated correctly by

[3] Besides a too vague phrasing of the question on our behalf, it is further possible that the general perception of time between our respondents (primarily agriculturists whose everyday life largely worked around seasonable changes), and our own (urban students whose calendars works around dates and exact hours) differ greatly due to cultural differences in the perception of time.

the guide and interpreter, the actual understanding of these answers – noted by the researchers – can have varied greatly from individual to individual.

Furthermore since few team members had extensive training in the execution of interviews, data can have been lost due both to team member's incapability of noting down the subtracted information as well as the potential that leading questions were proposed having excluded unexpected answers.

What was changed?

Interviews were designed without full knowledge of the background to the study areas. This resulted to some of the planned approaches not being practically implemented at all. The team had hoped that the NGOs and Freelance Consultants could offer relevant information regarding the characteristics of the indigenous vegetation in the area. The team thought it a possibility that these players already knew different plants that the local communities used in their healing, and perceivably were able to help us identifying the commonly mentioned plants species with their scientific names. It was further hoped that these organization members, having spend years in the field, could help us pinpoint potential informants in the communities

However, colleagues from other groups who had interviewed a member from the only NGO in the area, the Environmental Development Agency (EDA), advised our team to use other sources of information as this official instance had showed little knowledge in the area of medicinal vegetation. Upon arrival to the study area it further appeared that there were no freelance consultants in the area, which fuelled the final decision to cancel this part of the intended survey.

The team had to use the limited time in the field the best way possible with the resources available. However, in the post face of the fieldtrip, one could have wished that the team had been able to locate official workers who could have confirmed or refuted that a concern in regard to the preservation of medicinal plants in fact was in place.

Another planned approach not implemented in our report was the measurements of GPS points during the field-walks. We would have transferred this information onto maps, but in the post-face we found that this measure did not meet/reach our objectives. Furthermore GPS points were taken only in two field-walks, as it usually was impossible to know much time in advance when our team would be invited on a field-walk, and thus it was difficult to arrange with other groups to have the GPS measurement available.

VI. Results and Discussion

This section presents the results of the study, discussing what importance the medicinal plants have to the people of Makomereng, Pepela and Mabua. Firstly the most prevalent medicinal plants found in the study area are presented, together with the different uses found in general and the preference in their utilization. Furthermore the knowledge related to these medicinal plants is discussed as well as the informant's perception on the sustainability of this resource.

Holdstock (1978, cited by Mander, 1998) mentions that Kwa-Zulu Natal is a particular active area for harvesting of plants used for indigenous medicine in South Africa. In the area of Makomereng, Pepela and Mabua it was found that the harvesting of medicinal plants is performed by 74% of the households included in our research (see Table 2).

The study area is located in the grassland biome, presenting features as uniformity in vegetation structure formed by grasses or/and hemicryptophytes (bud-bearing shoots at the soil surface) being the dominant layer, and being dependent basically on climatic conditions, especially the occurrence of frost, precipitation, grazing and fire (Meadows, 2000). During this project, approximately 110 medicinal plant species were mentioned in the villages of Makomereng, Pepela, and Mabua, many of which were hemicryptophytes typical of the grassland biome (See Appendix C). Of these, only 64 species were identified by their scientific names meanwhile the other 46 species could not be identified, as they were only mentioned by their respective Sotho, Xhosa, or Zulu, without a sample of the actual plant itself. As a result it is possible that some of the unidentified plant species are the same specie as one identified.

The most mentioned and preferred plant in the households of Makomereng, Pepela and Mabua is *Alepidea amatymbica* [ikhathazo (z), lesoko (s), iqwili (z), giant alepidea (e)] mentioned in 67% of all the questioned households (see Figure 1). The next most prevalent species mentioned by respondents were *Xysmalobium undulatum* [ishongwe (z), Leshogwa (s), bitterwortel (e)] mentioned in 34% of them all, *Artemisia afra* [umhlonyane (z), wormwood (e)] and phateyangaka (s) only used by approx 25-35% of the interviewed households. Other plants found in the area were used by less than 15% of the households interviewed[4] (see Appendix D).

The four most prevalent species used in the households are solely used for pharmaceutical purposes and are both used and collected by household members. The traditional healers and commercial gatherers mentioned only three of the most prevalent species – not including *Artemisia afra*. This may be because the plant is commonly cultivated in respondents' homegardens and further grows wild nearby the houses, making it easy for villagers themselves to get hold on the plant. Therefore this specie may not have special or commercial value to the traditional healers and commercial gatherers, as it is unlikely that their expertise was sought for this plant. In contrast *A. amatymbica, X. undulatum* and phateyangaka, both mentioned by traditional healers and gatherer, have to be collected in the mountains with *X. undulatum* being the only one that can be cultivated.

[4] As shown in Figure 1, there was seen a decline here in the use of these species.

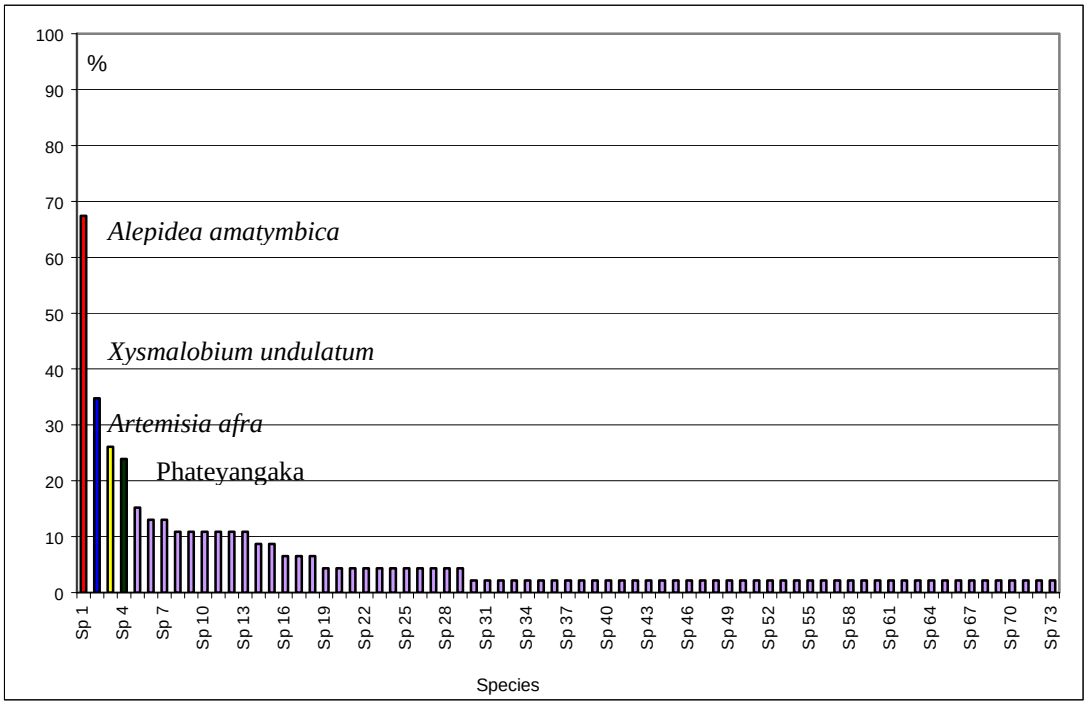

Figure 1. Percentage of species preferred in the households

Of the prevalent species used in the study area, Mander (1998) mentions *A. amatymbica* as the medicinal plant second most frequently demanded by consumers in the Durban market, and Coetzee *et al*. (1999) mentioned *X. undulatum* as a phytomedicinal plant retaining a position in international trade. The fact that these four species have an emmense value on an international level, supports our findings that they are commonly collected and used by the population in the region of the study area.

In general it was found that in the study area the different medicinal plants were used mostly for pharmaceutical purposes (73%) meanwhile others were used only for spiritual purposes (13%) or for both (9%) (See Table 1).

Use	Percentage
Spiritual	13
Pharmaceutical/Spiritual	9
Pharmaceutical	73
Unknown	5
Total	100

Table 1. Percentage of the different uses of medicinal plants

The physical ailments that the informants mentioned include among others head-, ear-, tooth-, and menstruation pains, swollen feet, flu, coughing, chest pains, and cures for sexual transmitted diseases, such as AIDS and “cauliflower” [red genital warts (condolyma)] and cancer. The spiritual ailments or situations respondents wanted to influence included a potion for keeping the spouse faithful, for marrying a particular person, for attracting spirits, for obtain good luck or respect from someone, or to chase away or prevent ones household to be struck by lightning’s (see Appendix C). Most of the species mentioned had first to be prepared in certain ways before use, i.e. boiled (e.g. *Hypoxis gerrardii* clean the body by vomiting), soaked in cold water (e.g.

Plectranthus grallatus to scare off evil spirits) or mixed with other species (e.g. a mixture of *Elephantorrhiza elephantina* and *Eucomis autumnalis*, for treatment of stomach ache, and diarrheas) (see Appendix C).

People collecting medicinal plants (74% of the informants) mostly utilize species that treat pharmaceutical or physical ailments. More that half of those who use medicinal plants prefer to treat themselves (59%) – mainly with plants they collect themselves – rather than consulting the clinic in Matatiele (28%) or going to a traditional healer (13%) (see Table 2 and 3).

Collection of medicinal plants	Percentage
Yes	74
No	26
Total	100

Table 2. Percentage of respondents collecting medicinal plants

Preference	Percentage
Self Treatment	59
Clinic	28
Traditional Healer	13
Total	100

Table 3. Percentage of the respondents preference when treating ailments

The high percentage of people (59%) mentioned that they prefer to treat themselves due to the fact that they can find the resource locally without paying for it, and because it is their tradition and they believe in the power of the medicinal plants.

Before going to the field it was suspected by the research team that reasons for using medicinal plants in rural areas of Africa, could be correlated to the level of income on which people had to live. It was speculated that greater use of indigenous medicine would correspond a lower income level as it was perceived that economically better-off community members would have been more in touch with urban areas and thus western medicine and health system. Though not an unusual assumption, as it turned out this hypothesis proved far from true.[5]

Though income level may have an influence on the preferred health system, it should be noted that a consultation with an indigenous healer often far exceeds the costs at the clinic. However, as was found in the study, few people consulted a healer, but rather took use of their own knowledge of the plants. According to the findings of Mander (1998) self-treatment is by far the cheapest remedy available, but as illustrated in Figure 2., there was not found a positive correlation between the use of medicinal plants and respectively source- or level of income. Few informants in our study had an income

[5] According to Mander (1998) it is a common mistake on the behalf of experts and authorities to believe that a "high demand for indigenous medicine by the black population in South Africa is due to low income, poor education opportunities, high costs of western medicine, and the lack of clinics"

level below R400 (9%), but 50% of these did not use medicinal plants, while the greater part (approximately 74%) of those having an income between R400-R800 (51%) used indigenous medicine.

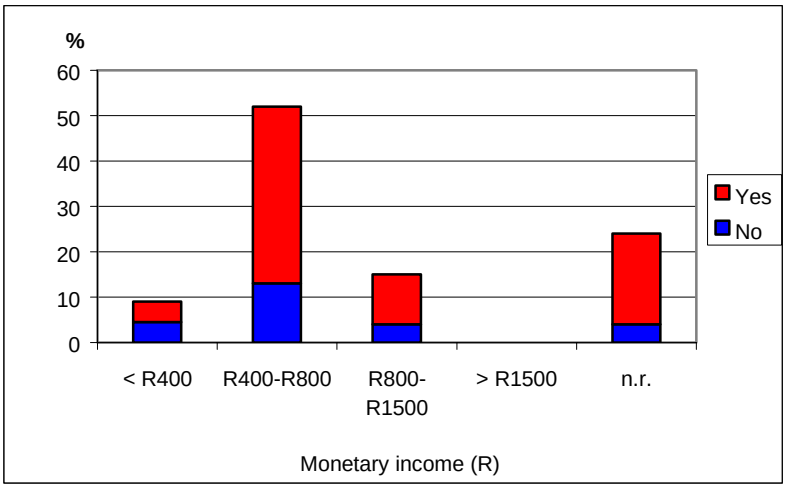

Figure 2. Correlation between monetary income and percentage of respondents using medicinal plants

Even though self-treatment is a cheaper treatment compared to the clinic and the traditional healer, the respondents that preferred consulting a traditional healer (13%) explained that they used this more costing service because they believed in the powers of the healers. The traditional healers have knowledge that other groups do not possess, so they are required in special situations (e.g. stronger protection of a house from lightning's, cleansing a body from evil spirits). However, other respondents do not use the traditional healers because sometimes they cannot afford them. . The prices of healers' services vary from R10 for curing a common ailment to R1500 (or an equivalence paid in kind) for more comprehensive treatments (e.g. curing an entire family from headaches). When seeking help people in general travel to other villages to consult a traditional healer. Informants expressed that a higher confidence is achieved with someone who did not already know their life history.

It was found that despite cost-free consultations at the clinics supported by the South African health system (Government Communication and Information System 2002-2003) only 28% of the respondents used this facility. Respondents stated that the reasons for this was that it was time consuming and expensive to go to the clinic. The location of the study area is several kilometres from the nearest clinic (Matatiele), and transport to get there is both time- and money consuming (R11 each way by the public buss). Patients often wait several hours in order to get attended, and though the consultation is free for certain age groups, then there is an obligatory fee for the acquirement of medicine.

In addition there is a lack of mobile health services in the region due to the fact that the study area is situated in the Eastern Cape Province and the nearest clinic (Matatiele) belongs to the province of KwaZulu-Natal, so the clinic does not provide this service to the study site.

As it can be seen in Table 3, self treatment is widely used among the people in the study area. However, for people in the households to use this resource sufficiently, they have to acquire the knowledge of how to find and use the different medicinal plant species.

It was found that the representatives of the household are either the head of the household or an individual of primary kinship, i.e. the wife, mother, daughter, son or daughter-in-law. Kabeer (1994) stated that traditionally the men are the official head of the household, but the women are de facto the ones in charge of the general welfare of the family. When family members are ill or in need of medicinal care, the women are the ones most likely to take responsibility of the situation. This is largely reflected in the gender composition of the household representatives in our studying which 78% of the respondents were females and only 22% were men. In most cases (except when a specialist was involved) it was women who were put forward when it was requested to talk to the household member most knowledgeable in the field of medicinal plants participated in the survey. However, yet another factor possibly contributing to this gender bias, was that in the majority of the households included in the survey the husband had passed away. In these instances it was commonly the widow who held the authoritative position.

Often the knowledge is passed down through generations, but the knowledge can also be obtained from a knowledgeable people, the neighbour or a friend. In response to the survey question upon which the informants were asked by whom they were taught their knowledge about traditional medicine, they generally responded that they were taught by one of their parents or by elder members in the family.

It was found quite common that young boys knew how to collect general medicinal plants for ordinary everyday ailments. However, when more specific plants were needed, it was the older women who had sufficient knowledge of where the plants could be found. Also the commercial gatherers are persons whose knowledge has been transmitted to them usually from elder generations or other knowledgeable people. They have specialized knowledge on how to find and collect medicinal plants and use this knowledge to harvest these plants for commercial purposes for both rural and urban markets.

The other way to obtain knowledge about where to collect and how to use different species of medicinal plants is in a more spiritual manner or a combination of the two. An example where the healing abilities were passed both spiritually and through generations, were given by an elder traditional healer who had been practicing for more than 23 years. He started getting visions when he was living in Cape Town and began shortly after to work as a traditional healer. His father had also been a traditional healer with very strong connections to the ancestors, and it was believed that the elder informant had inherited his father’s abilities. He further disclosed to the interviewees that his daughter recently had showed signs that she too had received "the spirit".

Some people receive their knowledge from their ancestors, often falling very ill and in this moment they begin the process of becoming a traditional healer. It is generally through visions or dreams that prospective healers are enlightened by where to collect and how to heal with medicinal plants. By following instruction envisioned to them they terminate the illness and complete the calls allowing them to practice as healers. One

female informant recognized as a traditional healer, was in her dreams shown a person deemed to give her training. As soon as she responded to the calls, she started feeling better. After the illness has been terminated, the visions continue to appear in form of dreams and voices in the healers' daily lives. The more visions and spiritual contact a healer has, the stronger will he be regarded to be. Thus despite healers' proficiencies to cure more or less the same range of diseases, there appear to be little recognized competition between healers as they often specialize in different ailments or dilemmas[6].

Traditional healers can also obtain some of their knowledge by direct transmission from another traditional healer. He/she can also transmit his/her knowledge to someone else as a part of his practice (service).

The term *Traditional healer* is used in many different situations covering the chores of western physicians, psychiatrists, counselors, and priests (Mander, 1998). The FAO Report (Mander, 1998) is using the term "indigenous healer" explaining that the name "traditional healer" does not completely encapsulate the healing practices, as these, though originating in Africa, are "not purely traditional". In other discussions on same topic we have found the terms "traditional healer" (WHO, 1998), "indigenous healer" (Mander, 1998), as well as just "healer" (Mander, 1998; Beek, 1992) being used interchangeably.

During the field study we came across that additional terms which can be included under what FAO (Mander, 1998) considers "traditional healers". These terms are Inyanga and (In)Sangoma (IzaNngoma, Isagoma). The definitions of these two concepts are highly contestable, as different informants have different views to what the terms refer. Unfortunately we were not persistent in querying into our informants' definitions of these concepts, and when asking general community members among who we lived, we found that they often did not have an answer. We have gathered the most prevalent definitions offered by members of the communities for the purpose of this study, but ask the reader to bear in mind that in the area of our study there do not appear to be a common knowledge and hence definition of the concepts. The traditional healers interviewed in this field study in Makomereng, Pepela and Mabua were both women and men and the healers are not confined to a particular age group.

Sangoma: Is someone who possesses ancestralspirits and will have to have had a call from the ancestors in order to practice. Usually through a vision the person is told by a spirit that he must go for training (*kuthwasa*) and at times also who his trainer will be. Once one is through with the training, he is regarded a full *Sangoma*, and is capable to:

- Diagnose people of their illnesses
- Predict peoples' futures, as they can foresee what can happen in peoples' lives and then advice them accordingly, and
- Prescribe a medicament to treat an ailment

[6] Mander (1998) mentions that there is high secrecy in the healers' individual knowledge partly due to competition. However, we found in our study that healers within same community boarders often co-operated, and believed they were more or less healers in particular fields (e.g. treatment of infants, boys' initiations, foretelling, etc.). Few healers insinuated that their knowledge and spiritual powers were beyond those of their colleagues.

Inyanga: Is a traditional medical practitioner who prescribes and dispenses herbs/traditional medicine to patients according to their different illnesses. In three interviews we were confirmed that an *Inyanga* is a fully trained *Sangoma* whereas *Sangoma* is someone who is still in the process of training to become an Inyanga. It should be noted, however, that all of these interviews were executed in cooperation with the same interpreter who adhered to this definition

Some informants insisted that there is no difference between the two concepts while others are of the view that *Inyangas* and *Sangomas* have very diverted origin of their knowledge. In three interviews it was explained that an Inyanga is a fully trained Sangoma whereas Sangoma is someone who is still in the process of training to become an Inyanga. After receiving calls guiding him to fulfill certain tasks that furthers his knowledge and healing capacity, hie will in time be able to exercise as an Inyanga. It should be noted, however, that all of these interviews were executed in cooperation with the same interpreter who adhered to this definition

The knowledge of where to collect the different species of medicinal plants and the use of them is not equal for the different groups, e.g. household members, traditional healers and commercial gatherers.

As earlier mentioned, approximately 110 medicinal plant species were found in the villages of Makomereng, Pepela and Mabua. Of these, each household mentioned in average five species and the traditional healers and the commercial gatherers mentioned in average 20 species. This gives us an indication that these two groups knowledge includes a broader array of species than what is found in the households, due to they live from using this knowledge. Of all the species mentioned, 19 were common to both groups including three of the most prevalent medicinal plant species found in the study area.

This study found that at least 110 species of medicinal plants are present in the region and that 74% of these are collected by the households, largely used for pharmaceutical purposes (73%). If the informant sample in this study represent a general trend in the villages, then it is likely that more than half of the population in the study area (59% of the informant in this study) consistently treat themselves with medicinal plants. Since locally collected medicinal plants in addition comprise the cheapest treatmeant of health- as well as social problems, it is clear that this resource is of much practical importance to the people of Makomereng, Pepela and Mabua. These findings added to the fact that there is a longstanding tradition and strong beliefs in the powers of the this region. For that reason measures were tried in order to understand the perceptions people have on the present and future availability of the wild stocks.

Mander (1998) stated that the intensive harvest of wild stocks of the medicinal plant is a serious threat to biodiversity with approximately 400 medicinal plant species being regularly traded in markets within KwaZulu-Natal. NGO's and delegates of the FAO in the area feared that an increase in the use of destructive harvesting techniques in order to maximize harvest, would lead to the depletion of the wild stocks (personal conversation with supervisors; Mander, 1998).

Contrasting Mander's findings (1998), it was uncovered that 35% of the respondents thought that the plants were increasing in abundance and that changes in access to the resource was merely dependent on seasonal and weather changes. Furthermore 22% had not seen any noticeable change while 22% of the respondents had no knowledge about the availability of medicinal plants in the region. . The question asked, however, in order to gather this information, was confusing to the respondents. They tented to think of causes affecting the availability of plants in terms of changes taking place during the year, whereas the study aimed at achieving a spectrum of perceived changes having occured in the actual amounts of plants over several years.[7]

However, other 22% of the respondent showed concern and said that the plants were decreasing in abundance. When respondents were asked how the muti-market[8] was affecting the availability of medicinal plants in the region, 50% responded that the muti-market had reduced the availability of wild stocks, and most people in the region were aware that exploitation was taken place of the wild stocks due to the muti-market (see Table 4). However, near one third (30%) of the respondents were not convinced whether or not the muti-market induced a negative effect on the medicinal vegetation, while others again believed the market added no stress to the local vegetation (15%).

Peoples perception on the effect of the Muti-market	Percentage
Reducing	50
Does not know	30
No difference	15
Improving sup	2
Other	2
Total	100

Table 4. Peoples perception on the effect of the Muti-market

Occasionally it was stated that the sustainability had improved since measures, taken in 2001 in order to minimize commercial harvesting, required all commercial collectors to obtain a stamp from the *Inkosi* (the chief) before any commercial collection took place. It was further determined that the quantity of medicinal plants collected at one time should not exceed 5Kg.

Prior to the measures taken in 2001 both locals, gathering for independent trade or hired by commercial dealers, as well as commercial gatherers from outside, collected and transferred large quantities of medicinal plants to markets as far as Durban and Pietermaritzburg. Local community members feared that commercial harvesters eventually would penetrate the area in large trucks and deplete the area completely for its medicinal vegetation. The areas rich and diverse vegetation was further considered a large tourist attraction by a local project hoping to promote tourism in the area. Therefore the project appealed to the *Inkosi* (the chief) of Madlangala that commercial harvesting was stopped due to its potential to harm the project's efforts to bring money into the area. A meeting was held and the measures decided were later disseminated to all relevant stakeholders, including commercial harvesters, local traditional healers, soldiers employed by the government to provide security in the area, and the forum

[7] Please see section V. on limitation.
[8] Market for commercial trade of medicinal plants, animals, tinctures, etc.

group who was responsible for monitoring the harvesting process. Later during the year, yet a meeting took place that aimed at devising a strict mechanism and monitoring systems on the use of medicinal plants was held.

It was not possible to confirm this information with all stakeholders but when the **soldiers** were asked about the meeting in 2001, they appeared uninformed to the matter. The soldiers were aware that collection of medicinal plants took place, but had never stopped anyone from removing medicinal plants from the area. They were only hired to monitor stock theft and *dagga (*marihuana) smuggling and claimed that they had not heard about a control of medicinal plants.

When the *Inkosi* was queried about these actions, he exhibited a strong belief that no stealing of medicinal plants was taking place neither day or at night. He argued that all villagers were adhering to the resolutions taken at the meeting in 2001, and emphasized that a clear procedure was in place to control the harvest of medicinal plants. However, he only listed one disciplinary procedure actually in place should people break the agreement, compromising the calling of an *imbizo* (community meeting) that in turn should deal with the case and pass a verdict. Penalties varied according to the severity of the offence, but should most commonly be executed in fines.

Though several informants, including one of our guides, confirmed that the meeting had in fact taken place, then there were not a common consensus as to why it was held, and to what extent the restrictions were followed. Contrary to the claims of the *Inkosi* the answers we accumulated through interviews and informal conversations with other informants indicated that the effect of the 2001 meeting, though helpful on the mass exploitation of medicinal plants, limited little on the actual accessibility and opportunity to harvest. The restraints were highly left to collectors' own consciousness, with the result that large quantities of illegal gathering still took place especially during the night.

Interestingly a general dealer that sold herbal medicine in Matatiele mentioned that he had actually noticed a decline in the abundance of people who collected medicinal plants locally and who need to sell them in the shop. He thought this was due to the fact that some species were now protected.

Summing up it seems that actual restrictions are in place which to some extent limits the legal commercial trade of medicinal plants occurring prior to 2001. However, indirectly the restrictions may have encouraged an illegal trade of medicinal plants for people who previously relied on this resource as their only source of income.

Hence, the collection and use of medicinal plants today in the area of Makomereng, Pepela and Mabua remains an important activity. Therefore the perception of the respondents in regard to future uses of medicinal plants, together with an understanding about the harvest impact on these plants, can be used to assess the importance of the sustainability of this resource.

The perception about the use of medicinal plants in the future was that most of the respondents would continue to use medicinal plants (65%) (see Table 5). Some informants stated that western medicine did not work and that traditional medicine was easy to get and effective. Others responded that they will continue to use indigenous

medicine because it is the traditional health system with which they feel comfortable and in which they believed in. Twenty percent of the respondents did not know what will happen in the future, while another 13% believed that people will stop using medicinal plants in the future. This was believed to be due to at the fact that when the younger generation return after having lived in larger cities, they will have lost faith on traditional medicine. Thus there seems to be a concern that in the future the younger generation will not be interested in using medicinal plants and that the knowledge of their use will be lost.

Future scenario	Percentage
Continue using	65
Does not know	20
Stop using medicinal plants	13
No response	2
Total	100

Table 5. Peoples perception on the use of medicinal plants in the future

Another notable matter of importance in regard to a sustainable use of medicinal plants, is to determine the impact on the plants that harvesting has. Cunningham (2001) explained that the harvesting impact on a plant depends upon the frequency and intensity of the harvest, and that the effect of harvesting on individual plants will vary according to which part of the plant that is used.

In Table 6 it can be seen that of 59% of the species found in the study area, the root is collected and used for medicinal purposes. Sometimes it was mentioned, though only rarely confirmed, that only a part of the root was dug up so that there was still something left to harvest in the future. Additionally it was mentioned that for some species the whole plant had to be dug up in order to harvest the root (5%). This was also the case for the harvesting of the bulbs (6% of the species had bulbs).

Part of the plant used	Percentage of plants
Roots	59
Whole plant to get the roots	5
Leaves	26
Whole plant	13
Bulb	6
Bark	4
Flower	3
Different parts	15

Table 6. Percentage of plants and the different parts of the plants used for medicinal purpose

Cunningham (2001) concluded that assessing the extent to which harvesting affects underground plant parts is difficult because the impact on root damage due to harvesting, depends both on the type of root harvested, the physical state of the plant, the rooting depth and distance, and the intensity and frequency of damage affecting the plant.

In addition, it was further found that in 14% of the species, the entire plant is used for medicinal purposes, i.e. the whole plant is harvested. Cunningham (2001) explains that in cases where the whole plant is harvested, it is very difficult to determine the impacts unless the harvesting occurred and is measured within a permanent plot (Cunningham, 2001). This was not realized in this study.

Furthermore it was found that in 29% of the species the leaves were used for medicinal purposes, that in 4% the bark was used, and the flowers in 3% of plants mentioned (see Table 6). Cunningham (2001) stated that the harvesting of leaves, fruits or flowers has far less impact on individual plants than has the harvesting of the roots, bark, stem or the removal of the entire plant (Cunningham, 2001).

Still the question whether or not the current harvesting practices in the study area is sustainable is a very difficult and complex issue. As seen above, most of the medicinal plants mentioned were harvested for their roots. But it was not measured in this study how big the impact of this kind of harvesting had on the plant population. In addition, the impact of the harvesting of the entire plant or of different parts of the plant harvested at the individual species, at the population or at the community level is something that we were not able to answer in this kind of study.

This study merely identified some medicinal plants harvested in the area of Makomereng, Pepela and Mabua and which part of the plant that was harvested. The results on sustainable use relied largely on informants' personal opinions in regard to the resource.

The World Wildlife Fond in 2002 stated that one way to decrease the pressure on wild stocks of medicinal plants is cultivation. However, only a small percentage of medicinal plants are cultivated in the area of Makomereng, Pepela and Mabua. Four percent of the questioned households cultivated or had tried to cultivate medicinal plants in their gardens, though most respondents showed interest in the possible cultivation of some medical plants in the future. The cultivation, however, usually had not succeeded due to the drier conditions in the gardens compared to their natural habitat in the mountains. In total only four species mentioned in the survey had survived cultivation in the gardens (see Appendix C), being two of these the second most prevalent medicinal plants used in the households.

It is worth having in mind, that if plant stocks and their harvesting are not managed and little cultivation takes place, intensive harvesting will be a serious threat to the biodiversity of the area. As a result neither plants stock nor harvesting method cannot be regarded sustainable (Mander 1998).

VII. Conclusions

In the area of Makomereng, Pepela and Mabua it was found that approximately 110 medicinal plant species were used. Of these, the most prevalent and commonly used medicinal plants are (declining in importance according to order) *Alepidea amatymbica*, *Xysmalobium undulatum*, *Artemisia afra* and Phateyangaka used by up to 67% of the households interviewed. The remaining and less preferred species mentioned in the study were used by less than 15% of the households interviewed.

The majority of the medicinal plants found in the study area were used for pharmaceutical ailments (physical ailments and common sicknesses such as flues, stomach-aches, and headaches) and to a lesser degree for spiritual purposes (good luck, faithfulness, and lightning protect tion). Some plants could be used for both pharmaceutical and spiritual purposes depending on the way they was prepared (e.g. to calm swollen feet as well as to scare off evil spirits). The four most prevalent plants mentioned above were solely used for their pharmaceutical qualities.

The knowledge of local medicinal plants in the study area is primarily used by households for self-treatment. This knowledge is commonly transmitted in three ways: 1) from an elder generation to a younger generation, or from a distant kin; 2) from a person outside the family (e.g. friend, neighbour, or collegeau); or/and 3) from traditional healers or commercial gatherers (both usually in terms of a paid service). The traditional healers use their knowledge on medicinal plants to cure or change physical or spiritual ailments or situations to make their daily living. They receive their knowledge through spiritual communication with their ancestors or from the training by other traditional healers. The commercial gatherers use their knowledge to harvest medicinal plants to sell them at different markets and this knowledge is transmitted to them from generation to generation or from a knowledgeable person.

From the interviews and questionnaires it was found that the informants largely depend on the plants. In total 75% of the interviewed households stated that they or someone else in the household collect medicinal plants locally for their values as remedies curing spiritual and physical ailments. A broad variety of utilized plants was identified.

The general opinion about the availability of medicinal plants was by approximately half of the respondents that collection for muti-market has reduced the availability of the wild stocks in the region. Even though measures were taken in 2001 to stop the commercial harvesting of medicinal plants in the region respondents in general indicated that these measures have not succeeded preventing illegal harvesting, but only control that harvest which is already unconcealed and legal. However, the other half of the respondents either believed that the muti-market has no or little affect on the availability of the local wild stocks, or held little knowledge about the matter.

More than 50% of the respondents believe they will continue to use medicinal plants in the future because this traditional source of treatment is readily available, it is free, and its curing abilities are highly recognized.

The facts that a wide range of species of medicinal plants were used in the region, that a high percentage of respondents collected plants mostly for self treatment of

pharmaceutical ailments, and that self-collection is the cheapest treatment available in the area compared to westernized clinics or traditional healers, it can be concluded from this study that a larger part of the population in Makomereng, Pepela and Mabua rely on medicinal plants on equal terms with other basic consumer good such as food and shelter.

The use of medicinal plants goes back many generations and a still strong and overt belief in the powers of this resource as a health remedy, demonstrates the importance of the availability of these plants to the people of the study area. The sustainability of these medicinal plants must thus be regarded of practical high value in this region.

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Appendices

Medicinal plants in Madlangala

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South Africa, Madlangala
November 2002

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I. Introduction

Indigenous medicine is widely used in South Africa, with reports of up to 80% of blacks in South Africa making use of traditional medicines (Holdstock 1978 in Mander, 1998). For the black population indigenous medicine is considered a basic consumer good, and the medicine is based almost entirely on the use of medicinal plants (Mander, 1998). Medicinal plants also comprise one of the major non-wood forest products (Mander, 1998).

In South Africa there are long-standing traditions of gathering and processing medicinal plants for the markets. The KwaZulu-Natal Province is an area of active harvesting, trade and consumption of medicinal plant, with Durban being one of the main markets in the area (Mander, 1998).

The importance of indigenous medicine in South Africa can be seen in the light of South Africa's black population. In the province of KwaZulu-Natal there are roughly six to seven million black people. Of these approximately six million people utilize indigenous medicine (Mander, 1998). There are over 100,000 indigenous healers practising in South Africa using medicinal plants.

The demand for medicinal plants is immense both in its diversity and quantity and it exceeds the actual supply. Indigenous plants are generally harvested from wild plant stocks in KwaZulu-Natal, neighbouring provinces and other countries (Mander, 1998).

The supply of medicinal plant products is critical not only for the welfare of approximately 27 million consumers in South Africa, but also for the people employed in the industry. Roughly 20,000-30,000 people derive their income from the trade of indigenous plants. Most of the dealers are black women who also are the most marginalized group in South Africa (Mander, 1998). If the trade of medicinal plants are in decline it will be a threat to these women.

Indigenous medicinal plants have various utilities and are employed both in the treatment of people and livestock. Healers often use the medicinal plants to reach a level of conscience in which they can connect with their ancestors, but medicinal plants are also used by the general population in the everyday healing of minor and larger illnesses such as cough, stomachache, malaria, and chest pains (Kokwaro 1993).

Intensive harvesting of wild stocks is a serious threat to the biodiversity. More than seven hundred medicinal plant species are regularly traded in South Africa. Over four hundred of these are marketed within KwaZulu-Natal. The plant stocks and their harvesting are not managed and little cultivation takes place. Further there is an increase in the use of destructive harvesting techniques as a consequence of maximized harvest (Mander, 1998). The depletion of the wild stocks is a major concern to the NGO's and delegates of the FAO in the area (personal conversation with supervisors, Mander, 1998).

Madlangala is a village located in the Eastern Cape Province. However, its infrastructure connects it in a higher degree to the province of KwaZulu-Natal since the (only) main road from the sub-villages of Madlangala is going between Madlangala and KwaZulu-Natal Province. Madlangala is composed by the three sub-villages: Mekomerang, Pepela and Goxe. The population of Madlangala consist of people belonging to the Xhosa and Sotho people (ILUNRM lectures on South Africa, Fall semester 2002).

II. Objective:

Investigate the local use and knowledge of medicinal plants in Madlangala.

III. Profile of informants:

Who: *Women, healers, gatherers* and the *local NGO*

Trevor Hill mentioned that our research teams' cooking lady of the town Mekomerang may be able to identify potential informants to us. We hope that she will be our key informant. We are expecting four particular groups to be good potential informants in this project: the women of the village, the healers, the gatherers and the local NGO. We have put these four groups into focus as we expect them to be the once with most knowledge in the field, however any other potential informants such as the children from the households and the elders will naturally be taking into account if they turn out to be helpful to our project. We are aware that the first three groups are likely to overlap each other, so that for example one informant may be a woman of the household, but may as well be identified as healer of the settlement. We hope to execute our fieldwork in a stepwise process that will bring about a "snowball" effect. That is, we will start out with the women, identified to us by the cooking lady. Then we hope that these women can lead us onto whose whom they ask for help when the situations go beyond their own knowledge, for example the healers. Both the healers and women are likely to be able to identify who are gathering the medicinal plants. For instance it could be themselves, his or her assistance, children, family member, or someone unrelated to the informant. We hope that the cooking lady not only will be one of our key informants, identifying other potential informants, but that she also will agree to represent the general knowledge-pool of women. The local NGO can also give us some indication of some other informants in the region as well as some other relevant information about harvesting techniques, quantity harvested, etc.

Women:

Although the men are the official head of the household, the women are defacto usually the ones in charge of the general welfare of the family (Kabeer 1994). Therefore when family members are ill or in need of medicinal plants she will most likely to be the one responsible of the situation. Though the women may not be in charge of every part of the process concerning the medicinal plants (the gathering, processing, distribution, etc.) we think that she still will be able to give us an overall view of the process. As of yet our group consist of four women. This could be to our disadvantage in some aspects, but we hope we can turn it into our benefit, as the women of the villages may be more open and

willing to share their knowledge with other women (us), than if our group-composition was dominated by men. We do not know what exactly are the daily tasks of the women of the village – we suspect she has many – and they may not be able to easily fit us into their schedules, but we hope at least they are prepared to let us join them during their daily cores.

Healers[1]:

The healer is used in many different situations covering the chores of western physicians, psychiatrists, counsellors, and priests (Mander, 1998). There are two kinds of healers, the Inyangas and the (In)Sangoma (IzaNngoma, Isagoma). The first refers to healing practices dealing with medicinal features, whereas the latter is involved in aspects concerning magic and the spiritual-psychic world. The healers have to have had a call from the ancestors in order to practice. This call will in turn lead them to exercise as either the Insangoma or the Inyanga.

Villagers counsel the healer with problems ranging from social dilemmas to major medical illnesses (Hewson, 1998). They usually seek advice in cases where they want to obtain a product without a prescription [from the local house clinic?] or want a consultation with an already prescribed medicine (Mander, 1998).

We know that Quentin Gausset and Andreas de Neergaard have already met one male Insangoma in Madlangala, but from our studies we have not come to any joint consent whether the healers of Madlangala are more likely to be men or women. Neither do we know if the healers are confined to a particular age group. In the preface we can only speculate, but in the field we will have to go by what we are told from our other informants, and hopefully that way be able to identify the healer(s). KwaZulu Natal has somewhere in between 7.600 – 15.600 healers (Mander 1998), which means that we can expect quite a few of the healers to be located in the villages of Madlangala. How many of these that will be interested in talking to us is difficult to prophesise.

We are concerned with the healing properties and improvements gained from medicinal plants (e.g. potence enhancer, lowering of high blood pressure, recovering from being stuck by lightening, or medicinal plants use to *eliminate* a headache cause by a curse) rather than for example uses of medicinal plants that causes misfortunes to other people (e.g. curses). Therefore we will focus on the healers to whom there are referred in these particular cases.

Gatherers:

Gatherers is a collective term used for collectors who gather for use in the immediate household, for local distribution connected with the indigenous healer's practice, or for commercial purposes (rural or urban markets).

[1] FAO are using the term "indigenous healer" explaining that the name "traditional healer" does not completely encapsulate the healing practices, as these, though originating in Africa, are "not purely traditional" (Mander, 1998). In other discussions on same topic we have found the terms "traditional healer" (WHO, 1998), "indigenous healer" (Mander, 1998), as well as just "healer" (Mander, 1998; Beek, 1992) being used interchangeably. We are using the term "healer" representing all of these. "Herbalist" is also a common term used in this discussion, but we are not sure to exactly whom this term is referring (Ntshona, 2002; Kokwaro, 1993; Richards, 1992).

We bare in mind that collectors of the medicinal plants could well be people other than the once that are related to the women and the healers. For example they could be people who are collecting the plants for commercial use only and perhaps not always with the blessing of their village members.
However, we hope via conversations (perhaps informal interviews?) to be able to identify gatherers who are not having a direct relations to the women and healers. We are not sure how willing these will be to involve us in their activities as we know that not all commercial gathering is appreciated by the village members (Personal conversation with de Neergaard and Gausset).

If it turn out that the gatherers are foremost comprised by women we may have a good opportunity to follow them in the filed (see Methods). However, we may expect to have problems getting hold on younger men, or collectors from the neighbouring country Lesotho, unless our own research team are getting some male counterparts.

NGO/freelance consultant:

The local NGO/freelance consultant are the entities/persons that expressed a concern for the over-harvest of medicinal plants in the area of Madlangala (personal conversation with de Neergaard and Gausset). We will try to realise an interview with the person(s) that are worried about the over-harvest of medicinal plants in the region. They may also have some relevant information regarding the characteristics of the area, the different plants that the local communities use, for what are they used, local names, etc. There could be the possibility that these persons also can point out potential informants in the community. The NGOs and/or the freelance consultant may be able to help us identifying the plants in the area. In particular they may already have translated local names used for the plants to scientific ones.

IV. Methodology

As many of the informant categories may inflict with one another we are not expecting to keep the interviews and survey strictly separate. If a female head of the household also turn out to be a healer then, naturally, we will include any relevant information with which she will provide us into our survey. We will like to take the full advantage of our group composition given the short time we have to execute our research. This means that we will divide us into teams of either two or three, mixing us from both the Danish and the South African group. We will plan to divide the tasks, so that one team can have the benefit of the interpreter during interviews and the survey, while the other teams for example are collecting plants. The following day we may change tasks. However, the schedule will naturally largely depend on the opportunities we are given by our informants.

Our fieldwork will be based on five different research methods:

1) Survey/questionnaire 2) Interviews 3) observation 4) field collection of plants/ identification 5) GPS mapping. We are using methods primarily from the social sciences and to a lesser extent the ones from the natural sciences.

Description of each method:

1) Survey/questionnaire.

We are under the impression that our informants will not be proficient in English and thus it will be necessary for us to have an interpreter in order to complete the surveys. We don't know as of yet if any of our counterparts in SA will know the language they are speaking in Madlangala. We will have written questionnaires from where we will read our questions and note the answers. We are not planning to have our informants reading the questions themselves since we don't know how many would be literate (in English). We imagine that we will ask approximately three questions (in the same order) that we like as many households as possible to answer (e.g. we would like to know what are the ten most used medicinal plants in the household [we may need to chance this number according to what answers we get], what are they used for, etc). We hope that the questionnaire should take no more than 30 min. to complete. We are planning to execute the survey in teams of two people: one person from the Danish group and one from the SA group in order to reach as many households as possible in the limited timeframe we are given. The data obtained by the surveys will be analysed statistically with the help of SPSS (Statistical Program for Social Sciences).

2) Interviews.

Formal: For the reasons mentioned above we believe an interpreter will be necessary to complete the interviews. We hope to make as a minimum one thorough interview with at least one person from each informant category. This interview will be semi structured in which we have prepared different topics with possible questions we hope are relevant in the discourse, but if other things come up in the interview then we will be careful to collect this data as well. We hope that the formal interviews should take no more than 45min.-1hr.

Informal: We hope that informal interviewing will take place during our everyday interaction with the informants. Also we would like to speak to the bus driver going between Madlangala and Durban to hear if he can give us an approximation of the amount of medicinal plants he is picking up in Madlangala, and their destination. We are likely to know little about the specifics and real relevance of almost anything concerning the use and process of the medicinal plants and we want to be open to anything that come up. Though we do not think we speak a common language with out informants, we will strive for a relaxed atmosphere in which all kinds of information can come up relevant to our survey.

The data gathered both by the formal and informal interview, will not be analysed statistically. We will be aware of making probe questions to verify the different responses, as well presenting the different topics in different order if necessary. For example we could make some formal or informal interviews with some of the school children, to find out their knowledge of medicinal plants, both before we go to the field to collect the plants, and after for the purpose of verifying information.

3) Observation.

General: We are not planning any formal observation in the preface, since we don't know what could come up, in the field. Naturally we will be observing in general (e.g. when visiting the households), but if something important comes up, e.g. we find that the gatherers meet at a special place and time, which could be a good place for us to "observe", then we will schedule this in the field. We will have to rely on our own interpretation of what is happening during these sessions, as we will most likely be without the interpreter to explain what is being communicated during the events. What is important is that we make sure to somehow record what we are observing, so that we can share and discuss with our group what we have experienced.

Collection: We hope that during our visits to the household we will have an opportunity to make contacts with people who will let us join them in the field during the harvesting of the plants. We are not planning to have an interpreter with us during the collection as it could make the scheduling problematic and difficult to jump on a spontaneous opportunity. We also believe that unless we turn out to have an extraordinary interpreter with us, it will be to our advantage to keep this time informal. We may have a better chance to create a good, friendly and open atmosphere between the informants and ourselves without an interpreter in between. Though we are likely to miss some information due to language problems we may get much more personal insider's knowledge. Overall we hope to get a good insight in how the gatherers or anybody else collects the plants, and if they use varying methods. If this is the case, then we will try to find out if there is a reason for that (e.g. is the conservation of the plant taking into consideration in the gathering method).

4) Collection.

Since many of the plants we can find in the households or at the practitioners are likely to have been processed, we think it is necessary to get our own samples from the field to identify the medicinal plants. We are aware that different local names may be used for the various plants and we will need to get their scientific names for our project. We will follow the procedure of the gatherers as far as possible, but where the gatherer may only collect small parts of the plants we will make sure that we have enough from the plant or tree for a later identification. We will make a field herbarium with all the relevant field notes so that we can correctly identify the different plants with the help of South African specialists in plant systematic. By this mean we can give the plant specimens to the herbarium (if requested by them) or we could give them to the school so they can have some material about the medicinal plants in their region to show and work with the children. We will also bring cameras in cases where a photograph of the entire plant or tree (for root samples for example) may be convenient. Of course we will make sure to note which information goes along with the photo. The data collected by this method as well as with the survey/questionnaires and interviews, will be used to create a list of some of the medicinal plants used in Madlangala with their scientific name, their local name, their use, which part of the plant that is used for medicinal purpose, and whatever other information we can get regarding the plant.

5) GPS mapping

We will bring a GPS during the collection to measure where the plants are gathered in the area. We will later transfer this information onto maps. We are not sure at this stage how much information in regard to where the plants are located and collected, but if our informants mention places where they used to harvest then that will be interesting to measure as well.

V. Research outside Malangala

Before the fieldwork begins, we are planning to have a meeting with Myles Mander (FAO report) scheduled for the 13-14th January so that he can give us some good ideas for the project, the field work, the species that we may find, etc.

After the fieldwork in Madlangala we are planning a visit to the market in Durban in order to know more about the different species commercialised, for what they are used, their local names, and other relevant information we can obtain.

VI. Actual questions

A. Why are we asking?

1) What plants are being used?

We want to get a general picture of the diversity of local plants being used in the area of Madlangala for medicinal purposes. We have literature that are giving us a broad picture of which plants are being used in the province (Mander 1998, Dold & Cocks 2001, Ntshona 2002), however, our focus is to identify the once used locally.

2) Who uses the different plants in Madlangala?

We have a qualified guess as to who are using the medicinal plants. However, we want to know the importance of their role in the uses and knowledge of the medicinal plants.

3) For what are they being used?

The purpose of our project is to identify the potential and the importance of the medicinal plants that are gathered and used locally. The literature explains the general uses of some of the plants, however, we are interested in knowing the precise use and knowledge within Madlangala.

4) Management

We are interested in three aspects of the management: a) the collection/harvesting, b) the distribution of the medicinal plants, and c) the possible cultivation. Our main focus is to understand the cycle of the processes involved in the uses of the medicinal plants, and to estimate to what extend they are sustainable.

a) We are interested in how they collect the plants as to find out if these methods are sustainable. We also want to get an estimation of how many plants that are harvested.
b) We like to estimate the distribution of the plants gathered in the area in order to approximate how much of the monthly harvesting supplies respectively the women, healers, and the market, (and others?). We are only making an estimation as we do not think it will be possible to extract exact information. One way of contracting this information, however, could be to note how many bags are driven away to the market.
c) If the gathering methods that are presently used in Madlangala are depleting the area for its resources, then they may have integrated some kind of cultivation of medicinal plants in their home gardens.

B. The Survey.

Informants: Household, as many as possible.

The survey is the only information we wish to use for statistics. We will ask our key informant to mention the number of plants that she (cooking lady) thinks is used most frequently among the inhabitants of Madlangala. Depending on the number she gives us, we will make our question. For example if our key informant says that there are fifty medicinal plants used in the village, we will ask as many households as possible, to identify the ten most important medicinal plants they use.

C. The Interview.

Informants: women, healers, and gatherers (and "others")

The interview will consist of some general questions that we like to ask our informant. We will have a main page for the demographics and the informant category, to which the particular informant belong, and three subsidiary pages listing relevant questions for the specific category.

VII. Time table

Date	Fieldwork
Friday 17th January	Accommodation and briefing - afternoon walk in villages and surroundings (try to get an idea of the number of households that we would like to include in our survey). Evening meeting. Make arrangement with the cooking lady to meet with her the following day. Find out when and where does the bus come to Madlangala (transport goods to the market) Group meeting discuss the following day.
Saturday 18th January	Obs. Bags to market (ObtM). Meet with cooking lady: identifying informants. *Entire group*: Make arrangements with other informants and try to divide interviews into villages. Take any occasion that turns up to complete survey/interviews. Group meeting

Sunday 19th January	(ObtM). *Entire group*: making survey and interviews. 1st field evaluation meeting, all students and staff participate. Group meeting.
Monday 20th January	(ObtM) *Team A & team B*: continue survey/interview, *team C* join informant in the field if we have the opportunity (adjustments depending on what people do on Sundays). Plant samples & GPS. General observation. Group meeting
Tuesday 21st January	(ObtM). *Team C & team A*: continue survey/interview, *team B*: join informant in the field if we have the opportunity. Plant samples & GPS. General observation Group meeting
Wednesday 22nd January	(ObtM). *Team B & team C*: continue survey/interview. *Team A* join informant in the field if we have the opportunity. Plant samples & GPS. 2nd field evaluation meeting, all groups and staff participate Group meeting
Thursday 23rd January	(ObtM). Focus on special opportunities that has come up during the week, e.g. possibility to "hang out" with an informant in a relevant activity. Group meeting
Friday 24th January	(ObtM). *Team A & team B*: continue survey/interview, *team C* join informant in the field if we have the opportunity Plant samples & GPS. 3rd field evaluation meeting, all groups and staff participate Group meeting
Saturday 25th January	(ObtM). *Team C & team A*: continue survey/interview. *Team B:* join informant in the field if we have the opportunity. Plant samples & GPS. Group meeting
Sunday 26th January	(ObtM) *Team B & team C*: continue survey/interview. *Team A:* join informant in the field if we have the opportunity. Plant samples & GPS. Group meeting
Monday 27th January	(ObtM). Focus on special activity/opportunity that has come up since Thursday 23rd. Group meeting

VIII. General set-up and expectations to each other in the teams.

1) take opportunities – only make sure to document in one way or another.
2) Assure translation + involvement (relevance) by other group members.
3) Other? (counterparts' stipulations).

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Appendix A

The Local use and knowledge of medicinal plants in Madlangala.

Date: _____ Village: _____

Women Healer Gatherer Other

Name: _____

Age: _____

Sex: _____

Tribe: Sotho Xhosa Other: _____

Household:

How many people are under your responsibility?
(how many people are the informant looking after) total: _____

Children (age ca. 0 – 15): _____

Adults (age ca. 16 – 50): _____

Elders (age ca. 51 -): _____

Notes: _____

_____

_____

_____

_____

_____

_____

_____

Name of plant	Use of plant

Appendix B

Semi-structured Interview: Questions for women

(tentative questions for the interview)

Identification

-What plants do you use?
-Which part of the plant do you use?

Use

-Which part of the plant is used for what?
-How much do you use medicinal plants?
-Do you use the plant in its own or mixing it with other ingredients?
-What do you use the plant for?
-Do you always know what plant to use? Do you ask someone else for advice? Who?
-What else do you gather for?
-Who taught you about the plants?

Management

Cultivation:
-Do you cultivate any medicinal plants? -Where?

Harvesting:
-Where do you collect the plants?
-For how many years have you been gathering plants?
-Do you collect the plants by yourself?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-Do you only collect the plants for the use in your household?
-How do you collect the plant?

Distribution:

-Do you collect medicinal plants to sell on the market?
-Do you buy some of the medicinal plants that you are using?

Semi-structured Interview: Questions for Healers

Background info

-How long time have you been a healer?
-How did you become a healer?
-Who taught you what you know?
-How many clients do you have?
- What are the most common reasons that people are seeking your help?
-How many consultations do you have in a day?
-Are you paid for your services? How?

Identification

-What are the local plants that you are using in your practice?
-Which parts of the plant do you use?

Use

-What do you use them for?

Management

Cultivation:
-Do you cultivate any of the medicinal plants that you are using?

Harvesting:
-Do you collect the medicinal plants that you are using?
-Where do you collect them?
-For how many years have you been gathering plants?

-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?

Distribution:
-Do you buy any medicinal plants? Where do you buy them? (local /external)

Semi-structured Interview: Questions for the Gatherers

Background info

-For how many years have you been collecting plants?

Identification

-What plants do you collect?
-Which part of the plant are you harvesting?

Use

-Why are you collecting?
-For whom are you collecting the plants?

Management

Harvesting:
-Where do you collect them?
-For how many years have you been gathering plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-How much are you harvesting per day?
-How often are you harvesting?

-When is the best time in the year for gathering the plants?

Distribution:
-Do you sell to market dealers?
-Where is the market?
-How often do you go to the market?

Informal interview: NGO / Freelance consultant

-Could you tell us about the situation of the use of medicinal plants in Madlangala?
-Can you identify the most common medicinal species that are growing and used in the area?
-Are there any concerns about the medicinal plants in this area?

Appendix A

The Local use and knowledge of medicinal plants in Madlangala.

Date: _____ Village: _____

Women Healer Gatherer Other

Name: _____

Age: _____

Sex: _____

Tribe: Sotho Xhosa Other: _____

Household:

How many people are under your responsibility?
(how many people are the informant looking after) total: _____

Children (age ca. 0 – 15): _____

Adults (age ca. 16 – 50): _____

Elders (age ca. 51 -): _____

Notes: _____

Name of plant	Use of plant

Appendix B

Semi-structured Interview: Questions for women
(tentative questions for the interview)

Identification

-What plants do you use?
-Which part of the plant do you use?

Use

-Which part of the plant is used for what?
-How much do you use medicinal plants?
-Do you use the plant in its own or mixing it with other ingredients?
-What do you use the plant for?
-Do you always know what plant to use? Do you ask someone else for advice? Who?
-What else do you gather for?
-Who taught you about the plants?

Management

Cultivation:
-Do you cultivate any medicinal plants? -Where?

Harvesting:
-Where do you collect the plants?
-For how many years have you been gathering plants?
-Do you collect the plants by yourself?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started
gathering plants?
-Do you only collect the plants for the use in your household?
-How do you collect the plant?

Distribution:
-Do you collect medicinal plants to sell on the market?
-Do you buy some of the medicinal plants that you are using?

Semi-structured Interview: Questions for Healers

Background info

-How long time have you been a healer?
-How did you become a healer?
-Who taught you what you know?
-How many clients do you have?
- What are the most common reasons that people are seeking your help?
-How many consultations do you have in a day?
-Are you paid for your services? How?

Identification

-What are the local plants that you are using in your practice?
-Which parts of the plant do you use?

Use

-What do you use them for?

Management

Cultivation:
-Do you cultivate any of the medicinal plants that you are using?

Harvesting:
-Do you collect the medicinal plants that you are using?
-Where do you collect them?
-For how many years have you been gathering plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started
gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?

Distribution:
-Do you buy any medicinal plants? Where do you buy them? (local /external)

Semi-structured Interview: Questions for the Gatherers

Background info

-For how many years have you been collecting plants?

Identification

-What plants do you collect?
-Which part of the plant are you harvesting?

Use

-Why are you collecting?
-For whom are you collecting the plants?

Management

Harvesting:
-Where do you collect them?
-For how many years have you been gathering plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started
gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-How much are you harvesting per day?
-How often are you harvesting?
-When is the best time in the year for gathering the plants?

Distribution:
-Do you sell to market dealers?
-Where is the market?
-How often do you go to the market?

Informal interview: NGO / Freelance consultant

-Could you tell us about the situation of the use of medicinal plants in Madlangala?
-Can you identify the most common medicinal species that are growing and used in the area?
-Are there any concerns about the medicinal plants in this area?

Appendix A **QUESTIONNAIRE: *Medicinal Plants***

1. Household Details

1.1 Date:_____ 1.2 Village:_____

1.3 Interviewee: □ Male □ Female

*Description/ Position in Hh:*_____

1.4 Tribal Affiliation: □ Sotho □ Xhosa □ Zulu Other:_____

2. Income Info.

2. What is your average monthly household income (*approximately*)?

□ < R 400 □ R400 – R600 □ R600 – R800 □ R800 – R1000 □ > R1000

2.1 From where / what is your **main** source of income? _____

2.2 And, a supplementary (secondary) source of revenue? _____

2.3 How many people are currently living in this household whom are directly dependent upon this monthly income?

No: _____ / *Composition:* No. Children:_____ No. Adults (> 18): _____

3. Use of Traditional Medicine?

3. When a member of your household falls ill / gets sick, whom would you consult first?

□ Hospital / Clinic □ Traditional Healer □ Nobody: Self Treatment

3.1 Do you *exclusively* use one of the above, or a combination?

□ **Y**, Which one:_____ □ Combination, of: _____

3.2 What is your reason for this? _____

_____

_____

4. Trad.. Medicine Harvesting & Prescription

4. Do you / member(s) of this Hh *personally* collect the plants you utilize in the home? □ Y □ N

4.1 Then **who** in this household generally does the harvesting / collection?

_____

4.2 If NOT, from **where** / **whom** do you get your plant material / trad. Medicine?

_____ (*Combination?)*

5. Sustainability?

5. Has your Hh noticed a **decline** in the availability / abundance of **local** plant species (i.e. that you would be able to collect yourself), used in household remedies? □ Y □ N

5.1 Do you believe that the commercial muti trade is jeopardizing the sustainability (future) of this local natural resource? □ Y □ N

5.2 Who(m) are to blame?

_____

_____

_____ *(Elaborate)*

***6.* Matrix Ratings**

7. Could you list / name the most popular plants / traditional medicines used in your Hh; their usage and nature of collection:

Name of Plant/ Medicine	**Part of Plant Utilised**	**Method of Collection**	**Pharmaceutical / Psychological Use**	**Found Locally?** (Y/ N)	**Do you harvest & prepare yourself, otherwise from where do you obtain it?**

7. Future Scenario

8. Do you believe that the people in this community will still chose / prefer? traditional medicine (over western medicine) in the future : i.e. in ten years time?

_____

_____

_____ Justify

Appendix B

Semi-structured Interview: Questions for the members of the household

(tentative questions for the interview)

Identification

-What plants do you use?
-Which part of the plant do you use?

Use

-Which part of the plant is used for what?
-How much do you use medicinal plants?
-Do you use the plant in its own or mixing it with other ingredients?
-What do you use the plant for?
-Do you always know what plant to use? Do you ask someone else for advice? Who?
-What else do you gather for?
-Who taught you about the plants?

Management

Cultivation:
-Do you cultivate any medicinal plants? -Where?

Harvesting:
-Where do you collect the plants?
-For how many years have you been gathering plants?
-Do you collect the plants by yourself?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-Do you only collect the plants for the use in your household?
-How do you collect the plant?

Distribution:
-Do you collect medicinal plants to sell on the market?
-Do you buy some of the medicinal plants that you are using?

Semi-structured Interview: Questions for Traditional Healers

Background info

-How long time have you been a healer?
-How did you become a healer?
-Who taught you what you know?
-How many clients do you have?
- What are the most common reasons that people are seeking your help?
-How many consultations do you have in a day?
-Are you paid for your services? How?

Identification

-What are the local plants that you are using in your practice?
-Which parts of the plant do you use?

Use

-What do you use them for?

Management

Cultivation:
-Do you cultivate any of the medicinal plants that you are using?

Harvesting:
-Do you collect the medicinal plants that you are using?
-Where do you collect them?
-For how many years have you been gathering plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?

Distribution:
-Do you buy any medicinal plants? Where do you buy them? (local /external)

Semi-structured Interview: Questions for the Commercial Gatherers

Background info

-For how many years have you been collecting plants?

Identification

-What plants do you collect?
-Which part of the plant are you harvesting?

Use

-Why are you collecting?
-For whom are you collecting the plants?

Management

Harvesting:
-Where do you collect them?
-For how many years have you been gathering plants?
-Is there a difference in the amounts of plants that you can find plants today and when you started gathering plants?
-How far do you walk to find the plants?
-Did you always walk this distance to find the plants?
-How much are you harvesting per day?
-How often are you harvesting?
-When is the best time in the year for gathering the plants?

Distribution:
-Do you sell to market dealers?
-Where is the market?
-How often do you go to the market?

Appendix E

Activity LOG of Nina Finch (Medicinal Plant Group) in the Field Trip in Madlangala, South Africa for the Interdisciplinary Land Use and Natural Resource Management A (SLUSE), January 18-25, 2003

Medicinal plant group: Sarah Colvin (S), Lindokuhle Dlamini (L), Nina Finch (N), Karoline Froeschl (Kl), Khumbulani Hlongwane (Ku), Gloria Mnyameni (G) - field guide, Modisane Moletsane (Mo), Mr. Mkangala (Mk) - interpreter, Mr. Simon (Si) - interpreter, Karen Vecht (K).

Date	Morning, afternoon or night	Location	Activity
18/01/03 (Saturday)	Morning	Makomereng	- Travel from Pietermaritzburg to Madlangala
	Afternoon	Makomereng	- Arrival to the village - Presentation of the people involved in the torurism project - Prayer / Song - Presentation of the people who will work with the groups, authorities, students and teachers - Distribution of students / teachers in different households
19/01/03 (Sunday)	Morning	Makomereng	- Group meeting to introduce ourselves to the interpreter (Mr. Mkangala) and the field guide (Mrs. Gloria Mnyameni). - Explanation of the project in general - Going through each question of the questionnaires and the interviews - Questions about the project - Division into two groups: a) Gloria, Karoline, Molex and Sarah b) Karen, Khumbulani, Lindo, Mr.Mkangala and Nina
		Makomereng	Group a): Questionnaires (1) Semi-structured interviews (1)
		Makomereng	Group b): - Questionnaires (2) - Church - Semi-structured interview (1/2)
	Afternoon	Makomereng	Welcome ceremony by Village.
	Night	Makomereng	Feedback from Christian in regard to the way the questionnaires were conducted.
20/01/03 (Monday)	Morning	Makomereng	- Group meeting to revise what had been done on Sunday. - Introduction of Mr. Simon to the group (interpreter) - Division of the group in three sub-groups: a) Gloria, Karen and Nina b) Karoline, Molex and Mr. Mkangala c) Khumbulani, Lindo and Sarah

	Morning	Makomereng	- Semi-structured interview with the son of a traditional healer - Scheduled an appointment with the son of a traditional healer for a field walk on Wednesday the 22nd at 7 AM. - Scheduled an appointment in the afternoon with a person whose father also was a traditional healer (Sangoma) - Questionnaires (1)
	Afternoon	Makomereng	- Waited for the person whose father was a traditional healer but he did not show up. - Questionnaires (3)
21/01/03 (Tuesday)	Morning & Afternoon	Pepela II	- Questionnaire (4) - Semi-structured interviews (2) - Scheduled a field walk with a traditional healer on Thursday 23rd at 7 AM to collect some medicinal plants
	Afternoon	Makomereng	- We were told to come at 5 PM to see if a traditional healer had returned home from a field walk. He had not returned. We were told to try again on Wednesday the 22nd. Listing completed activities and destribution and planning of activities for the rest of week.
22/01/03 (Wednesday)	Morning	Makomereng	- We had an appointment with the son of a traditional healer (Sangoma) to go on a field walk but we were told that he was in Matatiele. - Gloria went to find a person that knew a lot on medicinal plants. Gloria scheduled a field walk with Mr. Mzimkhulu
	Morning & Afternoon	Makomereng (Mountain called Mampele)	- Field walk with Mr. Mzimkhulu - Semi-structured interview with Mr. Mzimkhulu - Recollection of medicinal plants - Identification of some species in the base
	Night	Makomereng	- Identification of some of the species of medicinal plants collected
23/01/03 (Thursday)	Morning	Pepela II (mountains)	- Field walk with a traditional healer (Sangoma) + another Sangoma that came with us. - Semi-structured interview with two traditional healers - Experienced some rituals before and after the field walk. - Group discussion at the base
	Afternoon	Mabua	- Questionnaire (1 herdman) (Simon wanted to return) - ID of plants (I found one!)
24/01/03 (Friday)	Morning	Mabua	- Questionnaires (2 inyangas) - Semi-structured interviews (2 inyangas)
	Afternoon	Makoomerang	- Questionnaires (1) - Semi-structured interviews (1) - Informal conversation with kitchen women
25/01/03 (Saturday)	Morning + afternoon	Mabua	- Questionnaires (1 herbalist) - Semi-structured interviews (1 herbalist) - Continued int. with Gloria. Visit to Gloria's home.
	Afternoon	Makomereng	- Farewell BBQ
26/01/03 (Sunday)	Morning, Afternoon	Makomereng	- Departure from Makomereng - Arrival to Durban

Activity LOG of Karen Amaya Vecht (Medicinal Plant Group in the Field Trip in Madlangala, South Africa for the Interdisciplinary Land Use and Natural Resource Management A (SLUSE), January 18-25, 2003

Medicinal plant group: Sarah Colvin (S), Lindokuhle Dlamini (L), Nina Finch (N), Karoline Froeschl (Kl), Khumbulani Hlongwane (Ku), Gloria Mnyameni (G) - field guide, Modisane Moletsane (Mo), Mr. Mkangala (Mk) - interpreter, Mr. Simon (Si) - interpreter, Karen Vecht (K).

Date	Morning, afternoon or night	Location	Activity
18/01/03 (Saturday)	Morning	Makomereng	- Travel from Pietermaritzburg to Madlangala
	Afternoon	Makomereng	- Arrival to the village - Presentation of the people involved in the torurism project - Prayer / Song - Presentation of the people who will work with the groups, authorities, students and teachers - Distribution of students / teachers in different households
19/01/03 (Sunday)	Morning	Makomereng	- Group meeting to introduce ourselves to the interpreter (Mr. Mkangala) and the field guide (Mrs. Gloria Mnyameni). - Explanation of the project in general - Going through each question of the questionnaires and the interviews - Questions about the project - Division into two groups: a) Gloria, Karoline, Molex and Sarah b) Karen, Khumbulani, Lindo, Mr.Mkangala and Nina
		Makomereng	Group b): - Questionnaires (2) - Church - Semi-structured interview (1/2)
	Afternoon	Makomereng	- Welcome ceremony by Village.
	Night	Makomereng	- Feedback from Christian in regard to the way the questionnaires were conducted.
20/01/03 (Monday)	Morning	Makomereng	- Group meeting to revise what had been done on Sunday. - Introduction of Mr. Simon to the group (interpreter) - Division of the group in three sub-groups: a) Gloria, Karen and Nina b) Karoline, Molex and Mr. Mkangala c) Khumbulani, Lindo and Sarah
			- Semi-structured interview with the son of a traditional healer - Scheduled an appointment with the son of a traditional healer for a field walk on Wednesday the 22nd at 7 AM. - Scheduled an appointment in the afternoon with a person whose father also was a traditional healer (Sangoma) - Questionnaires (1)
	Afternoon	Makomereng	- Waited for the person whose father was a traditional healer but he did not show up. - Questionnaires (3)
21/01/03 (Tuesday)	Morning & Afternoon	Pepela II	- Questionnaire (4) - Semi-structured interviews (2) - Scheduled a field walk with a traditional healer on Thursday 23rd at 7 AM to collect some medicinal plants

	Afternoon	Makomereng	- We were told to come at 5 PM to see if a traditional healer had returned home from a field walk. He had not returned. We were told to try again on Wednesday the 22nd. Listing completed activities and destribution and planning of activities for the rest of week.
22/01/03 (Wednesday)	Morning	Makomereng	- We had an appointment with the son of a traditional healer (Sangoma) to go on a field walk but we were told that he was in Matatiele. - Gloria went to find a person that knew a lot on medicinal plants. Gloria scheduled a field walk with Mr. Mzimkhulu
	Morning & Afternoon	Makomereng (Mountain called Mampele)	- Field walk with Mr. Mzimkhulu - Semi-structured interview with Mr. Mzimkhulu - Recollection of medicinal plants - Identification of some species in the base
	Night	Makomereng	- Identification of some of the species of medicinal plants collected
23/01/03 (Thursday)	Morning	Pepela II (mountains)	- Field walk with a traditional healer (Sangoma) + another Sangoma that came with us. - Semi-structured interview with two traditional healers - Experienced some rituals before and after the field walk. - Group discussion at the base
	Afternoon	Makomereng	- Arranging of information gathered in the field walk - Identification of some of the species gathered in the field walk
24/01/03 (Friday)	Night	Makomereng	- Identification of some of the species gathered in the field walk
	Morning, Afternoon & Night	Makomereng	- Identification of some of the species gathered in the field walk (from three field walks)
25/01/03 (Saturday)	Morning	Makomereng	- Analysis of some of the data gathered
	Afternoon	Makomereng	- Farewell BBQ
26/01/03 (Sunday)	Morning, Afternoon	Makomereng	- Departure from Makomereng - Arrival to Durban

Appendix D

Scientific Name	% of Households
Alepidea amatymbica	67
Xysmalobium undulatum (L.) R. Br.	35
Artemisia afra Jacq. ex. Willd.	26
Phateyangaka (s)	24
Hypoxis gerrardii Bak., *H. hemerocallidea* Fisch. ex. C. A. Mey. & Avé-Lall., *H. Colchicifolia / Dioscorea diversifolia, D. Bulbifera* L.	15
Helichrysum sp.	13
Sefuthefhuthe *	13
Elephantorrhiza elephantina (Burch.) Skeels	11
Eucomis autumnalis (Mill.) Chitt.	11
Gerrardina foliosa Oliv. / Noltea africana (L.) Rchb. ex Harv. & Sond.	11
Pentanisia prunelloides	11
Gum tree (e)	11
Umphaphamisa *	11
Artemisia sp.	9
Mokhakhane *	9
Sansevieria sp. (FAO), *Gasteria croucherii* (Hook. f.) Baker	7
Phefo *	7
Setimamolelo futha *	7
Cannabis sativa L.	4
Celtis africana Burm. f.	4
Gunnera perpensa	4
Plectranthus grallatus	4
Prunus persica (L.) Batsch	4
Dambisa *	4
Hlwenya *	4
Lekgala, Legala *	4
Lekhalana *	4
Pootshetlha *	4
Umqhaphu *	4
Acacia mearnsii De Wild.	2
Achyropsis (avicularis) ?	2
Agrimonia procera Wallr., *Helinus integrifolius* (2 ?)	2
Allium sativum L.	2
Cassine transvaalensis	2
Cussonia spaerocephala	2
Euphorbia pulvinata	2
Foeniculum vulgare Mill.	2
Fragaria sp.	2
Leonotis leonurus (L.) R. Br. / *L. Ocymifolia* (Burm. f.) Iwarsson	2
Pelargonium alchemilloides (L.) L'Hér. / *Anemone fanninii*	2
Plantago major L.	2
Senecio sp., *Aster* sp.	2
Solanum aculeastrum Dunal	2
Tetradenia riparia (Hochst.) Codd	2
Thesium pallidum	2

Scientific Name	% of Households
Amafuthomhlaba *	2
Bolao *	2
Clerula (?) *	2
Geleweni, Gebeleweni *	2
Imilemaweni *	2
Incam *	2
Inqwebeba *	2
Intjwala bentaka, Utjwalabentaka *	2
Isinwazo *	2
Kgwara *	2
Khakhakha *	2
Knweli *	2
Krware *	2
Lekgapumpu *	2
Letapisa *	2
Mahirisaka *	2
Mositsana *	2
Ndawuluthi *	2
Phela *	2
Segalagalasa-Matlaka *	2
Selepe *	2
Sephepheto *	2
Tikamotse *	2
Tshita baloi chella *	2
Umagageni *	2
Umhahawe *	2
Unomncindi *	2
Usixhotsheni *	2

* Botanical name not identified (name in local language)