The acceptability of medicinal plant gardens: Healers' perspective from Nkomanzi East Region

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ABSTRACT

THE ACCEPTABILITY OF MEDICINAL PLANT GARDENS: HEALERS' PERSPECTIVE FROM NKOMANZI EAST REGION

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The use and trade in medicinal plant products in South Africa is a cultivating sector of rural development. In order to conserve these plants and develop sustainable production, policies to promote domestication have been adopted. However, users view cultivated plants with scepticism. The key for policy makers is to understand how users respond to scarcity of species and whether domestication can be a solution. The main purpose of the study is to give an overview of variables that influence the rate of adoption of medicinal plant gardens. The last discussion will investigate whether domestication of species is an appropriate solution to conservation, or whether the intervention should be promoted as a local economic development option.

The research took the form of a case study approach focusing on a specific area, with participatory and qualitative phases providing the basis for a semi-structured interview schedule, designed to assess the healer's acceptability of medicinal plant gardens, their comparative perception of cultivated and collected plants in their natural habitat/environment, and constraints in the establishment of medicinal plant gardens.

Results indicated that:

- The type of healer influences acceptability of medicinal plant gardens;

- Healers use medicinal plant gardens to supply urban demand and provide income;

- Healer and client perceptions of medicinal plant potency influence acceptability of cultivated plants;

- Type of healer influences the environment in which species are collected.

- Ancestral belief system forms an integral component of healers behavioural pattern

The study concludes that:

- Local scarcity of medicinal plants alone does not stimulate demand for nurseries;

- Rituals associated with some treatments influence collection, storage and cultivation patterns;

- Policy makers also need to promote domestication for commercial production and to investigate alternatives for propagating the population of some plant species in their natural habitat/environment to cater for specific needs of healers and

- Interview responses, although useful, cannot always be taken at face value

ACKNOWLEDGEMENTS

Glossary note

Muti is a mixture of different medicinal plants and some other ingredients intended to evoke the magic power of species in order to ward of problems.

- Sangomas are traditional healers who employ drums, divine bones, visions and dancing to diagnose a patient. They were referred to in the past as diviners.
- Ngaka employ divine bones and visions to diagnose a patient. In the past they did not diagnose patient but served as herbalists;
- Sedupe is a healer who uses dreams only to diagnose a patient
- Sanusi are usually elderly and through years in the field, they understand the profession of Sangomas, Ngakas and Sedupes.
- Gatherers are traders of medicinal plants.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 Problem statement

This study is about attitudes and behaviours of traditional healers towards medicinal plant gardens, the extent of use and effectiveness of cultivated plants. It stems from the common assumption that healers accept medicinal plant gardens as a substitute to address shortages of medicinal plants in communal areas. At national and international levels, the commonly held belief is the view that medicinal plant gardens will ultimately enhance the conservation and management of biodiversity. The study does not cover all users but concentrates on healers: usually the main focus for domestication initiatives.

Medicinal plants are used extensively by many rural and urban households in developing countries. King (2000) reports that the World Health Organisation estimates that almost 80% of the population in developing countries utilises traditional medicinal plants and between 25-50% of modern drugs are derived from such plants. The current harvesting intensity by different interest groups, as well as an increase in scarcity of popular medicinal plants on communal lands (as demonstrated by an increased distance to available population) has serious negative ecological implications. This problem affects different users in different ways, even at the level of domestic use. The great variation regarding the extent of use by different interest groups from province to province, village to village, even between households within communities makes it difficult to abstract generalisations about the traditional healing industry, especially in the context of its belief systems.

1.1.2 Initial responses to the problem

Concerns about the unknown rate at which medicinal plants from communal land are disappearing and the consequent biodiversity implications thereof, has led to calls for cultivation of these plants in gardens by various agencies. Cunningham (1988) initiated this call while Mander (1998), however, noted that there had been very little response during the decade that followed. Furthermore, observation indicates that whilst many different approaches are being tried to minimise the loss of biodiversity, the recognition of habitat reduction and its accompanying bio cultural diversity is still some way off.

There has been no clear explanation for the slow pace of adoption however, and as Düvel (1991) indicates, non-adoption of any innovation may be attributed to the fact that an individual is either incapable or unwilling to adopt. The latter being directly or indirectly linked to lacking a need and related aspects of perception.

Central to the culture of traditional healers is the whole ancestral belief system. This forms the basis from which a healer operates: they operate under the guidance of ancestors through visions and dreams. Each type of healer is usually governed by rules and regulations, which were initiated many years ago and have been transferred from generation to generation. The issue around cultivation of medicinal plants is complicated by the mystery of the effectiveness of medicinal plants, in particular, plants used for protecting households against perceived evil spirits. While most studies looked at trade in medicinal plants and utilisation of medicinal plants by healers, there has been very little emphasis on the extent of use of cultivated plants by healers. This gap has led to policy-makers focusing on generally promoting the cultivation of species and trade of traditional medicines, without actually looking at factors that affect behavioural patterns of healers.

These factors may ultimately explain the slow rate of adoption of medicinal plant gardens. In order for successful promotion of medicinal plant garden projects, cultivated plants had to be compatible with the traditional belief systems. This requires an understanding of indigenous knowledge and different factors that

influence behavioural pattern of each type of healer. From this analysis, empirical evidence should be used to seek answers.

1.1.3 Policy imperatives

Concern about the state of the global environment has given rise to a variety of national and international initiatives to promote the sustainable utilisation and therefore management of natural resources. In South Africa, the National Forest Act No.84 of 1998 made provision for incentives to be provided in order to encourage sustainable forest management (section 4(2)(b)). This may suggest that when the demand for medicinal plants increases, a strategy to cope with shortages must consider more factors than simply cultivation of species in nurseries for healers: it for instance should consider the dynamics of demand for medicinal plants for different purposes.

By taking ancestral belief systems into account, interventions have a base from which to understand the prevailing social, cultural and economic conditions under which traditional healing systems operate. Most users - except traders - still utilise plants for healing and protective purposes and not for commercial purposes. They believe that the ancestors will not be able to direct them to medicinal plant gardens for muti because these were not here during the ancestral times. Because of this, plants from the natural environment are seen as most effective because of their ancestral linkages.

Abbot (1997), note that if forest policy takes this into consideration, cultivation and management of biodiversity may no longer be seen as supplementing shortages of plants but as an economic and social issue, which is one of the many productive activities, that forms part of an integrated sustainable rural development strategy. In this context, one must consider strategies to address unsustainable exploitation of medicinal plants that take into consideration the livelihoods of users, the environment which affects resources, demand patterns as well as the way in which each type of healer respond to scarcity.

1.2   THE STUDY PURPOSE

There is a need to capture and build on the ways in which different specialised interest groups respond to the problem they face and the opportunities they perceive, if forest policy is to be successful in promoting the cultivation of medicinal plants. The aim of this research is to understand utilisation patterns of collected, cultivated and purchased medicinal plant species and whether medicinal plant garden projects can be a solution for all types of healers. The results are expected to provide policy-makers with appropriate responses in tackling the problem of promoting medicinal plant gardens in South Africa amongst the traditional healer community. It also investigates how partnerships with healers can assist in the promotion of biological diversity of resources on communal lands

1.3   HYPOTHESIS

In order to study the adoption of medicinal plant gardens, three main hypothesis were established. The study then proceeded to test and discuss the findings. The hypothesis are:

1.   Medicinal plant gardens are attractive to most healers;
2.   Traditional belief systems influence the way medicinal plants are utilised;
3.   Cultivated plants are perceived to be as effective as collected plants.

The study is divided into six main chapters to test the above hypothesis:

- Literature review: This chapter gives the background of traditional healing, policy responses to shortages of plants and the extent of use of medicinal plants;
- The research methods followed
- Profile of healers;
- Utilisation pattern of medicinal plants;
- Responses to shortage of medicinal plants and
- Concluding discussion.

CHAPTER 2

LITERATURE REVIEW

2.1   INTRODUCTION

This chapter gives a background to traditional healing and gives a brief literature review of the extent and use of medicinal plants in South Africa.

Traditional healing is widely practised in developing countries.   While various researches has been done regarding the different species used and their purpose, King (2000) acknowledges that there remains a very limited understanding of the principles that define the origin and arrangements of traditional healers, as well as cultural links between spiritualism and traditional healing.   This chapter recognises the different understanding and opinions of academics and researchers on the subject of medicinal plants and as such, gives a broad review of the background of traditional healers, extent of use of medicinal plants and previous responses to shortages.

2.2   THE SECRECY OF HEALING PRACTICES

Bbenkele (1998) attribute secrecy and mysteries surrounding traditional healing to intellectual property rights issue:

- A call from ancestors to preserve the life of people and the knowledge they have should be protected as much as possible from the Western medical practitioner;
- Gatherers of medicinal plants and herbs feel that they cannot pass their knowledge on to anybody, for fear of being exploited. They fear that whatever may have been passed on to them might be used against them.

This observation is consistent with Hewson (1998), who also note that traditional healers in Southern Africa withhold knowledge of traditional medicine because of the

fear that Western medical practitioners would exploit the knowledge to their advantage.

2.3 THE ELEMENTS OF AFRICAN TRADITIONAL HEALING

According to Hewson (1998) the three main elements of traditional healing are prevention of and protection from problems; determination of the causes of these problems and the eventual elimination of these problems.

2.3.1 Prevention of and protection from problems

Most work of traditional healers concerns protecting clients from possible affliction. This is because of the belief that most afflictions come from destabilising forces. Protection against them involves warding off the negative force of witchcraft and maintaining equilibrium with other people, the spirit and the ancestors. Protection will in this instance include prophesying for real or possible offences that are wittingly or unwittingly incurred against others. Protection may be accomplished by performing ceremonial acts and using medicine against disequillibrium.

2.3.2 Determination of the causes of problems

Traditional healers consult the spiritual realm by involving and conferring with ancestors. There are several ways in which they do so, depending on their speciality. Dreams and sniffing snuff are a common way of communication with ancestors, irrespective of the speciality. Usually a Sangomas (specific type of healer) uses drums and dancing as a method of communication, while a Ngakas/innyaka (another type of healer) and others will employ other methods relevant to their speciality.

2.3.3 Elimination of problems

Through lengthy apprenticeship with an experienced healer, trainees learn the appropriate use of plants, herbs and animal products for different types of patients. Healing according to healer involves an attempt to remove impurity or disequillibrium

from the patient's mind and body. According to Hewson (1998), healers prepare and prescribe therapeutic medicines, believing that every disorder has a corresponding plant or animal product that will neutralise its effect.

2.4 DEFINITIONS OF SANGOMAS AND NGAKAS/INNYAKA

2.4.1 Historical definitions

In their attempts to differentiate between the Sangomas and Ngakas, Calloway (1870), Hammond-Tooke (1962) and Longmore (1959) confuses the two professions. Calloway (1870) defines a Sangomas to be doctor of divination who variously is called Sanusi, ibuda, innyaka or umungoma. He describes a Sangomas as a traditional healer, or diviner who employs music, dance and the throwing of bones to discover evil and diagnose a disease. Bbenkele (1998) indicates that this definition in fact identifies a Sangomas as an innyaka whilst Hammond-Tooke (1962) suggests that a distinction should be drawn between the herbalist (innyaka) and the witchdoctor proper (isangoma) sometimes called a diviner, who communes with ancestral spirit (amathonga). Longmore (1959) describe an innyaka as one who diagnoses and prescribes remedies for ordinary ailments and disease, to prevent or alleviate misfortune, bring prosperity and good luck and to provide protection against bad luck, accidents and witchcraft. Finally, Mander (1996) describes Sangomas as diviners and mostly women, izinnyaka as healers and mostly men and gatherers (mostly women) as collectors of medicinal plants and herbs and are mostly women. According to van Wyk, Van Oudtshoorn and Gericke (1997) Ngakas is a herbalist and isangoma (ibid.) a diviner.

2.4.2 Profile of Sangoma and Ngaka

Healer type 1: Ngaka

According to Mutwa's (2000) explanation, a Ngakas is person who undergoes training from a parent or grandparent. A Ngakas has little to do with spirits. Ngakas's role is to administer medicines in all its forms. They use divine bones to diagnose a person

and historically they were not allowed to charge a fee for their diagnoses or services to clients. Sangomas used to diagnose and refer clients to them (Ngakas) for treatment. The treatment cost was anything that a client could afford.

Healer type 2: Sangoma

Mutwa (2000) furthermore says that a Sangomas is defined 'as of the living drum' and a diviner (ibid.). They are usually dominated by women and very distinct in appearance. One recognises them through the unique materials that they wrap around themselves, beaded dreadlocks and bracelets. They will, in most cases, employ drums, dancing and singing to communicate with ancestors. A disease called "shaman's syndrome" first afflicts Sangomas when they are called to the profession. This disease afflicts a person in various stages, ending in a vision of where to go for initiation. The trainers will equally have a vision of the initiate. In the past, a Sangomas used to go through initiation for a period of five to ten years, unlike presently, where the initiation period is typically three months. Sangomas were not allowed to heal people, but she/he was expected to diagnose a person and refer him/her to a Ngakas for medicine or treatment. Not all tribes had 'Sangomas' though, e.g. Southern Sotho's called them Mathuela.

Healer type 3: Sanusi

According to Mutwa (2000) a third level of traditional healing is called a Sanusi, which is a combination of a Ngaka and a Sangoma. Historically, the duty of a Sanusi was to advise the nation or the king (e.g. Shaka Zulu's advisor, Nobela, was a Sanusi). Sanusi are usually elderly and they are regarded as psychiatrists and lawyers by their nation. Communities used to rely on them for the transfer of knowledge from generation to generation i.e. when there were tribal wars and a new tribe came in to rule, the Sanusi will be relied upon to pass the history of the tribe to the new tribe. Sanusi were generally known as the 'uplifter' or 'instructor' says Mutwa (2000).

Healer type 3:   Sedupe/Mandau

Mutwa (2000) further defines the next category of healers as Mandau or Sedupe. These healers did not go for any training at all. They rely on ancestors through dreams for guidance. They usually have visions of clients and the kind of treatment these clients will require. They are likewise the Sanusis very rare.

With the influx of Western cultures, a cultural confusion is experienced as traditional healing becomes more and more commercialised. All types of healers now diagnose and dispense medicinal plants.

Gatherers

Gatherers are usually 'middlemen', who are knowledgeable about medicinal plants and would travel long distances to harvest plants for Ngakas/innyaka, Sangomas, herbalists and pharmaceutical companies says Mutwa (2000). Some gatherers are trainee Sangomas or Ngakas. The herbalist usually trades in herbal medicines, they can be from either profession, and they are very knowledgeable with medicinal plants.

2.5   REVIEW OF THE USE OF MEDICINAL PLANT RESOURCES

2.5.1   Demand drivers for medicinal plants

According to Bbenkele (1998) the main drivers of demand for medicinal plants are:

- Pharmaceutical companies: Gatherers supply plants to pharmaceutical companies for processing. He noted that Marshall Chemicals buy in directly from gatherers and they buy large quantities because the herbs and plants brought to the companies are those in season. This is done because of uncertainty of supply and the seasonally of some of the herbs and plants;

- Exports: Adcock (a pharmaceutical company) is willing to assist gatherers by buying raw medicinal plants, and semi- processes them locally for European and

USA exports markets. The demand for these products has been brought about by a shift to alternative medicine in these countries. In Bloemfontein and Cape Town, small-scale farmers are assisted to cultivate medicinal plants for exports markets.

- Domestic use: Medicinal plants are being used by ordinary households and the traditional healing sector for ordinary ailments.

In general, the economic motive is the main demand driving force, Bbenkele, (1998).

2.5.2 International trends

Medicinal plants are one of the most important traded products in the world. In his article, Anon (1998b), reports that 102 medicinal plant species and 29 medicinal animal species have been identified worldwide as priorities for sustainable utilisation and management action. Amongst these, animal species like the endangered green turtle, African rock python, black rhinoceros and plant species such as the frankincense tree, are included. Medicines produced from these endangered species are reported to treat common ailments, in addition to warding off evil spirits, protecting against bullets and curing sexual problems. According to Mukerji (1994), it is estimated that between 35 000 to 70 000 of the 250 000 known species of higher plants have been used for medicinal purposes. The growing human population and demands for botanical products in medicines and domestic uses is leading to the increased gathering of such material from forest areas even to an unsustainable level in many cases, such as Taxaus sp. leaves, Dioscorea sp. tubers, natural environment orchids and bulbs.

Lange (1997) reports that of the 1560 plant species used medically in Germany, 70-90% are harvested from their natural environment. In Cameroon Pygeum africanum tree bark (which is used in Western medicine for treatment of prostrate inflammation), is being harvested in a destructive and unmanaged way. The report further indicates that Cameroon exports an estimated 2000 tonnes per annum of this specie as opposed to Madagascar, which export 600 tonnes a year but where a managed tree planting

programme ensures long-term sustainability. Furthermore, there is concern by the scientific fraternity that the use of Ancistrocladus sp. for research as an anti AIDS drug may lead to its extinction (ibid.).

2.5.3   National use of the resource

Thousands of medicinal plants are harvested from communal areas in South Africa, putting severe pressures on the species collected. While there is poor understanding of the rate at which the declining stock is disappearing, most available literature indicates that there is indeed scarcity of various popular species (Mander, (1997), Cocks (2000), and Cunningham (1988)). The level of demand is also increasing as a result of population growth and the increased use of indigenous medicine to treat AIDS and associated ailments.

Mander (1997), reported that 92% of the traditional healers indicated that they were having difficulties obtaining medicinal plants for their practices and 85% reported that they experienced declines in their stock over the past year. In the Eastern Cape, Cocks (2000) noted that almost 484 tons of natural environment harvested plant material is sold annually in the six urban centres alone and that plant populations will continue to decline due to the vast demand for medicinal plants. In KwaZulu-Natal, popular plants have been depleted in communal areas and the harvesting of popular species are now taking place in more and more distant areas (Mander: 1997).

Mander (1998) reports that a wide range of species are showing indications of unsustainable use as evidenced by the decreasing size of the plants, increasing distance to stock, while supply becoming increasingly irregular and some plants becoming unavailable in certain markets in Durban. Furthermore he indicates that some species have become extinct outside of protected areas in KwaZulu-Natal Province.

2.6 POLICY MEASURES TO ADDRESS DEPLETION OF FOREST RESOURCES

Continuous dependency on natural habitats for the supply of traditional medicinal plants and herbs is destructive to the entire marketing system and conservation objectives. Policy makers worldwide recognise that if the demand for plant medicine is to continue to increase, problems at the root of the supply chain must be addressed now. Jaik (1999), argues that fulfilling the demand for raw materials by research institutions and the local herbal industry, urgently require domestication and planting of medicinal plants. Furthermore he argues that research must be directed towards the improvement of selected species to increase their productivity and quality. South Africa's National Forest Action Programme (NFAP) (1997) recommends a national perspective on a strategy for sustaining the supply of goods and services from forest resources. Recent research (Mander 1998) has recommended the cultivation of alternative sources of supply and that more research be done into sustainable harvesting of medicinal plants to develop management guidelines for the collection of these species. Appropriate strategies may be found if conservationists and resource users work together to investigate possible solutions. This suggests that cultivation of medicinal plants and herbs is the future direction of things in this sector notes Bbenkele (1998).

2.7 PERCEPTIONS REGARDING SPECIES EFFECTIVENESS

There are various misconceptions about the effectiveness of cultivated plants. According to Simon (2000), there can be differences in the biological action of medicinal plants depending on the environmental and genetic differences. The way the plants are harvested and when it was harvested can also make a difference in its quality. Simon (2000) further observe that a good understanding of the plants and the environment in which it is cultivating is required in order to assess whether a plant is of high quality. Added to this, the natural variation of plants within species can also have a tremendous effect on the quality of the product.

While medicinal plants species from natural habitat/environment and cultivated plants species may have the same active biological compounds, diversity in natural populations means that some natural environment plants may contain high amounts whilst cultivated plants may be devoid of it (Anon 1998b). Tally (2000) also reports that there remains great variability in plant quality of cultivated medicine, which also affects the quality of medically active ingredients. He further argues that there are also potential dangers from plants being incorrectly identified both during and post harvest and these problems can further be compounded if plant materials are subsequently mixed.

2.8 ACCEPTABILITY OF MEDICINAL PLANTS THAT ARE CULTIVATED

According to research undertaken by Dold & Cocks (2000) in the Eastern Cape, 82% of traditional healers interviewed indicated that they would make use of cultivated plants within their practice, compared to 7% and 11% who wouldn't and were uncertain respectively. The report further recommends that cultivation programs be implemented at the level of the farming crop, household consumption crop, and as a crop for healers to supplement their practices. Cocks (2000) report that knowledge of the natural habitat of the plants is an essential aspect of cultivating medicinal plants, particularly in any large-scale farming. Furthermore, Mander (1997), Bushbuckridge report, indicates that 60,7% of patients said that they would use cultivated plants, 8.3% of healers already use cultivated plants and a further 91,7% said that they would use cultivated plants. Mander (1998) points out that many healers and plant gatherers already posses the knowledge. This suggest that the key principle when adopting promotion of cultivated medicinal plants is to ensure that plants are cultivated in a situation similar to their natural habitats by providing suitable conditions, the plants cultivate better and reproduce better, providing crop yield and greater sources for increased propagation argues Cocks (2000).

Hale, Bunker and de Beer (1995) indicated that at that time there were an estimated 179 projects focusing on various aspects of indigenous medicine in South Africa. Of these, 35% were chemical/pharmacological analyses, 20% identification of uses and

6% constituted aspects such as trade pattern, economics, legal issues and communication. Thus, although research has surveyed medicinal plant uses assisted in analysing medicinal plant compounds used by healers and traders in this industry, there have been very few studies that have analysed socio-economic and cultural influences on the utilisation of plants by healers.

2.9   SUMMARY AND THEORETICAL APPROACH

While theories prove to be useful in interpreting the pattern of utilisation of medicinal plants, the acceptability of medicinal plant gardens derived from various research theories does not provide for extent or end-use of cultivated plants by different types of healers. In summary it can be said that:

- Depletion of species from their natural environment is of serious concern to healers. Various strategies need to be employed to address the diverse demands for medicinal plants. Traditional healers are likely to adopt medicinal garden projects as one of a number of options. The challenge will be to understand how to build on what is acceptable by the user community as a springboard to address unsustainable exploitation of medicinal plants.

- The healer communities are not homogenous, as such their plant uses differ. The rules and regulation governing each profession forms an integral component of the belief system, and they may also act as a constraint toward the use of certain cultivated plants.

- Indigenous knowledge needs to be considered if appropriate strategies are to be developed in order to meet the needs of healer community, gatherers and conservationist.

- Various taboos and rituals enshrined within each type of healer are used to activate the magic power of species. These taboos and rituals which also act, as prohibitions may not be compatible with the environment in which medicinal plant garden projects are established. Thus, acceptability of utilisation of

cultivated plants may vary in accordance with the prohibition of each type of healer.

- Perception regarding what makes species powerful, influences the demand for species from each source/location. Where and how to harvest certain species to treat clients has strong ancestral linkages. This suggests that if ancestors direct healers to certain locations to harvest species to treat clients, healers are unlikely to go anywhere else for fear that any other specie will not be effective.

CHAPTER 3

THE RESEARCH METHODS

3.1 INTRODUCTION

A socio-economic survey was used to acquire information on the extent of medicinal plant use, and to identify constraints that healers were facing regarding the establishment of medicinal plant gardens. Since the author was stationed 400km outside the project area, had a limited understanding of the culture of the Swazi nation and traditional medicine practices, most of the data collection was undertaken with the assistance of the medicinal plant garden project manager. Regular meetings every second Tuesday of the month, were held with him to discuss research progress and follow-up any changes required or problems that had arisen.

3.2 THE PROJECT AREA

The study took place in Phindulwandle project area, in Nkomanzi, eastern Mpumalanga. Phindulwandle medicinal plant garden is a project that was developed to compensate communities who were relocated from their villages when the Driekoppies Dam was built. The project area is between farms Hectorspruit and Tendele (Annexure B). Communities were divided into different interest groups and each group decided on the type of benefits that they would like to have from the relocation project. Approximately 35 hectares of land was bought for them and each interest group decided on how they would like to use the land. Traditional healers opted for 1.5 hectares of the proposed land to establish a medicinal plant garden. The Komati Basin Water Authority purchased the land for communities and the initial investment for the medicinal plant garden project. An official from the nature conservation authority was seconded to the project for three years.

The Phindulwandle project area stretches from just outside the town of Malelane in the west to the Lebombo mountains and the Mozambique border in the east, and from

the Crocodile River and the Kruger National Park in the north to the Lomati and Komati rivers in the South. It includes about 50km of the Maputo Corridor or the N4 highway and the town of Hectorspruit, Komatipoort and the Marloth nature park development.

3.3 SOCIO-ECONOMIC BACKGROUND

3.3.1 Chieftaincy Structure

Nkomanzi region is divided into Nkomanzi west and Nkomanzi east region. Each region has its own chief and associated headmen per village. Concerns such as deaths and agricultural field seasons are reported to the chiefs through headmen. The Swazi nation co-operates very well with their headmen and their chiefs. The responsibility of the chief is to preserve the culture and tradition of the nation. Currently however, the community perceives the slow delivery of services as a consequence of constant contest of chieftainship by the royal kraal in this area.

Previously, chiefs used to consult regularly with traditional healers in matters relating to culture and tradition, because they used indigenous medicinal species to perform certain rituals that were deemed necessary to cleanse respective villages of bad omens and to preserve cultures. During this period, medicinal plants were harvested in a controlled manner and the communities perceive that species were abundant. The chiefs held traditional healers in high esteem because they offered alternative medicine to the nation. The modern traditional chief no longer aspires to rituals such as the cleansing of villages with the result of poor communication and co-operation between traditional healers and tribal authorities. Due to this breakdown, controlled harvesting of medicinal plants has been neglected and many species have been depleted in communal areas. Communities, as well as traditional healers, have raised concerns about the status of medicinal plants with the chief. The traditional healers in this area believe that the neighbouring woodlands were given to them by their ancestors to ensure that they provide a service to the communities. Thus depletion of resources in this area is of major concern.

3.3.2 Land use

An estimated 115 000 ha of valuable farmland is under land claim. Of this, 20 000ha is under irrigation with high value subtropical crops. The area has agri–industrial plants, including two sugar mills and high tourism potential with existing infrastructure support. The soil is of high quality (Donaldson 2001). Crops under irrigation in the area are bananas, citrus fruits, litchis, mangoes and various vegetables. Sugar cane takes up about (42 000ha) 75% of all cultivated areas of which, commercial farmers plant 63%, Transvaal Sugar Company 18% and small scale black farmers 19%.

3.3.3 Healers characteristics

Healer characteristics are likely to influence medicinal plant use in a number of ways. The type of healer may have a different perception of what makes species effective in terms of whether they are cultivated, collected in natural environment or purchased from gatherers. How these species are prepared and harvested also plays an important role. Different types of healers have specific rules and regulations, which governs the use of different types of plants. These rules govern behavioural patterns of healers for example; a Sangomas may behave differently from a Ngakas when accessing specific species for a particular treatment. The time and period of harvesting may also differ from healer to healer. Age and experience of the healer in the field play an important role, whereby older healers may prefer to purchase species rather than collecting them. Healer type, age, gender, involvement in the project were all characteristics that were tested in the study.

3.4 SAMPLING FRAME

3.4.1 Selection of study area

The choice of the case study was made with consideration of three key points:

- Sustainability i.e. extent of dependence on donor inputs.

- Commitment to the project by beneficiaries: Some projects of this nature showed progress only because participants were members of the family and the major inputs to the project were from donors.

- There had to be equitable sharing of benefits and costs, such as employment and volunteering assistance in terms of labour when there is no income.

The research took the form of a case study approach, where a selected area was chosen for detailed study. The choice of the case study was made with consideration of the communities that had invested their inputs in the projects, to relevance and convenience. Initially two case studies were identified. One was in the Busbuckridge area, where healers were participating in a medicinal plant garden establishment. The second was the Phindulwandle project area. However it later transpired that most of the participants in the Busbuckridge case had family linkages and their inputs came from donor agency. The final choice of Phindulwandle medicinal plant garden was made for the following reasons:

i)   The site provided a situation in which traditional healers were situated adjacent to the project.

ii)   Both project and non-project members belong to the same association and attended the same meetings. The study was stratified according to project members (62%) and non-project members (38%).

iii)   Depletion of medicinal plants in adjacent woodlands meant that communities adjacent to communal resources would be encouraged to look for alternative sources of medicinal plant supply. This also provided opportunities for government to enter into a partnership with healers.

iv)   There were forestry extension officers nearby who could monitor the progress of the work done and communicate problems to the author if they arose.

3.4.2 Selection of study villages

Before selecting villages, the author first discussed the aim of the investigation with the medicinal plant garden manager, the son of the traditional healer, who spearheaded the project. The head of traditional healers in this area introduced us to other healers in the villages and called all the meetings. Villages chosen for this study were those that were located close to the medicinal plant garden project. A healers profile for all villages was carried out through discussions with the chairperson of traditional healers' association before seven villages were chosen for the detailed socio-economic survey. They were selected on the basis of awareness of the existing medicinal plant medicinal plant garden project and proximity.

3.4.3 Sample selection

There were a total of 384 traditional healers i.e. combination of Sangomas and izinnyaka/Ngakas from seven villages in the project area (Nkomanzi region) alone has about 8000 registered traditional healers). For the purpose of this study the total population in these villages were not determined. The name, the corresponding number allocated to the village and the estimated number of traditional healers are indicated in Table 3.1 below. Because generally, healers plant some medicinal plants in their garden for ordinary ailments, it was difficult to decide amongst healers who is a project member and who is not. Finally it was decided that project membership should apply to those who favour mass production of plants. Those project members who do not favour mass production were classified as non-project members.

Table 3. 1:   Estimated number of traditional healers in each village

Village number	Name of Village	Number of registered healers	Sample size
1	Middleplaas	105	41
2	Driekoppies	80	33
3	Jeppe rust	58	20
4	Shulzendal	45	16
5	Schoemansdal	42	16
6	Boschfontein	30	11
7	Buffelspruit	24	10
TOTAL		384	147

3.5. HEALER QUESTIONNAIRE SURVEY

3.5.1 Objective of survey

The purpose of the research was to analyse the pattern of use of medicinal plants and identify constraints that affect the rate of adoption of cultivating medicinal plants in gardens. The results are expected to provide extension agencies with appropriate guidelines for promoting medicinal plant gardens more effectively in South Africa.

The questionnaire was undertaken over a period of four months during the year 2000. The survey was conducted by an experience enumerator namely the manager of the medicinal plant garden project (son of the head of the local traditional healer association) and under the direction of the author.

3.5.2 Planning phases

The planning was undertaken in four phases as set out below.

Phase 1:

A literature review on the background of traditional healing and the extent of use of medicinal plants in South Africa. This phase was done in conjunction with identification of the research problems, the writing of the National Forestry Action Programme and the learning phase during planning of the project.

Phase 2

Stakeholder consultation: Stakeholders were consulted along with healers in villages bordering the medicinal plant garden. Community forestry extension officers in the province assisted the author with contacting the chairperson of traditional healers in the area. The initial meeting nearly did not take place because the traditional healers felt that they have been exploited by people coming to the area to do field work and that the outcome of the studies were not communicated to them. Unfortunately the

author's visit came immediately after a visit by another institution which communities felt was not helpful to them. After negotiation, the chairperson of traditional healers association granted the author permission to address the traditional healers' forum. The meeting was attended by traditional healers from Driekoppies and Middleplaas but was poorly attended.

Phase 3

Following the above-mentioned meeting, another date for the next meeting, to coincide with their usual briefing forum, was set. Almost 40% of the total number of healers in this area attended. Healers were briefed about the objective of the study and questions were allowed. All stakeholders agreed upon ground rules on how the process should proceed. Healers wanted us to assist them in getting information plates for their garden and getting the results of the case study in return for giving us reliable information. It was arranged that a series of meetings be conducted to brief other healers before the actual survey can be done. These meetings were arranged every Tuesday when healers held their weekly meetings and it carried on for about for twelve months. This long period was decided upon in order to assess the extent of interest by healers and to cover almost all healers available in different villages.

Phase 4

The author attended meetings on a monthly base. The manager of the medicinal plant garden kept the register of attendants of every meeting and it was compared with the list of registered healers in the Nkomanzi east region. This was done in order to assess the extent of interest in the project. After six months it was realised that there was between 30 to 40 percent regular response rate by healers and almost 80% of healers had attended two or three meetings.

Throughout the visit, provincial forestry extension officers accompanied the author. The purpose was to ensure that, as government official, the author did not set any unrealistic expectations for healers and extension officers could address and attend to

some of the concerns that were raised. This was also done to ensure that, government officials were there to exploit indigenous knowledge.

The agenda of consecutive meetings were two folds: to understand current issues affecting the availability of medicinal plants and to promote an awareness for the cultivation of medicinal plants. By the end of 1999, most of the issues around traditional healing practices and medicinal plant utilisation patterns had been identified. The problem of degradation of woodlands and the fast rate at which they were disappearing were highlighted. The fundamental principle, throughout the consultation, was to establish trust between healers and the authors. Whenever healers made a request, progress regarding the request was discussed before the next meeting. The type of request that were made was to facilitate in initiating process for funding another medicinal plant garden in the area, information sign plates for the medicinal plant garden and solving dispute regarding accounting procedure. These problems were solved positively by provincial foresters. The author arranged funding for another medicinal plant garden, unfortunately, healers could not get the land from the chief.

3.5.3 Problem conceptualisation

The next step was to conceptualise the problem of non-acceptability of medicinal plant gardens by healers. There were three elements in which the problem was conceptualised:

- Need: traditional healers saw no need for medicinal plant gardens as they were satisfied with the status of natural sources although they were aware of alternatives but believed that there were disadvantages with cultivated medicinal plants;

- Perception: a perception with regard to cultural acceptance of cultivated plants and a perception with regard to what prevents them from accepting cultivated plants; and

- Knowledge: regarding propagation methods and benefits of traditional medicinal plant gardens.

3.5.4   Testing questionnaires

Initially a pilot survey was carried out. This was undertaken amongst 15 respondents outside the project area in another area. The objective was to check the validity and appropriateness of questions, and to allow the enumerator to familiarise himself with the questionnaire procedures. This information was not included in the analysis.

3.6   QUESTIONNAIRE FORMAT

The process of problem conceptualisation was followed by the design of the questionnaire, which took almost four months. The questionnaire was divided into four parts i.e. healers profile, use of medicinal plant resources, medicinal plant gardens and attitudes and perceptions with regard to cultivated plants.

3.6.1.   Medicinal plants use

Details of the use of resources were recorded thus:

- Number of medicinal plants from different sources stored in healers houses; and
- Utilisation pattern of medicinal plants from different sources;

It was not always possible to record the exact number. Where possible the number of medicinal plants collected from different sources were counted and divided in terms of collected, cultivated or purchased species. If no access was granted into the storage room/clients treatment room an estimate number was given by the healer.

3.6.2   Geography of use

The geography of use was recorded by noting whether the species for different purposes was collected from the local vicinity, the wider vicinity or from outside the

village or even country. The aim was to assess for which purpose healers prefer access to plants from outside the village.

3.6.3   Medicinal plant gardens

The questionnaire divided gardens into those established from seeds, seedlings or vegetative material and whether these came from the local vicinity or from far away. This was to assess the accessibility of inputs by healers.

3.6.4   Attitude and behaviour

A problem initially encountered here was that healers were too eager to establish gardens and they did not give honest answers about why they wanted to establish gardens (For instance most of them, both project and non-project members advocated the use of cultivated plants when in fact they were using very little). Further probing indicated that cultivated plants were recommended mostly for trading and not for use in terms of warding of evil spirits.

This section covered perceptions regarding the status of medicinal plants and the effectiveness of plants/ "what gives them power". This was important in terms of establishing the need to have medicinal plant gardens and to understand, what in a healer's perception, gives species power.

3.6.5   Constraints

The section covers the perceived physical constraints to establishing gardens (access to resources, water, pest's etc).

3.7   SAMPLE POPULATION

From a total of 384 registered healers, 147 (38%) were randomly selected. The sample was identified from the attendance register of healers who regularly responded to calls for briefing meetings. There were more female healers in the villages than

male healers and more project members than non-project members and this was reflected in the sample identified. Of the 38% sample of healers selected, 60% were females and project members and 40% males and non-project members.

3.8. FIELDWORK

The son of the chairperson of the local traditional healers association, who is experienced in carrying out fieldwork for other researchers in this area, was trained on how to conduct the interviews. Initially the responsibility of interviewing the traditional healers was divided between the author and fieldworker. After 20 questionnaires were assessed, the qualities of responses were compared. Because the fieldworker came from the participating communities and understood the concept of traditional healing, he was able to indicate whether the author had received genuine responses or not. It was discovered that in some cases, healers actually gave answers, which they perceived would satisfy the author. Based on this assessment, it was decided that the fieldworker should go back to verify answers and continue to do the fieldwork on his own. As a member of the community, he was getting higher quality answers than the outsider. Secondly, he could probe healers without offending them and he understood the culture. This extended the time of fieldwork from two months, initially planned, to four months, but the quality of data collection increase. Furthermore, because of culture and tradition where a young person is not supposed to interrupt an elder while speaking, time to fill in questionnaires varied from healer to healer usually lasting from two to four hours.

3.9 ANALYSIS AND CODING OF THE DATA

For this case study a Statistical Package for Social Sciences (SPSS) was used. The data was entered onto an Excel programme and cleaned. From here the data was coded and transferred onto the SPSS programme.

Statistical analysis was required for testing of the data. The analysis incorporated a number of steps:

3.9.1 Data exploration

i)   Description of the data and checking that the data has been correctly entered into the SPSS program;

ii)   Determination of relationships between variables; and

iii)   Identification of important variables.

Data collected was a combination of qualitative (nominal data) and quantitative data (ordinal and interval data).

3.9.2 Data analysis

- Testing hypothesis: using descriptive analyses.

- Revisiting hypothesis: based on findings from the analysis.

Descriptive analysis

Descriptive analysis procedures were used to check and clean the data set and to identify important variables for further analysis. The relationships between variables were tested and hypothesis revised when required. The socio-economic data was initially subjected to simple descriptive analysis. This involves computation of frequency tables, and simple contingency Tables.

Chi- square analysis

Contingency tables were analysed using goodness of fit statistics where cell frequencies permitted. If the probability value generated from these statistics were less than 0.05, the model showed significant association and the null hypothesis that the variables are independent of each other was rejected. However, according to the

large sample theorem statistics based on the chi-square probability distribution should not be used when:

- In 2 x 2 tables, any of the expected frequency are less than 5;

- In larger tables, any of the expected frequency are less than 1 or more than 20% are less than 5;

Where appropriate, ordinal categories were amalgamated in order to increase cell frequencies.

2 and 3 way Sample Comparison

Non-parametric tests for sample comparisons were used, as most of the data did not satisfy the rules for parametric test (normally distributed interval data). The non-parametric version of the 2-sample t-test, the Mann Whitney 2 sample comparison was used to compare distribution of a variable between 2 independent samples. In this case, the actual values of the data are related by ranks and only limited assumptions are needed about distribution from which the samples are selected. For 3 or more samples the Kruskal Wallis 1- way analysis of variance was used. It is similar to the 2-sample test and the values are replaced by ranks. A non-parametric version of the 2-way analysis of variance is not possible using the SPSS programme and so, no such analyses were undertaken.

CHAPTER 4

PROFILE OF HEALERS

4.1   INTRODUCTION

The traditional healing industry is a mysterious profession influenced by rules, regulations and taboos, which in most cases, governs each type of healer. The belief system emanates from ancestors and regulates most of the decisions to treat clients. The system of traditional healing is also enshrined with cultural belief systems that demonstrate immense governing rules with respect to healing practices. The (belief systems) comprises rituals and taboos, which are closely linked with the environment in which species are harvested, methods of harvesting, preparation and administering the treatment. All these, form the basic tenets of traditional healing practices, have an influence on the magic power and utilisation pattern of each type of medicinal plant species that is required for different purposes. Each belief system is specific to each type of healer and specialisation and is dependent on ancestral guidance. It transpired from interviews that these belief systems have been transferred from generation to generation and are based on years of experience.

The survey of this study initially identified all healers from the healer's register in the area irrespective of whether they were in urban areas or not. It was difficult to say from the register whether healers were Sangomas or Ngakas, since some healers had both gifts. There were more project members than non-project members in the sample population.

This chapter examines the characteristics of different types of healers, with a purpose of identifying which of the characteristics are most likely to influence their behavioural pattern.

4.2   TRADITIONAL HEALERS' CHARACTERISTICS

4.2.1   Sangomas and Ngakas (Type)

There are two main types of traditional healers in the sample area, Sangomas and the Ngakas. As indicated in Chapter 2, a Sangoma use divine bones, dreams and drums to diagnose a client. In the past they referred clients to Ngakas who did not diagnose client's problems, but prescribed treatment only. Things have now changed in the sense that the different types of healers now diagnose and prescribe treatment. A difference between Sangomas and Ngakas is that the latter use divine bones and dreams but not drums to diagnose clients' problems. Within these two types of healers, there are some other sub-categories of healers, but these only become apparent once one analyses the different source of 'gifts' to which healers attribute their profession.

In Table 4.1 the distribution of healers according to type and project membership are indicated.

Table 4. 1:   Distribution of healers according to type and project membership

Capacity	Sangoma		Ngaka		Total	
	n	%	n	%	N	%
Project member.	66	60	25	65	91	62
Non-project members	43	40	13	35	56	38
Column Total	109	100	38	100	147	100

Chi-square=32794 d.f=1 P=.56687

According to Table 4.1, the majority of healers, namely 62 percent (91) participated in the medicinal plant garden projects, while 74 percent (109) of the healers are Sangomas and only 26 percent (38) Ngakas. This predominance of Sangomas can be attributed to the short training period that is required for a person to qualify as a Sangomas as opposed to that of Ngakas. A larger proportion of Ngakas (65%)

participated in the project as compared to Sangomas (60%). However, the difference is not very significant.

4.2.2 Gender

Women play the key role in the implementation of community forestry development initiatives in South Africa (NFAP: 1997). It is expected that the medicinal plant garden project will attract the majority female healers if it has the potential to bring in an income.

Table 4.2 seeks to determine the extent to which gender influenced type of healer in terms of adoption of medicinal plant gardens.

Table 4. 2:   Distribution of healers according to type and gender

Type	Female		Male		Total	
	n	%	n	%	N	%
Sangomas	77	71	32	29	109	74
Ngakas	17	45	21	55	38	26
Total	**94**	**64**	**53**	**36**	**147**	**100**

Chi-square =8.20168 d.f=1 P=.00418

According to Table 4.2, which shows the distribution of healers according to gender, the majority (64%), of the respondents are females as opposed to males (36%). There is a significant difference (chi-square=8.20 d.f=1 P=.00418) between gender and type. For example, of the total number of Sangomas, there are more females (71%) than males (29%). The opposite is found with regard to Ngakas where there are more males (55%) than females (44%). This could be an indication that females tend to have a bigger preference to be Sangomas than males, most probably because women see this profession as an alternative to generate income. It takes many years of guidance from elders and ancestors to become a Ngakas whilst to become a Sangomas can be initiated within a period of three months and they can start generating income.

Table 4.3 is an indication of the distribution of gender according to capacity in the project.

Table 4. 3:   Distribution of gender according to capacity in the project

Capacity	Female		Male		Total	
	n	%	n	%	N	%
Project member.	57	63	34	37	91	62
Non-project members	37	66	19	34	56	38
Total	94	64	53	36	147	100

Chi-square=.17732 d.f= 1 P=.67369

According to Table 4.3, which shows the distribution of healers according to gender and capacity in the project, a larger proportion of females (63 ^{2}%) participated in the project as opposed to males. There was however no significant difference (Chi-square =17732 d.f=1 P=.67369) between female and male project members and non-project members.

4.2.3   Age

Age is known to influence the degree of adoption of an innovation. It is expected that healers who have many years in the profession will be aware of the advantages and disadvantages of using cultivated plants. They will also be familiar with the disadvantages of compromising the rules and regulations governing traditional practices of each type. Similarly, age is expected to influence the rate of adoption of medicinal plant gardens. Table 4.4 gives an overview of the age of natural healers and according to these findings, the majority (49%) are of a senior age (50-70 years), although young healers are not uncommon.

According to Table 4.4 Ngakas are significantly older than Sangomas (chi-square 10.46863 d.f=3 P=. 01498). For example, the average age of Ngakas is 57.3years, while that of Sangomas is only 52.5years.

Table 4. 4:   Distribution of healers according to age and type

Age	Sangomas		Ngakas		Total	
	n	**%**	**n**	**%**	**N**	**%**
Less than 30	5	5	4	11	9	6
30-40	20	18	2	5	22	15
40-50	24	22	4	11	28	19
50-60	19	17	11	29	30	20
60-70	31	29	11	29	42	29
>70	10	9	6	15	16	11
Total	**109**	**100**	**38**	**100**	**147**	
Average		**52.5**	**57.3**			

Chi-square=10.46863 d.f =3 p=.01498

The phenomenon that Ngakas tend to be older than Sangomas may be attributed to the fact that it takes years of training for someone to qualify as Ngakas as opposed to the shorter training periods of Sangomas. Another reason may be because the majority of healers in rural areas are pensioners or have decided to stop working in cities (usually, healers will seek employment in urban areas before practising full time as a healer). Older healers also tend to be loyal to rules and regulation that govern their profession than younger healers who believe in research and development. It is believed that they will adopt or reject the medicinal plant garden concept if they are aware of the advantages or disadvantages respectively. It can be expected that the elder healers accumulated medicinal plants from the natural environment over a number of years, they will not have sufficient medicinal plants in stock while younger healers might experience a shortage, therefore the elderly healer might not necessarily participate in the project.

In Table 4.5 the distribution of healers according to project membership and age are distributed.

Table 4. 5:   Distribution of healers according to project membership and age

Age	Project member		Non-project members		Total	
	n	%	n	%	N	%
Less than 30	7	8	2	3	9	6
30-40	12	13	10	18	22	15
40-50	17	19	11	20	28	19
50-60	21	23	9	16	30	20
60-70	24	26	18	32	42	29
>70	10	11	6	11	16	11
Total	91	100	56			
Average	54.7		53.5			

Chi-square 1.12881 d.f=3 P=.77012

Table 4.5 show that there is no significant difference (chi-square 1.12881 d.f=3 P=. 77012) between age and capacity in the project which suggest that age does not influence the decision to participate in the project

4.2.4   Incentives to join the profession

Traditional healing is a profession enshrined with myths; taboos and only the chosen ones can join it. Survival and sustainability in the profession depend on guidance from ancestors. Generally, nothing is prescribed to a client unless ancestors have approved it. A healer who does not have ancestral support and only join the profession to make money is usually not sustainable. The majority healers therefore join the profession as a calling.

There are various reasons why an individual seeks to join a profession. Usually he/she is driven by opportunities to earn an income, passion for the profession or individual development. Traditional healing is no exception to this rule. Generally healers join the profession as a result of calling, either through acquisition, where a healer gets sick and is instructed to take up the profession, training or he simply gets visions at an early age (descent). Calling as incentive means that a healer was borne

with a gift, usually through constantly getting visions on how to treat clients or he gets sick and is forced to join the profession in order to be cured. Growth and opportunist in the context of this study means a healer merely join the profession as an income earning activity. Table 4.6 seeks to determine the extent to which these parameters influence traditional healers to join the profession. It is believed that the motive to join this profession will also influence the behavioural pattern of a healer.

Table 4. 6: **Distribution of healers according to type and incentives to join the profession**

Type of healer	Incentive to join the profession						Total	
	Growth		Calling		Opportunism			
	n	%	n	%	n	%	N	%
Sangomas	20	69	76	84	13	50	109	75
Ngakas	9	31	15	16	13	50	37	25
Total	29	100	91	100	26	100	146	100

Chi-square=12.6 d.f=2 P=0.001

According to Table 4.6 (which shows the distribution of healers according to type and incentives to join the profession), the majority of healers (62%) join the profession as a calling as opposed to other motives (38%). A significant association (chi-square=12.6 d.f=2 P=0.001) existed between type of healer and what attracted them to the profession which suggest that joining traditional healing is a calling and in most cases is unlikely to be by choice.

4.2.5 Qualification

The level of qualification is known to influence individuals to adopt an innovation especially if they see it as a solution to their problems. This trend is also expected in the case of traditional healers and medicinal plant garden projects. In Table 4.7 the distribution of healers according to qualification and type are indicated.

Table 4. 7:   Distribution of healers according to qualification and type

Qualification	Sangomas		Ngakas		Total	
	n	%	n	%	N	%
No schooling	92	84	32	84	124	84
Primary[1]	13	12	5	13	18	12
Secondary	3	3	0	0	3	2
High School	1	1	1	3	2	1
Total	109	100	38	100	147	100

Chi-square=1.68941 d.f=3 P=. 63929

Table 4.7 shows that the majority of healers (84%) had (little or) no formal schooling, while 1% had high school education. thus no significant difference, (chi-square=1.68941 d.f=3 P=. 63929). This can be attributed to the majority of healers (62%) joining the profession because of a calling.

4.2.6   Speciality

Traditional healing, just like any other profession, has various fields of specialisation most of the time stemming from intensive training since childhood. This is also augmented by guidance through dreams and instruction from their own ancestors. The main category of specialisation is healing which entails treating various ailments. The second category is protecting individuals, houses and cars against perceived evil spirits (herein called protection service). Whilst each type of healer may be more powerful or weaker in a particular field of specialisation, they usually do not provide this service exclusively. This means that a healer may indicate that he specialises in healing, but if he must clean and protect a patient first in order to effect healing, he will be required to provide these services even though they are not his/her speciality. A healer will in this instance always keep medicinal plants for other purpose outside his main speciality field.

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[1]   *Primary Grade 0-Grade 4; Middle school=Grade 5-Grade 7; Secondary Grade 8-Grade 10; High School=Grade 11 and 12.*

In the past the different specialisation was very distinct whereby Sangomas specialised in the diagnostic field and Ngakas prescribed treatments. Due to commercialisation of the profession the line of specialisation between Sangomas and Ngakas is now blurred. Be this may, specialisation is still highly depended on the type of healer. Table 4.8 seeks to establish the degree to which the type of healer influences specialisation.

Table 4. 8:   Distribution of healers according to speciality and type

Speciality	Sangomas		Ngakas		Total	
	n	%	n	%	N	%
Heal	31	28	17	45	48	33
Heal and protect	24	22	13	34	37	25
Heal, train and protect	24	22	2	5	26	18
Heal and train	20	18	2	5	22	15
Heal, train, infertility, protection	6	6	0	0	6	4
Heal and train	3	3	3	8	6	4
Heal, train and fertility	1	1	1	3	2	1
Total	109	100	38	100	147	100

Chi-square=10.46863 d.f=3 P=.01498

According to Table 4.8, which summarises the different functions of traditional healers as they apply to Sangomas and Ngakas, the most common functions of traditional healers (both types) is that of healing (33%). There appear to be some significant differences (chi-square=10.46863 d.f=3 P=. 01498) between Sangomas and Ngakas as far as functions and field of specialisation is concerned. It seems the majority of Ngakas (45%) are specialising more on healing and a combination of protection and healing (34%) as opposed to Sangomas whose specialisation varied between healing (28%), protection and healing (22%) and healing, training and protection (22%) (where they train or initiate trainee Sangomas). An association between type and speciality confirm that the type of healer influences speciality.

The demand for a particular service is expected to influence the rate of harvesting of particular plants. Mander (1998) has indicated that popular species are extinct. It is expected that depletion of particular species will therefore encourage healers to adopt the concept of medicinal gardens to supplement their supply. Table 4.9 seeks to establish the extent to which specialisation influence adoption of medicinal plant garden projects.

Table 4. 9:   Distribution of healers according to project membership and speciality

Speciality	Sangomas		Ngakas		Total	
	n	%	n	%	N	%
Heal	28	31	20	36	48	33
Heal, protect	22	24	15	27	37	25
Heal, train protect	16	18	10	18	26	18
Heal, train	15	16	7	13	22	15
Heal, infertility	5	5	1	1	6	4
Heal, train infertility	0	0	2	4	2	1
Total	91	100	56	100		

Chi-square=1.12881 d.f= 3 P=. 77012

According to Table 4.9, which shows the distribution of healers according to speciality and project membership, specialisation does not influence the decision to participate or not participate in the project (chi-square=1.12881 d.f= 3 P=. 77012). This suggests that a demand for particular treatment is unlikely to influence a healer to cultivate that specie. It may also suggest that the depletion of species for particular treatment is unlikely to influence a healer to cultivate that specie.

4.2.7   Sources of gift

Sources of gifts can vary significantly from healer to healer. Some healers experience this gift at a very early stage (descent) whilst others experienced it at a later age

(acquisition). These categories of healers, which have not gone through any training, are usually referred to as Sedupes. Another category of healers is usually elderly people who have obtained their profession through a combination of training, descent and acquisition. They usually specialises in all fields. They are called Sanusi. When a person gets ill and advised to take traditional healing, he/she goes through some programme of initiation herein referred to as training. In the past it was rare to meet a healer who does not come from a family of healers. Currently, due to commercialisation of the industry, one finds healers who obtained the profession through training only, especially within the Sangomas type. This is because the initiation (training programme) takes about three months and a healer is ready to earn an income. Table 4.10 seeks to establish the frequencies of healers according to sources of gift.

Table 4. 10:   Frequency distribution of healers according to sources of gifts

Sources of gift	N	%
Training and acquisition	48	33
Training	44	30
Training and descent	21	14
Acquisition and descent (Sedupe)	14	10
Acquisition (Sedupe)	13	8
Descent (Sedupe)	6	4
Training, acquisition and descent (Sanusi)	1	1
Total	**147**	**100**

The findings in Table 4.10 (which shows frequency distribution of how healers obtained their profession), reveal that the majority of healers (33%) obtained their source of gift through training and acquisition followed by those who became healers through training only (30%). Fewer healers (14%) obtained their profession by descent and training, while 10% obtained it through acquisition and descent. Only one person obtained his profession through training, acquisition and by descent, this qualifies him as a Sanusi. The finding of this table indicates that there are few healers

who did not undergo training and that most of them, although they had the gift, went through some form of training. Table 4.11 seeks to establish how sources of gift influence the type of healer.

Table 4. 11: Distribution of healers according to type and sources of gift

Sources of gift	Sangomas		Ngakas		Total	
	n	%	n	%	N	%
Training and acquisition	38	35	10	27	48	33
Training	37	34	7	18	44	30
Training and descent	14	13	7	18	21	14
Acquired gift and descent (Sedupe)	7	6	7	18	14	9
Descent(Sedupe)	5	5	1	3	6	4
Acquired	7	6	6	16	13	9
Training, acquisition and descent (Sanusi)	1	1	0	0	1	1
Total	**109**	**100**	**38**	**100**	**147**	**100**

Chi-square=10.46863 d.f= 3 P=. 01498

According to Table 4.11, (which shows the distribution of respondent healers according to sources of gift and type), the majority of Ngakas (26%) and Sangomas (35%) obtained their profession by training and acquisition. As expected a larger proportion of Sangomas (34%) obtained their profession through training only as opposed to Ngakas (18%) (chi-square = 10.46863 d.f = 3 P =. 01498). Usually, it is unlikely that one can just join the traditional healing profession without coming from the generation of healers. In the author's opinion this is as a result of the commercialisation of the industry where Sangomas dominate this category. However the only problem is that they are usually unable to sustain the profession since they do not have ancestors to guide and influence the way they treat clients. There is an association between sources of gift and type (chi-square = 10.46863 d.f = 3 P = .01498) suggesting that sources of gift influences the type of healer.

In Table 4.12 the distribution of healers according to sources of gift and project membership are indicated.

Table 4. 12: Distribution of healers according to sources of gift and project membership

Sources of gift	Project member		Non-project members		Total	
	n	**%**	**n**	**%**	**N**	**%**
Training and acquired gift	29	32	19	34	48	32
Training	26	29	18	32	44	30
Training and descent	14	15	7	13	21	14
Acquired gift and descent (Sedupe)	7	8	7	13	14	10
Acquired (Sedupe)	8	9	5	8	13	9
Training, acquired and descent (Sanusi)	1	1	0	0	1	1
Descent (Sedupe)	6	6	0	0	6	4
Total	**91**	**100**	**56**	**100**	**147**	**100**

Chi-square =1.12881 d.f=3 P= .77012

According to Table 4.12, the majority of project members (32%) and non–project members (34%) obtained their profession through acquisition and training. The majority of Sedupes also participated in the project. Usually the Sedupes has a very strong ancestral linkage. They do not use any diagnostic tool but rely on ancestors for guidance, which suggest that the majority of them will have a preference to use species that have been approved by their ancestors. It is expected that the majority of healers who obtained their profession through ancestral linkages will be reluctant to belong to the project if the purpose is to stop them from collecting from the natural environment. There is no association (chi-square 1.12881 d.f=3 P= .77012) between project membership and sources of gift which suggest that sources of gift does not influence healers to participate in the project. This may be due to the ability of the project to raise income for healers.

4.3   CONCLUSION

The outcome of this chapter indicates that many variables, which usually are expected to influence adoption of innovation, did not influence healers to adopt medicinal plant

garden projects. The only significant variables that showed X^2 association were the type of healer and specialisation. These two variables seem to influence most of traditional healers behavioural pattern. As indicated in the introduction of this chapter, each type of healer has its rules, regulation and prohibitions and healers must comply by them if they are to be effective and powerful. Specialisation is also linked to each type of healer and has also a strong ancestral linkage. This means a healer seeks guidance from ancestors in order to prescribe treatment for a client. Gender plays a role only in so far as type of healer is concerned with the majority of females showing preference to be Sangomas. Age, sources of gift and capacity in the project had no influence in terms of behavioural pattern of healers.

This chapter has given a background to what policy makers and promoters of cultivated plants need to bear in mind when approaching the traditional healing industry. It highlighted the specific area, which need to be taken account of, if behavioural pattern of healers is to be changed. The most important ones being the strong ancestral linkages that each type of healer have and which inadvertently influences how treatment is prescribed to clients. This chapter has set a scene on which specific variables may influence the utilisation pattern of medicinal plants. These variables will be used to analyse the utilisation pattern of medicinal plants by healers.

CHAPTER 5

MEDICINAL PLANT RESOURCES

5.1   INTRODUCTION

The majority of the black population in South Africa uses medicinal plants for a variety of medical and cultural purposes.   The source of medicinal plants has traditionally been from communal land, although limited amounts are obtained from protected resources. Demand patterns for medicinal plants differ from community to community and also within communities. According to Bbenkele (1998) there are four main drivers of demand for medicinal plants namely pharmaceutical and export companies, ordinary households and traditional healers. These users of medicinal plants are to some varying degree, dependent on gatherers to supplement their stock. In the case of gatherers and companies, the harvesting pattern is being driven by the economic motive, which may lead to certain popular species, being over exploited and becoming extinct. The situation is, presumably, somewhat different in the case of traditional healers, although there is still an element of profit motive, the harvesting pattern of medicinal plants is being guided by ancestors and driven by the demands for treatment.

Sustainable management and utilisation of medicinal plants calls for a partnership between interventionists and users. To achieve this objective, it has become necessary for interventionists to understand the utilisation patterns of medicinal plants and design appropriate strategies to address environmental issues, whilst meeting the needs of main users.

This chapter investigates the collection and demand pattern of medicinal plants and analyses important characteristics that influence healers' behavioural patterns.

5.2   SOURCE OF MEDICINAL PLANTS

Usually, healers are trained in all aspects of traditional healing. However, like any other profession, they tend to specialise as they gain experience. One finds that, even though a healer may specialise in one field, he/she will still provide other appropriate additional services to clients, although to a lesser degree. Species stored, including cultivated plants from backyards, are kept in dry form. Usually, they are processed and mixed with other species only when they are dispensed to clients. Depending on the nature of the problem, different species are mixed in one mixture. Data for this chapter was obtained by directly counting the number of different species that were kept in healers' houses and categorising them according to the source. Where this was not possible, healers made estimation. According to the inventory, an average number of 230 different species, collected from different sources, were kept and stored by the respondents. Table 5.1 shows the average number of species that were stored by healers from different sources and shows that the most commonly stored species were collected from the natural environment (79 %) and only small percentage came from purchased (14%) and cultivated (7%) plants. This predominance of natural environment collected species stems from the traditional practice of using mainly collected plants from the natural environment.

Table 5. 1:   Distribution of different medicinal plants kept in storage according to source

Source of medicinal plants	Average number	Percentage
Cultivated	16.3	7
Purchased	32.4	14
Collected	186.5	79
Total	235.2	100

Collected species were the most commonly stored source and 54 percent of healers (Table 5.2) stored more than 300 collected species from the natural environment, where as only 16 percent stored between 1and 100 different species. This predominance amongst stored species collected from the natural environment

probably relates to the supply and demand dynamics of the species. Healers do not need to store species that are readily available (either through purchase or from their own gardens), whereas those species that are collected from the natural environment, and hence not easily accessible, are maintained in storage.

An investigation as to whether respondents' source of plants is related to gender, provided no significant results, as indicated in Table 5.2 which shows the distribution of female and male healers according to number of cultivated, collected and purchased species stored. This suggests that gender does not influence the source of medicinal plants that are being utilised.

Table 5. 2: **Distribution of females and males according to different sources of plants stored in healer's houses**

Number of species per source	Female		Male		Total	
A. Cultivated	n	%	n	%	N	%
0-8	33	53	15	44	48	48
8-15	24	39	13	38	37	37
>15	5	8	6	12	11	11
Total	62	100	34	100	96	100
Chi-square=2.1 d.f=2 P=.34						
B. Collected						
1-100	13	14	11	21	24	16
100-200	16	17	8	15	24	16
200-300	13	14	7	13	20	14
>300	52	55	27	51	79	54
Total	94	100	53	100	147	100
Chi-square =1.2 d.f 3 P=.75						
C. Purchased						
<40	47	50	25	48	72	49
40-50	22	23	12	23	34	23
>50	25	27	15	29	40	27
Total	94	100	52	100	147	100
Chi-square .08 d.f =2 P=.95						

Table 5.3 shows the distribution of project members and non-project members according to different sources of plants stored in healer's houses.

Table 5. 3:   Distribution of project and non-project members according to different sources of plants stored in healer houses

Number of species per source	Project members		Non-project members		Total	
	n	%	n	%	N	%
A. Cultivated						
0-8	47	52	1	20	48	50
8-15	33	36	4	80	37	39
>15	11	12	0	0	11	12
Total	**91**	**100**	**5**	**100**	**96**	**100**
Chi-square=2.1 d.f=2 P=.14						
B. Collected						
1-100	18	20	6	11	24	16
100-200	16	18	8	14	24	16
200-300	9	9	11	20	20	14
>300	48	53	31	53	79	54
Total	**91**	**100**	**56**	**100**	**56**	**100**
Chi-square=4.4 d.f =3 P=.21						
C. Purchased						
<40	48	53	24	43	72	49
40-50	19	21	15	27	34	23
>50	23	26	17	30	40	27
Total	**90**	**100**	**56**	**100**	**146**	**100**
Chi-square=1.5 d.f=2 P=.46						

According to Table 5.3 above, the majority of healers kept very few cultivated and purchased plants in their houses. However, most healers (54%) kept more than 300 collected species. There was no association between involvement in the project and

different sources of plants stored. This suggests that involvement in the project does not influence the source of product that was stored. Significant associations were identified, however, between sources of plants and the healer type and this is indicated in Table 5.4.

Table 5. 4: **Distribution of Sangomas and Ngakas according to different sources of plants stored in healer houses**

Number of species per source	Sangomas		Ngakas		Total	
	n	%	n	%	N	%
A. Cultivate						
0-8	41	58	7	28	48	50
8-15	28	39	9	36	37	39
>15	2	3	9	36	11	11
Total	71	100	25	100	96	100
Chi-square=21.0, d.f.=2; P=.00003						
B. Collected						
1-100	8	7	16	42	24	16
100-200	18	17	6	16	24	16
200-300	16	15	4	11	20	14
>300	67	61	12	31	79	54
Total	109	100	38	100	147	100
Chi-square=25.9 d.f=3 P=.00001						
C. Purchased						
<40	48	44	24	65	72	50
40-50	26	24	8	22	34	23
>50	35	32	5	13	40	27
Total	109	100	37	100	146	100
Chi-square=5.9 d.f=2 P=0.05						

The findings in Table 5.4 reveal that Ngakas store significantly more medicinal plants than Sangomas (chi-square=21.0, d.f. =2; P=. 00003). For example, 36 percent of the Ngakas stored more than 15 cultivated species while among the Sangomas only 3 percent stored more than 15 cultivated species. In the case of collected and purchased species, the tendency is reversed. Sangomas made much more use of collected (chi-

square =25.9 d.f=3 P=. 00001) and purchased (chi-square 5.9 d.f=2 P=0.05) medicinal plants to store than Ngakas. This behavioural pattern may be attributed to the rules and regulations that govern each type of healer. Females are usually prohibited from coming into contact with certain species during certain periods, because it is perceived that they may render them powerless. This also sometimes applies to their female clients. Because of this taboo, they cannot cultivate nor keep certain species. A greater prevalence of females among the Sangomas as shown in Table 4.2 (Chapter 4) could provide an explanation for the difference in storage patterns.

Healers will presumably purchase medicinal plants from traders when they are out of stock. With the relatively smaller numbers of cultivated compared to collected species, one would expect that the purchased species are most likely to be of the collected type. In such a case the same tendencies as with collected species could be expected.

5.3 LOCATION OF SPECIES

When assessing the degree of exploitation of medicinal plant species, it is essential to have an indication of the locality from which they were collected. Table 5.5 shows the distribution of sources of species according to locality.

Table 5. 5: Number of species stored according to locality and source

Vicinity/ Locality	Immediate[2]		Wider		Far away		Total	
	Ave. n	Row %	n	Row %	Ave. n	Row %	N	%
Collected	40.3	21	86	43	72.2	36	198.5	84
Purchased	11.1	30	12.1	33	14	38	37.2	16
Total	51.4	22	98.1	42	86.2	37	235.7	100

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[2] *"Wider vicinity" meant that healers would collect the species within the local area but not immediately around homestead, whilst "far away" means collection from outside the villages border, or even from neighbouring countries*

According to Table 5.5, the majority of species that were collected and purchased by the respondents came from wider vicinities and far away which may suggest that species from local vicinities are extinct or that healers prefer to store those species that originate from far away. For example, of the total collected species, 43 percent were from a wider vicinity and 36 percent from far away. Only 16 percent of the total number of species were purchased. Of these, 71 percent came from outside the village. This corroborates the findings shown in Table 5.4 namely that the species that were stored were primarily species collected from the natural environment and at some distance from the healer's local area.

A Mann-Whitney analysis of variance between location of purchased and collected species and first gender and then project membership indicted no significant differences. Only between healer types could significant differences be established. These differences are shown in Table 5.6.

Table 5. 6: **Mann Whitney analysis of the type of healer and the locality of species collected and purchased**

Type of healer	Immediate[1]		Wider		Far away	
	Mean Rank	Case	Mean rank	Case	Mean rank	Case
(a) Collected						
Sangoma	72.79	106	81.57	109	80.18	109
Ngaka	69.73	37	52.28	38	56.26	38
Mann Whitney Z=-.3886 P=.6976			**Z=-3.6711 P=0.0002**		**Z=-2.9888 P=.0028**	
(b) Purchased species						
Sangoma	77.70	109	80.10	109	77.70	103
Ngaka	63.38	38	54.05	37	47.96	36
Mann Whitney Z=-1.7939 P=.0728			**Z=-3.2471 P=.0012**		**-Z-3.8270 P=.0001**	

According to Table 5.6, there is no significant difference between Sangomas and Ngakas with regard to collected and purchased species from the immediate vicinity however a significant difference occurred between Sangomas and Ngakas with respect to species that were collected from wider vicinity and from far away. For example,

Sangomas showed more preference for species that are collected from immediate vicinity and far away.

This may be attributed to taboos that are associated with the healing power of some species, which may suggest that even though there are herbal gardens, healers will still collect and keep medicinal plants originating from other areas. Secrecy, surrounding what makes species effective, makes the understanding of healers' perceptions regarding the effectiveness of cultivated plants very difficult. For example, the respondent can inform the interviewer the use of different type of species, and warn the user not to cultivate nor use certain species in her/his garden without guidance from a healer because of certain cultural constraints and belief system. This (as explained by the son of a healer who has been identified to take over from his father) is because certain rituals need to be performed first in order to communicate with ancestors and activate the power of the species. This may suggests that although each type of healer can cultivate medicinal plants for commercial purposes, they are aware of the disadvantages of cultivating and using certain cultivated species in their homes. This presents a challenge to policy makers and interventionists because, the purpose of promoting medicinal plant gardens is to encourage healers to supplement their declining stocks with cultivated species with the ultimate objective of conserving species in their natural environment.

5.4   PATTERN OF DEMAND FOR TREATMENT

5.4.1   Trend in client demand

Demand for treatment is probably one of the main determinants of harvesting patterns. Most users, except traders, still utilise plants for healing and protective purposes and not for commercial purposes. It can be expected that the type of healer, who is experiencing an increasing number of clients, will correspondingly use more species.

Most healers went into the profession as a result of a calling from ancestors, as Chapter 4 has indicated. Clients are referred to them through visions, by referral or by word of mouth. The more successful a healer is in solving problems, the more the

number of referrals. Table 5.7 shows the distribution of clients according to type of healers.

According to Table 5.7, the Sangomas had a significantly larger client base than the Ngakas in 1997, and also dominated in numbers. By 2000 the situation has changed significantly in the sense that the Sangomas client base dwindled while the Ngakas's increased. For example, in 1997 32 percent of the Ngakas had more than 40 clients per month, while this percentage increased to 35 in the year 2000. The comparative percentage of Sangomas decreased from 44 to 34 percent. This may be attributed to a number of factors, one of which being the more modern phenomenon that Sangomas, who traditionally only diagnosed clients, now also treats them. Their treatment is likely to be less effective and since healers rely on word of mouth to market themselves, they may have obtained negative appraisals from their own clients.

Table 5. 7: **Distribution of the type of healers according their number of clients per month in 1997 and 2000**

Number of clients per month	Sangomas		Ngakas		Total	
	N	%	n	%	N	%
(a) 1997						
1-20	27	25	17	44	44	30
20-40	34	31	9	24	43	30
>40	47	44	12	32	59	40
Total	108	100	38	100	146	100
(b) 2000						
1-20	51	47	11	30	62	43
20-40	21	19	13	35	34	23
>40	37	34	13	35	50	34
Total	109	100	37	100	146	100

However, a further comparison of trends in client numbers, as shown in Figure 5.1, indicates that over a six-year period there has been a steady decline in the average number of clients treated per healer per month, by all healers. This may be attributed

to an increase in the number of healers, and thus a general decrease of clients per healer. While clients visits health clinic for healing, they still visit traditional healers for diagnoses if they think their disease or problem is linked to witchcraft. Health clinics and traditional healing are therefore used back to back by client suggesting that the attendance of one does not influence the other sector.
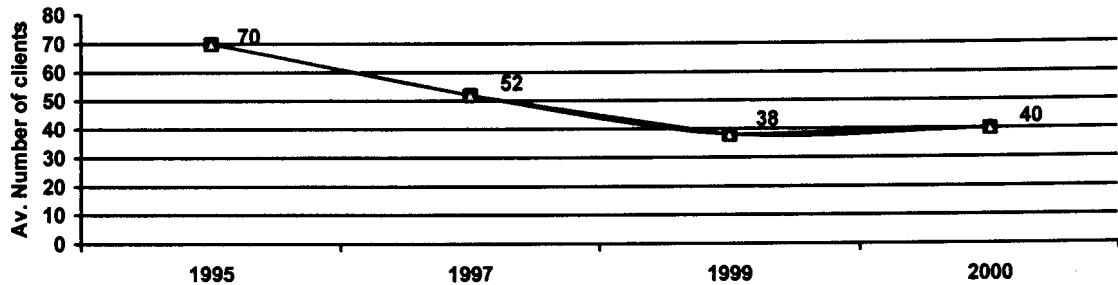
Figure 5. 1:   Changes in mean number of clients over time

5.4.2   Trends in species demands

The demand or potential demand for cultivated species will depend on the variety or number of species used. Table 5.8 shows the number of species used by the two types of healers, for healing and protection purposes.

According Table 5.8, Sangomas collect significantly more species from the natural environment for healing purposes than Ngakas. Only 12 percent of Sangomas collected less than 100 species as opposed to 58 percent Ngakas, whilst 88 percent of Sangomas collected more than 100 species for healing as opposed to 42 percent Ngakas. Similarly, in terms of species collected for protection purposes, a significantly higher percentage of Sangomas (40%) collect and keep a larger variety of species than Ngakas (24%). This may be because Sangomas are more concerned about species depletion and hence are hoarding since they cannot (due to taboos) cultivate such a wide variety as Ngakas.

According to Table 5.8, there is little difference in terms of number of species cultivated and used for healing and protection (usually against lightning, possible afflictions, etc.). Conspicuous differences do however occur between the types of

Table 5. 8: Distribution of Sangomas and Ngakas according to the average number of species from different sources used for healing and protection

| Average number of species | Number of healers collecting species | | | | | |
| | Sangomas | | Ngakas | | Total | |
	n	%	n	%	N	%
(a) Collected for healing:						
1-50	5	5	13	34	18	12
50-100	8	7	9	24	17	11.6
>100	95	88	16	42	106	72.0
Total	**108**	**100**	**38**	**100**	**146**	**100**
Chi square =34.1 d.f=2 P=0.00000						
(b) Collected for protection						
1-20	19	18	21	55	40	27
20-40	46	42	8	21	54	37
>40	44	40	9	24	53	36
Total	**109**	**100**	**38**	**100**	**147**	**100**
Chi-square=20.37, d.f=2, p=0.00004						
Ave. number of cultivated species for healing						
0-8	28	37	8	28	36	35
8-15	18	24	3	11	21	20
>15	30	39	17	61	47	45
Total	**76**	**100**	**28**	**100**	**104**	**100**
Chi-sqaure=4.5 d.f =2 , p=12545						
Ave. number of cultivated species for protection						
0-8	30	43	9	33	39	40
8-15	23	33	4	15	27	28
>15	17	24	14	52	31	32
Total	**70**	**100**	**27**	**100**	**97**	**100**
Chi-square 7.3, d.f 2 p=0.02534						

healers. Significantly more cultivated species are used by Ngakas in muti mixtures for protection (chi-square =7.3 d.f =2 P=0.02534) and for healing (chi-square=4.15 d.f=2 P=. 12545). For example the number of Sangomas and Ngakas using more than 15 species in their muti mixtures are 24 and 52 percent respectively in the case of protection. These findings indicate that the bigger variety of cultivated species used

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by Ngakas applies especially in the case of protection, which is generally accepted to be more difficult to treat. This suggests that the rules and regulations governing Sangomas are more limiting than those of Ngakas or perhaps that Ngakas are more specialised and competent in their field of treatment.

5.4.3 Trends in demand quantities

Healers generally give muti (medicinal plant mixtures) in powder form, mixed in some instances with some other unknown ingredients to give it "power". The previous section gave account of the purpose for which species are used that were harvested and kept in the houses of healers. Not every client is given the same kind of "muti". Healers mix different medicinal species to meet each client's needs. In some instances they even have to go and look for particular species unique for their client's problem. Thus the quantity and the number of species in a specific prescribed mixture differ from client to client. There is a general concern that healers do not buy enough stock from gatherers, which result in some gathered stock being wasted. The healers estimated the quantities per month and these are indicated in Table 5.9.

Table 5. 9: Quantity of species dispensed per month for different purposes by Sangomas and Ngakas

Purpose	Quantity dispensed per month						
	Sangoma		Ngaka		Total		Mann Whitney U
	Ave. kg	%	Ave. kg	%	Total ave.Kg	%	
A. Collected							
Heal	41	42	25	39	66	41	Z=-3.1 p=.0018
Protect	32	33	21	33	53	33	Z=-3.5 p=.0005
Other	24	25	18	28	42	26	Z=-2.9 p=.0033
Total	**97**	**100**	**64**	**100**	**161**	**100**	
B. Cultivated							
Heal	2	40	2	50	4	44	Z-.44 p=.6598
Protect	1	20	1	25	2	22	Z-1.5145 =.1299
Other	2	40	1	25	3	34	Z-3.4468 =.0006
Total	**5**	**100**	**4**	**100**	**9**	**100**	
C. Purchased							
Heal	7	44	3	30	10	38	Z=-3.7751 p=.0002
Protect	5	31	3	30	8	31	Z=-3.3092 p=.0009
Other	4	25	4	40	8	31	Z=-2.9674 p=.0030
Total	**16**	**100**	**10**	**100**	**26**	**100**	

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Table 5.9 shows the distribution of Sangomas and Ngakas according to the quantity of species used per month and for different purposes according to their source. An investigation as to whether quantity dispensed per month is related to type of healer provided significant results for each purpose. For example, of the 196kg' muti dispensed per month, Sangomas dispensed 60 percent.

Both types of healers used similar amounts of cultivated species for healing and protection, however Sangomas tend to dispense a slightly higher quantity for other purposes. This may be during ceremonial activities, which are more endemic to Sangomas. Ngakas used significantly fewer amounts of purchased species than Sangomas. This may be because they are not acquainted with the environment in which they were harvested and do not trust the manner in which those species were harvested. Generally, a larger quantity was dispensed for healing than for any other treatment, whatever the source of the medicinal plants.

5.5   SUMMARY DISCUSSION

Analysis of the results in this chapter indicated that the utilisation pattern of medicinal plants is influenced by the type of healer, however when healers were probed further about this, the logic seems to be more gender related. This did not come out from the statistical analysis however. The predominance of females in the Sangomas profession however, makes the rules and regulation and seems to be more type related. These rules and regulation seems to be more stringent for Sangomas than Ngakas. This suggests that medicinal plant garden, while most appealing to Sangomas (as Chapter 4 indicated), are incompatible with their traditional healing belief systems. It is said that these cultural taboos relate to rendering the magic power of species ineffective. It was evident in this chapter that very little cultivated and purchased species were used. Furthermore, Sangomas tend to prefer to collect species from far away as opposed to Ngakas. This phenomenon suggest that the approach to promote cultivation of species needs to recognise the differences in utilisation pattern of each type of healer. If the objective is to use healers as springboards to gatherers and other users, the current approach of targeting healers when promoting medicinal plant gardens is appropriate, however some fine tuning may be necessary. However if the

objective is to enlist healers to use cultivated plants, then the situation becomes more complicated, as healers are reluctant to reveal problems associated with the use of cultivated medicinal plants. In Chapter 6 the use and cultivating pattern of medicinal plant gardens by healers in their homesteads will be further analysed.

CHAPTER 6

MEDICINAL GARDENS

6.1 INTRODUCTION

The previous chapter showed that ancestral linkage, rules, regulation and cultural taboos plays an important role in traditional healing practices. Strategies to address the unsustainable exploitation of medicinal plants should as such be carefully investigated, taking into consideration these findings as well as the way the healers respond to scarcity. The key is to understand how interventionist can adapt their innovation or message to healers' needs and design appropriate strategies aimed at utilising indigenous knowledge to promote sustainable utilisation of medicinal plants.

Achieving sustainable management and utilisation of medicinal plants thus requires a marked improvement in understanding the role of medicinal plant gardens to users and perceptions regarding the effectiveness of cultivated plants.

The purpose of this chapter is to examine the attractiveness of cultivated plants and perceptions regarding the effectiveness of cultivated plants as compared to collected plants.

6.2 PERCEPTIONS REGARDING THE STATUS OF THE RESOURCE IN THE AREA

An appreciation of the seriousness of the exploitation of medicinal plants is a precondition for the adoption of medicinal plant gardens. In Table 6.1 a frequency distribution of healers according to their perception regarding the status of exploitation of medicinal plants is indicated.

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Table 6. 1: Frequency distribution of healers according to their perception regarding the status of exploitation of medicinal plants

Degree of exploitation	Number of healers	Percentage
Under exploited	13	9
Optimally exploited	20	14
Over exploited	112	77
Total	**145**	**100**

According to Table 6.1, which shows the frequency distribution of healers according to how they perceive the status of the resource, the majority (77%) perceives medicinal plants as being over exploited. This means that the large majorities of respondents appreciate the problem or at least acknowledge it.

Table 6.2 below shows how healers perceive the sustainability of medicinal plants in the immediate to long term.

Table 6. 2: Respondents perception regarding the future availability of species in five and ten years' time and forever

Period by gender	Number of species that will be extinct		Number of species that will be insufficient for healers needs	
Five years	Mean Rank	Cases	Mean Rank	Cases
Female	73.70	94	74.20	94
Male	74.54	53	72.23	52
Mann Whitney	Z= -.1150 P=.9084		Z=-.2699 P=.7873	
(b) Ten Years				
Female	71.20	88	62.84	85
Male	66.51	50	67.79	43
Mann Whitney	Z=-.6627 P=.5075		Z=-.7145 P=.4749	
(c) Forever				
Female	30.54	37	27.71	33
Male	27.67	21	28.43	22
Mann Whitney	Z=-.6236 P=.5329		Z=-.1634 P=.8702	

According to Table 6.2, which shows the Mann Whitney analysis of population variance between female and male healers, few cases of male respondents reported a higher percentage of the number of species that they perceive will be extinct or insufficient for their needs as opposed to more female respondents. There was however, no significant difference in terms of these perceptions for both female and male healers.

Table 6.3 relates to Mann Whitney analysis between project members and non-project members' perception regarding availability of species over three different periods of time.

Table 6. 3: **Respondents according to project members and non-project members and their perception regarding the future availability of species in five and ten years time and forever**

Period	Number of species that will be extinct		Number of species that will be insufficient for healer's needs	
	Mean Rank	Cases	Mean Rank	Cases
Five years				
Project member	78.30	91	69.37	91
Non-project member	67.02	56	80.33	55
Mann Whitney	Z=-1.5173 P=.1292		Z-1.5173 P=.1292	
(b) Ten Years				
Project member	71.01	89	64.67	80
Non-project member	66.77	49	64.22	48
Mann Whitney	Z=-5966 P=.5508		Z=-.0665 P=9470	
(c) Forever				
Project member	31.47	32	27.56	34
Non-project member	27.08	26	28.71	21
Mann Whitney	Z=-.2601 P=.7948		Z=-2601 P=.7948	

According to Table 6.3, a few cases of non-project members reported a larger percentage of species that they perceive will be extinct or insufficient for their needs as opposed to of project members. There was however, no significant difference between the two. This suggests that although non-project members did not participate in the medicinal plant garden projects, they are as concerned as project members regarding the future availability of medicinal plants. This leads to the phenomenon that there may be some other constraints that prevent non-project members from participating in the medicinal plant garden projects.

Table 6.4 relates to the perception regarding the availability of species over three different periods of time between Sangomas and Ngakas.

Table 6. 4: Respondents according to Sangomas and Ngakas and their perception regarding the future availability of species in five and ten years time and forever.

Period	Number of species that will be extinct		Number of species that will be insufficient for healer's needs	
	Mean Rank	**Cases**	**Mean Rank**	**Cases**
(a) Five years				
Sangoma	73.38	109	73.69	108
Ngaka	75.79	38	72.97	38
Mann Whitney	Z=-.3010 P=.7634		Z=-.0892 P=.9289	
(b) Ten Years				
Sangoma	77.42	100	55.78	93
Ngaka	48.67	38	87.67	35
Mann Whitney	Z=-3.7752 P=.0002		Z=-4.3395 P=.0000	
(c) Forever				
Sangoma	32.01	37	23.03	34
Ngaka	25.07	21	36.05	21
Mann Whitney	Z=-1.5063 P=.1320		Z=-2.9308 P=0.0034	

According to Table 6.4, a few cases of Ngakas reported larger percentages of species that they perceive would be extinct or insufficient for their needs as opposed to Sangomas in five years time. There was however no significant difference in terms of perceptions regarding the percentages of species that will be unavailable for this period between these two variables suggesting that in the medium term both types of healers have the same view regarding the status of medicinal plants in the area. The situation is however different for the ten-year period, where a few cases of Ngakas reported that a larger percentage of species would be extinct or insufficient for their needs as opposed to Sangomas. This suggests that Ngakas may be more concerned about the status of medicinal plants in the area than Sangomas. This may explain why more Ngakas use and cultivate more medicinal plants in their homestead as opposed to Sangomas as indicated in Table 6.5 on page 63. In terms of species that will be forever extinct, few cases of both types of healers reported a lower percentage of species that they think will be extinct. There was no significant association in terms of perception regarding number of species that will be extinct during this period between Sangomas and Ngakas suggesting that both types of healers do not belief species will be completely depleted in the long-term. The situation relating to the insufficiency of species for their needs during this period differs between Sangomas and Ngakas. In this case, more cases of Sangomas reported that a lower percentage of species would be insufficient for their need as opposed to fewer cases of Ngakas who reported a larger percentage of number of species. A significant association between these respondents suggests that Ngakas are more concerned about the number of species that will not meet their needs in the long-term as opposed to Sangomas. This phenomenon confirm the findings that Ngakas may be more concerned about the status of medicinal plants in the area than their counterparts and that is why they are being proactive by cultivating more species themselves. It may also provides some understanding in terms of why Sangomas do not cultivate as much medicinal plants as Ngakas to supplement their declining stock. This phenomenon however, does not explain why Sangomas hoard more species from the natural environment than Ngakas (Table5.4). During the interview process, most Sangomas advocated for more medicinal plant garden projects in the area which contradicts the findings from chapter 5, Table 5.2, which showed that Sangomas used very little cultivated plants as opposed to Ngakas. Furthermore Table5.6 showed that more cases of Sangomas

collected larger percentage from wider vicinity and far away as opposed to Ngakas. Table 6.5 below also indicates that more cases of respondents established more of their homestead gardens from seeds that are obtained from the local vicinity than from far away, suggesting that there may still be some medicinal plant species available from the local vicinity. These findings suggest two different perspectives. Firstly, it may be that Sangomas do not cultivate more species in their gardens nor collect more species from local vicinity because of the environment in which these species are cultivated. This suggest that because of rituals and taboos that needs to be performed before species are harvested, medicinal plants from within communities are not compatible with the Sangomas' belief systems. This phenomenon is backed by Table 6.3, which indicates that non-project members showed a larger percentage of species that they perceive will be extinct or insufficient for their needs in the long-term and yet are unwilling to participate in the medicinal plant garden project. Secondly, this may suggest that although Sangomas participate in the medicinal plant garden projects this may be due to the potential of medicinal plant garden projects to generate supplementary income for their families. Düvel (1991) support this phenomenon by stating that if an innovation is located highly in the need or goal hierarchy of an individual, and it is a means to more than one goal or need, then the more it becomes attractive, the more intensive the need for its implementation.

6.3   RESPONSE TO MEDICINAL PLANTS SHORTAGE

Medicinal plant gardens in backyards and nurseries are established by using seeds, seedlings and vegetative materials collected from local, medium distance and far away localities. This section investigates mainly plants that have been cultivated in healer backyards.

According to Table 6.5, which shows the variance analysis of different inputs that were used to establish gardens according to the type of healer, the majority of inputs came from seeds obtained from local vicinities. This suggests that collecting seeds locally to propagate in gardens may be more convenient than collecting seedlings and vegetative materials. Furthermore, it may suggest that if medicinal plants are cultivated from plant sources that are available locally, they are not necessarily

addressing the conservation of hard to find and locally extinct species. This may also confirm findings in Table 5.6 of Chapter five that healers have a preference to use species that are from outside the boundaries of the village.

Table 6.5 is about the inputs or ways of establishing a garden namely collection of seeds, seedlings and vegetative material from different areas.

Table 6. 5: Distribution of different inputs to establish of medicinal plant gardens according to healer characteristics

Inputs per Source	Average number of plants per type				Mann Whitney Analysis
	Sangoma		Ngaka		
	Mean Rank	Cases	Mean Rank	Cases	
Seeds					
Local vicinity	24.80	45	46.71	14	Z=-4.1975 P=.0000
Far away	23.28	43	47.33	15	Z=-4.8066 P=.0000
Seedling					
Local vicinity	32.32	56	52.41	17	Z=-3.4387 P=.0006
Far away	30.78	52	46.59	16	Z=-2.8624 P=.0042
Vegetative material					
Local vicinity	24.73	41	39.94	16	Z=-3.1528 P=.0016
Far away	23.50	39	28.83	9	Z=-1.0685 P=.2853

According to Table 6.5 Ngakas established their medicinal plant gardens using more collected seeds, seedlings and vegetative material obtained from local vicinity and far away as opposed to Sangomas. A significant difference between Sangomas and Ngakas with regard to the extent to which various inputs were used to establish medicinal plant garden confirm that Ngakas seems to be more receptive to domestication than Sangomas. Traditional healing is known to be a very competitive profession enshrined with many challenges. Sangomas may be sceptical of the effectiveness of cultivated medicinal plants since this may have an impact on the lives of their clients.

6.4   PERCEIVED POWER OF MEDICINAL PLANTS

According to Simon (2000), there are various misconceptions about the effectiveness of plants from medicinal gardens, but he concedes that there can be differences in the biological action of medicinal plants depending on the environmental and genetic differences. He also argues that the way plants are harvested and when they are harvested can make a difference in their quality. It therefore requires a good understanding of the plants and the environment to assess whether a plant is of high quality. Traditional healers often have this good understanding.

In Figure 6.1 healers' perception regarding the relative efficacy of cultivated species versus collected species is analysed.

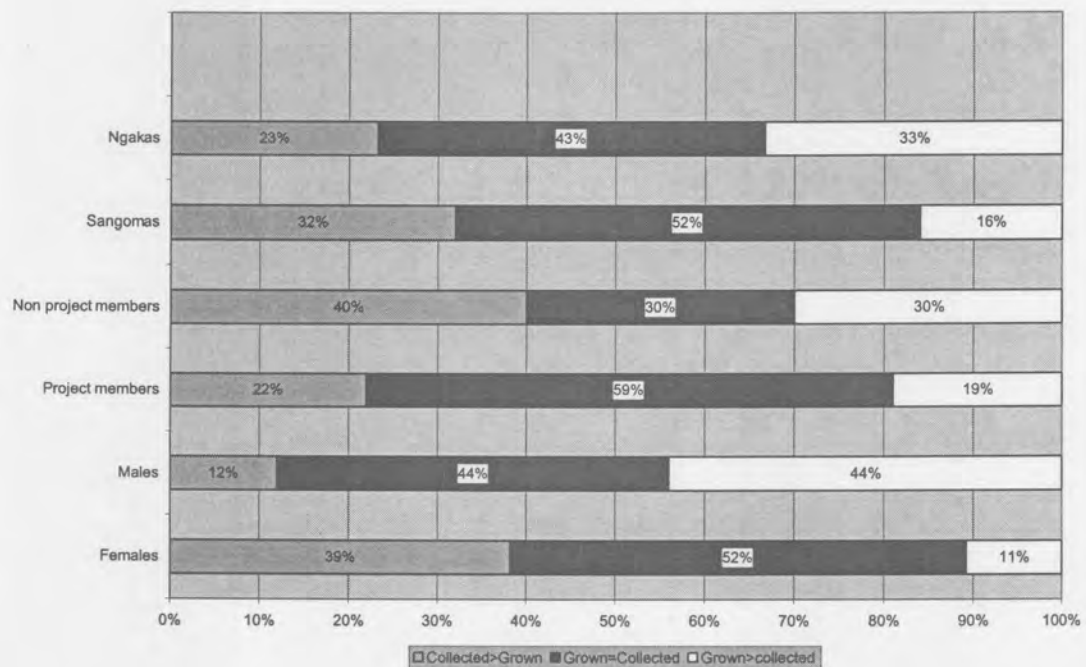**Figure 6. 1:   The relative efficacy of collected and cultivated medicinal plants as expressed by healers in different variable categories**

Only in the cases of Ngakas (33%) and males (44%) did a fair percentage attribute more healing power to cultivated than to collected medicinal plants, whilst the overall comparison falls out very clearly in favour of collected species. Noteworthy is the

significantly better perception of non-project members compared to healers that are involved in the project promoting medicinal gardens. Only 22 percent of the project members rated collected plants as more powerful compared to 40 percent of non-project members while 59 percent of project members versus only 30% of non-project members perceived no difference between cultivated and collected species. The striking feature in these findings is that 30 percent of non-project members perceive cultivated plants to be more powerful than collected species compared to 19 percent of project members. This seems to indicate – if the opinions are honest – that the project to promote medicinal gardens has already had some impact.

A question about what it is that makes collected species more powerful or effective than cultivated plants resulted in responses as summarised in Table 6.6.

Table 6. 6: **Healers' opinions regarding the most critical aspect determining the effectiveness of medicine from plants**

Methods	No. of respondent	Percentage
The way they are harvested	12	8
Where harvested	8	5
Preparation	119	82
Rituals	8	5
Total	**147**	**100**

According to Table 6.6, most healers indicated that it was the preparation, followed by the way species are being harvested that makes species effective. It is surprising that very few healers indicated "muti" is given power by means of rituals and where the plant was harvested. This is contrary to the belief of both clients and healers that the power of species depends on where that specie is harvested and how it was harvested and it represents further evidence of the secrecy surrounding the topic of traditional healers.

The above discrepancy in healer response to medicinal plant gardens, especially with regard to what makes species effective is surprising and confusing. According to a

well-known Sanusi in South Africa, Mr Credo Mutwa's (2000) unpublished explanation, the location and environment is important in affecting plants efficacy because plants from the natural environment build their "medicinal power" over a number of years. Muti from these plants is perceived to be very powerful and no harm can befall their clients if used. Secondly, plants from the natural environment are inaccessible to communities and are not exposed to various taboos that might weaken their power. In this context, the environment and location is considered to influence the potency of plants. In contrast, plants from gardens are always protected against various diseases and wild animals. Mutwa (2000) argues that muti for protection should never be cultivated in gardens because it is ineffective. Furthermore, he recommends that plants, especially those that are associated with taboos, should be cultivated in their natural environment away from communities, where plants will build the necessary "medicinal power" level over time.

6.5   SUMMARY DISCUSSION

The findings in this chapter indicate that there is a need to establish medicinal gardens for healers, however this need differ from that of policy-makers. Healers will like to have gardens for commercialisation whilst conservationist require gardens to promote biological conservation. This discrepancy can be addressed through focusing more on entrepreneurs and individuals as opposed to previous strategies, which concentrated on targeting a group of traditional healers. The secrecy around what makes species effective is still a matter for debate and will remain so for a long time.

CHAPTER 7

CONCLUDING DISCUSSION

7.1   INTRODUCTION

The introductory chapter submitted three hypothesis regarding healers uptake of medicinal plant gardens in support of a statement that cultivation or domestication of medicinal plants will provide an alternative to medicinal plant supply thereby promoting the conservation of biological diversity.   In defence of this, Chapter 2 presented arguments from literature review whilst the research chapters enabled an empirical discussion.   This chapter initially reviews the thesis hypothesis in the light of evidence provided in the study and end up with discussing policy implications and the potential application in view of the results presented.

7.2   RESEARCH FINDINGS AND THESIS HYPOTHESIS

7.2.1   Hypotheses 1: Medicinal plant gardens are attractive to traditional healers

Needs, motives and incentives have been associated with forces that drive the individual to adopt an innovation (Düvel 1991).   It is assumed that the shortage of medicinal plants in the area is also likely to drive traditional healers to adopt the concept of a medicinal plant garden project, in order to supplement the declining stock.   In order to test this theory, the need to establish medicinal plant garden projects as an alternative source of supply was tested.   Issues that were analysed to determine this need were healer's perceptions regarding the status of a medicinal plant garden in the area and whether healers were aware of other alternative sources of supply.   The majority (72%) respondents reported that medicinal plants in the area were over exploited.   Furthermore, a significant difference between the perception of Sangomas and Ngakas was found in that Ngakas, in comparison with Sangomas, indicated that they expect a larger number of species to be extinct or insufficient for their needs.

This suggests that Ngakas could be are more concerned about the status of medicinal plants in the area as opposed to Sangomas. The respondents also indicated that they have been cultivating species in their gardens for a long time. There was a significant difference (P<0.01) in terms of the number of different species that were cultivated between Sangomas and Ngakas with Ngakas cultivating significantly more species in their gardens. This may be because they are most probably more proactive as opposed to Sangomas. The hypotheses that medicinal plant garden projects are attractive to traditional healers is however accepted.

7.2.2 Hypotheses 2: Traditional belief system influence the behavioural pattern of healers

It is generally accepted that the slow rate of adoption of an innovation may be the result of the fact that the suggested solution may not be compatible with the needs, aspiration, goals or problems of the beneficiaries. This phenomenon may also apply to traditional healers with respect to some cultivated plants from medicinal plant gardens, which healers cannot use to treat clients because the environment in which they are cultivated is perceived not to be compatible with certain taboos, which are enshrined within the traditional healers' belief system. Where the environment is seen not to be compatible with the rules and regulations, traditional healers may be reluctant to adopt cultivated plants from medicinal plant gardens. To test this phenomenon, storage pattern and utilisation pattern according to various characteristics of healers were analysed. The findings in Chapter 5 revealed that Ngakas kept significantly more cultivated medicinal plants than Sangomas (chi-square =21.0, d.f. =2; P=. 00003) while Sangomas kept more collected (chi-square =25.9 d.f=3 P=. 00001) and purchased (chi-square = 5.9 d.f=2 P=0.05) medicinal plants species as opposed to Ngakas. This difference in storage pattern of medicinal plants suggests that the rules and regulation governing each type of healer is different. An investigation of the utilisation pattern also revealed that significantly more and a larger variety of cultivated species are used by Ngakas in muti mixtures for both healing (chi-square =7.6 d.f=2 p=. 02) and protection (chi-square=15.5 d.f =2 p=0.0004) in comparison with Sangomas.

The Mann Whitney analyses presented in Chapter 6 revealed that Sangomas thought that, on average, a larger number of species will be extinct or insufficient for their needs in five and ten years time as opposed to Ngakas. Surprisingly though, Sangomas cultivated and used on average very few cultivated species in their homestead, preferring rather to purchase and collected. Cultivated species that were commonly cultivated were those that were used for healing purposes, with very few cultivated species used for protection purposes. Contrastingly, more Sangomas and female healers participated in the project than male and Ngakas healers. This suggests that Sangomas only participate in medicinal plants garden project for purposes other than healing and protection. The limited use of cultivated species for protection purposes may be attributed to the fact that these species are associated with taboos, which may prevent healers from cultivating them in gardens. According to Düvel (1991), negative forces that are associated with such disadvantages may act as constraints towards the adoption of an innovation. These negative forces which are inherent in the traditional belief systems, may continue to exist even though healers are already participating in the project and recognising the decline in natural plant stocks. The phenomenon that certain rituals have to be performed before species are harvested, to affect certain magic powers, also suggests that medicinal plant gardens may also not provide an accommodative environment for such rituals.

The above analyses suggest that rules and regulations governing Sangomas are more limiting than those of Ngakas or perhaps that Ngakas are more specialised and competent in their field of treatment. These rules and regulations refer back to ancestors who usually are consulted for guidance before a client can be treated. They also show that healers are aware of the relative disadvantages of certain cultivated species. These findings provide evidence for the hypotheses that ancestral linkages influence behavioural pattern of healers. It also means that the hypotheses that traditional belief systems influence the behavioural pattern of each type of healer seem to be valid.

7.2.3 Hypotheses 3: Cultivated plants are as effective as collected plants

If an innovation is perceived to be better than the one that preceded it or to have more advantages, it is generally assumed that beneficiaries will adopt it. However, where certain disadvantages cause concern, beneficiaries are not likely to adopt the new innovation. Comparisons in terms of the relative advantages of cultivated as opposed to collected medicinal plant species from the natural environment medicinal plants were analysed in terms of gender, capacity in the project and type of healer. This was the most difficult hypothesis to test, for it involves secrecy, competitive edge amongst healers and secondary needs of healers. Healers were reluctant to disclose their preference regarding cultivated as opposed to collected species due to fear of losing donor funding for another medicinal plant garden project. For example, only 57percent of the respondents agreed to respond to this question. Of these 30 percent of non-project members reported that cultivated plants are more effective than collected as opposed to 19 percent project members (Z=6.6 d.f=2 P=. 03615). It appears from this analysis that non-project members exaggerated their perception regarding the relative advantage of cultivated plants in order to get funding for another medicinal plant garden project. In effect, all healers use relatively few cultivated species, and it is proposed that the great demand for medicinal plant gardens by all healers is a result of the commercial benefits as opposed to primary needs they receive from the project. An investigation of the relationship between perception regarding the prominence of cultivated plants and the type of healer as such revealed no significant difference (Z=3.10 d.f=2 P=. 21190) suggesting that both types of healers have a similar opinion about the effectiveness of these. There was however a significant difference (Z=15.14 d.f=2 P=. 00051) between female and male healers with respect to this issue, whereby the majority of females favoured collected species. The taboos restricting female healers from cultivating certain plants in their homestead probably contributed to these findings. From this analysis the hypotheses that cultivated medicinal plants are as effective as collected cannot be accepted yet, and calls for more research.

7.3. POLICY IMPLICATIONS AND APPLICATION OF THE WORK IN THE STUDY AREA

- By taking the form of a detailed case study, it was possible to identify factors, which greatly influence the behavioural pattern of a healer. The results could proof to be useful in the design of future medicinal plant garden projects and in the promotion of conservation of medicinal plant diversity. It has broader implications regarding issues of interventions by policy makers, aimed at improving medicinal plant supplies to traditional healers. The findings emphasised the need for integrated rural development to provide local solutions to local problems and to recognise the influence of diversity within the healers community;

- Interview responses, although useful, cannot always be taken at face value. This is particularly the case where there is little understanding of the culture and the underlying belief system. If, in addition, there is a traditional secrecy surrounding the topic or area of research, as is the case with traditional healers and their gifts and powers, this applies all the more. Initially at least, it seems appropriate to try accessing the indigenous knowledge through an enumerator acquainted with the culture, but ultimately trust is critical. An initial open discussion on the motives and purposes of the research and how the research can benefit the community can promote it. This should also imply that an undertaking be given to provide feedback as far as results are concerned and, of course, that such an undertaking be honoured;

- From the interviews, the majority of healers indicated that they favoured medicinal plant gardens, but the emphasis was on the value as an income generation option. Forestry and agricultural extension agencies must therefore not assume that supply shortages will lead to increased adoption of medicinal plant gardens. With the acknowledgement by policy makers that there is a need for community based resource management, a new partnership approach appropriate to the needs of healers is needed in order to ensure sustained conservation and management of medicinal plants. The strategy to cope with possible shortages is not simply a

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process of cultivation of species in medicinal plants gardens for healers but there is more factors to consider such as cultivation for income generation and ornamental purposes. In the context of rural development, cultivation and management of biodiversity may no longer be seen as only supplementing shortages of plants, but as an economic and social issue, which is one of the many productive activities that are incorporated into the economic system in rural areas;

- If policy-makers take this rural development (as opposed to species conservation) approach, they can promote domestication by assisting with start up finances and marketing of the produce to urban or co-operative markets; and

- Addressing depletion of medicinal plants requires policy makers to take account of the culture of traditional healing practices, which is usually surrounded by myths, taboos, rules and regulations. The results further indicate that extending gardens and even the provision of plants from nurseries to healers per se ignores the large differences in behaviour and adoption attributable to traditional belief systems. Because of ancestral linkage, plants from the natural environment are seen as most effective because of ancestral linkages. By taking ancestral belief systems into account, interventions have a base from which to understand the prevailing social, cultural and economic conditions under which traditional healing system operates. In this context one must take management techniques most suited to local requirement or, to mount effective action to reform attitudes of healers and perhaps users.

7.4. FUTURE RESEARCH PRIORITIES

This study calls for follow-up research in order to arrive at more reliable information and a better understanding of the underlying motives of behaviour. For example, the majority respondents expressed that they were in favour of medicinal plant gardens. Was the motive a conservation concern, or the interest in an income generating option through selling cultivated medicinal plants?

The underlying problem of slow or non-adoption (under-adoption) of cultivating medicinal plants is actually one of over-adoption (over-exploitation or over-reliance) of naturally cultivating plants. This type of behaviour is, especially from a behaviour-theoretical point of view, insufficiently understood and needs more research.

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APPENDIX A – QUESTIONNAIRE

QUESTIONNAIRE: ACCEPTABILITY OF MEDICINAL PLANTS GARDEN: HEALERS' PERSPECTIVE FROM NKOMAZI EAST REGION

1. Name of candidate:.................................   v1   ☐

2. Gender
F   =1   v2   ☐
M   =2

3. Capacity

Project member   A   (1)   v3   ☐
Non-project member   A   (2)

3. How old are you?   Age   v4   ☐
                                                               v5   ☐
<30   (1)
30-40   (2)
40-50   (3)
50-60   (4)
60-70   (5)
>70   (6)

1. What type of healer are you?   V6   ☐

Sangoma/Mandau   (1)
Ngaka   (2)
Other   (3)

1=yes
2=no

2. Name of Village   v7   ☐
3. *What is your speciality?*

-
-
-

1. What is your highest formal qualification?   No. of years   v8   ☐
No schooling   (1)
Up to primary level   (2)
Up to secondary level   (3)
Up to high School   (4)

2. Have you had training in your profession? V9 ☐

Yes   (1)
Somewhat   (2)
No   (3)

3. What is the source of your gift?

Training	(1)	v10
Descent	(2)	v11
Acquired personal gift	(3)	v12
Other	(4)	v13

1. Yes
2. Somewhat
3. No

4. For how many years have you been a traditional healer?   V14   ☐

		v15	☐
< 5	(1)		
5-15	(2)		
15-25	(3)		
25-35	(4)		
>35	(5)		

5. What interested you in the profession?
a) expertise

v16   ☐

i)	Competition (Growth)	(1)
ii)	Calling	(2)
iii)	Moving out	(3)

a) incentive

v17   ☐

i)	compassion	(1)
ii)	Money	(2)
iii)	Other	(3)

1. How do you intend to sustain your profession?   V18   ☐

1=More training
2=More patients

2. As a traditional healer, how many species do you use   V19

                                                           V20

<   50   (1)
      50-100   (2)
      100-150   (3)
      150-200   (4)
      200-250   (5)
      >   250   (6)

3. How many of the species that you use are obtained from (use the percentages above):

		No		%
(a) Growing	(1)	v21		v24
(b) Collecting	(2)	v22		v25
(c) purchasing	(3)	v23		v26

1. What number of the species that you use are found in:

Collected   **Purchased**

		No	%	No	%
• The immediate vicinity	(1)	v27	v30	v33	v36
• The wider vicinity	(2)	v28	v31	v34	v37
• Is found far away	(3)	v29	v32	v35	v38

1. What number of species that you use :

For: Are: Collected (1)   Grown (2)   Collected elsewhere (3)

	No	%	No	%	No	%
• Healing v39		v42	v45	v48	v51	v54
• Protection v40		v43	v46	v49	v52	v55
• Ceremonies v41		v44	v47	v50	v53	v56

1. How many species that you use for the following would you like to have but it is not available anywhere?

			No.		%
• Healing	(1)	v57		v60	
• Protection	(2)	v58		v61	
• Ceremonies	(3)	v59		v62	

1. How do you see the status of medicinal plants in this area? Would you say they are: v63

• Under exploited   (1)
• Optimally used   (2)
• Over exploited   (3)

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2. In general what is your believe regarding the effectiveness of grown vs. collected species

				Own opinion	Patient opinion
•	Collected	> grown	(1)	v89 ▢	v90 ▢
•	Collected	= grown	(2)		
•	Grown	> collected	(3)		

1. Estimate the quantity that you use per month for the following :

		Collected (1)		grown (2)		Purchased (3)
• Healing	v91	▢	v94	▢	v97	▢
• Protection	v92	▢	v95	▢	v98	▢
• Other	v93	▢	v96	▢	v99	▢

1. In your opinion what makes medicinal plants effective? (1=yes 2=no)

- The way you harvest them;   (1)   v100 ▢
- Where harvested   (2)   v101 ▢
- Natural or grown   (3)   v102 ▢
- Preparation   (4)   v103 ▢
- Ritual   (5)   v104 ▢

1. Place the different considerate in order of importance

10 ▢▢▢▢▢

v105   v106   v107   v108   v109

2. Currently how many healers are in this area?   V110 ▢

	No.		%
What was the number five years ago?	V111	v114	▢
What was the number three years ago?	V112	v115	▢
What was the number twelve months ago?	V113	v116	▢

1. Do you expect the number to increase?

Yes=1   v117 ▢
Somewhat=2
No=   3

2. Number of clients/patients (per month)

• Currently	(1)	v118	▢
• twelve months ago	(2)	v119	
• 3 years ago	(3)	v120	
• 5 years ago	(4)	v121	▢

1. Do you think the number will:

1) Decrease   2) Static   3) Increase   v122 ☐

1.
2. What problems do you encounter in establishing your own medicinal garden

-
-

1. What is your level of knowledge regarding medicinal gardens

• Propagation methods	(1)	v123	☐
• Harvesting methods	(2)	v124	☐
• Soil preparation	(3)	v125	☐

Yes   =1
No   =2

APPENDIX B – MAP

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Kruger National Park

GUTSWAKOPMAHUKUPE
KABOKWENI
DWALENI HLAU-HLAU
NGODINI
NEWSCOM
SIPHELANYANE
ALDIE
MSOGWABA
DAANTJIE
LUPHISI
BERG EN DAL
Mlambeni
Mnyeleni
Crocodile
HECTORSPRUIT
KOMATIPOORT
Matjulu
KARINA
KANYAMAZANE
Crocodile
MPAKENI
MATSULU B
MATSULU A & C
Crocodile
MALELANE
N4
TENDELE
Ngweti
Komati
Mbombela
KAAPMUIDEN
Mbuzuluwane
Blinkwater
Phindulwandle Project
Nkomanzi
Kaap
LOUWS CREEK
R570
VLAKBULT
PHIVA
LOUISVILLE
BUFFELSPRUIT
KAMHLUSHWA
TONGA BLOCK C
SHEBA MINE
Mhlambanyathi
SCHOEMANSDAL NORTH
SCHOEMANSDAL SOUTH
LANGELOOP
KWA-ZIBUKWANE
NGWENYENI
DRIEKOPPIES
MIDDELPLAAS
Mzinti
MZINTI
SHEBA
JEPPES REEF
Mambane
Uinjindi
SHULZENDAL
BOSCHFONTEIN
NTUNDA
MANGWENI
STEENBOK
SKOONPLAAS
SIKHWAHLANE
Mlumati
JEPPES RUST
MAGOGENI
GOBA
MADADENI
FIGTREE
TIMBOKWENI
MBANGWENI
PHAKAMA
Mgobode
SIBANGA
MGOBODE
SIBANGE
Mhlenti
VUKUZENZELE
KHOMBASO
MAGUDU
NDINDINDI
Mphofu
MBUZINI
THAMB-
MANANGA KNULU

MOZAMBIQUE

SWAZILAND

Mpumalanga: Villages in Nkomanzi District

- ···— International Boundaries
- ·–·– Provincial Boundaries
- —— Demarcation Areas
- ▩ Villages

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Department of
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Directorate Geomatics
Ad Hoc Mapping