THE POTENTIAL ROLE OF AMADUMBE MARKETING FOR RURAL SMALL SCALE FARMERS IN MBONAMBI MUNICIPALITY

Prudence Ntombifikile Tembe

Submitted in partial fulfillment of the degree of

M Social Science (Community Resources)

School of Agricultural Sciences and Agribusiness
Faculty of Science and Agriculture,
University of KwaZulu-Natal,
Pietermaritzburg

November 2008

ABSTRACT

Involvement in agricultural activities has generally been the main livelihood strategy for rural people. This was also the case with KwaMbonambi and Sokhulu farmers, especially amadumbe producers. The research was therefore undertaken to explore the marketing opportunities for amadumbe in the Mbonambi Municipality under which KwaMbonambi and Sokhulu tribal areas fall.

A research team was formed by five staff members from the Department of Agriculture including the researcher. Five research tools were used to collect data and these were questionnaires for formal retail shops, focus groups for processing centres, a transect walk to assess the land availability, sustainable livelihoods and force field analyses for amadumbe producers,

From the findings, the formal retail shops and processing centres did not have a direct link with local amadumbe producers of KwaMbonambi and Sokhulu. Their produce came via agents from Durban and Johannesburg.

Amadumbe producers on the other hand were producing amadumbe for their own consumption or to sell either to local communities (from the garden gate) or to hawkers in nearby towns. A recommendation was made that an amadumbe marketing forum be constituted in order to close the gap between formal retail shops, the processing centres and the amadumbe producers of KwaMbonambi and Sokhulu. Farmers felt that they could produce amadumbe of the quantity and quality required by the formal outlets if they improved their production amounts and marketing strategies.

DECLARATION

I, ...**Prudence Ntombifikile Tembe**..... declare that:

(i) The research reported in this thesis, except where otherwise indicated, is my original research.

(ii) This thesis has not been submitted for any degree or examination at any other university.

(iii) This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from those persons.

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Signed: ..... Date .....

As the candidate's supervisor, I agree to submission of this dissertation/thesis.

Signed: ..... Date: .....
Professor J M Green.

ACKNOWLEDGEMENTS

First and foremost I would like to give praise to God almighty for keeping me this far.

Acknowledgement is also express to my family; Mr. Solomon my husband, my five sons Reginald, Romeo, Sma, Junior and S'phelele for loving me and supporting me and doing without me sometimes during the period of my studies. I am humbled by the support given by Sma in typing the whole document. My professor Maryann Green is one person. I cannot find the words enough to say thank you. She was a pillar, a unique leader, an understanding mother and friend. She is one person I could not do without.

Finally I would like to thank the following colleagues: D.G Myeza, M.A Nsele, J Ntuli, N.A Mthethwa from the Department of Agriculture and Environment Affairs for serving as members of the research team.

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ABBREVIATIONS

DAE	Department of Agriculture and Environment (Provincial KwaZulu-Natal)
FA	Farmers Association
FFA	Force Field Analysis
FGD	Focus Group Discussion
FSP	Food Support Programme
INR	Institute of Natural Resources, Pietermaritzburg
ITDG	Intermediate Technology Development Group
MSE	Micro-scale enterprise
NDA	National Department of Agriculture
PRA	Participatory Rural Analysis
SLA	Sustainable Livelihoods Analysis

CHAPTER 1: THE PROBLEM AND ITS SETTING

1.1 Background to the study

The international marketing of traditional products is a trend that can be open to small scale farmers for poverty alleviation. "Countries are currently involved in traditional foods on a global scale" (Shin 2006). However competition at international level is very high and requires a distinguished product in order to remain competitive. Traditional products on the other hand, although they do satisfy certain conditions for competitiveness like uniqueness, experience challenges when it comes to having appropriate technology for the mass production of high quality products for global markets (Shin 2006). According to Witkowski (2008), foreign companies have greater power than local cultural producers. Nevertheless an effort has been made to identify a traditional food with commercial potential (in this instance, amadumbe) and further develop it through the establishment of four processing centres in South Africa by CSIR (Mampuru 2007)

The research was planned in such a way that it addressed the poverty alleviation needs of selected previously disadvantaged communities. The areas identified for this purpose were Mbonambi and Sokhulu, both in KwaMbonambi Municipality. Great poverty prevailed in both Mbonambi and Sokhulu. The study was expected to have an impact on poverty alleviation, since many people in Mbonambi and Sokhulu were living below the poverty line (Mbonambi IDP 04/05). According to the Mbonambi IDP (2004/05), the poverty line was measured by the percentage of households, who were using candles to produce light and sources of water. At KwaMbonambi Municipality, 62 percent of households used candles while 59 percent used water sources such as rivers and streams for personal consumption. In both KwaMbonambi and Sokhulu, no people received free basic water or electricity. There was a negative attitude of people towards these services because the traditional leaders were not yet well informed about these free services. Whilst the government was trying to improve the quality /standard of living in rural areas like KwaMbonambi and Sokhulu, the traditional leaders were very sceptical and suspicious of hidden agendas and finally refused the services,

thus denying the communities access to water and electricity. (Mbonambi et al IDP 2004/2005).

The main causes of financial poverty in these areas were apparently retrenchment, unemployment and death. The escalating number of deaths could also be attributed to HIV /AIDS. Women-headed families as well as child headed families were increasing (Mbonambi et al IDP 2004/05). This study was expected to have an impact on such conditions when poor families would finally find a solution to their financial problems, thus realizing one of the millennium development goals, that of halving poverty by 2015 (Annan 2005).

The communities of KwaMbonambi and Sokhulu had their own livelihood strategies which they employed to ensure food security. The main livelihood strategy was involvement in agriculture. Emphasis was put on vegetables, especially traditional ones, such as sweet potatoes, cassava, jugo beans and amadumbe. These were then either used for personal consumption or sold to local people and hawkers, a market which could be very unreliable and unpredictable.

According to literature, the first rule of marketing is to focus on customers needs, find out who they are and where they are to be found (Allerman 2001). It was therefore also necessary to identify formal retail shops selling amadumbe, in the neighbouring towns and undertake a thorough assessment of the desirable characteristics of amadumbe that they were looking for, who their suppliers were, how often they needed stocks and what they wanted, how, where and when they would like them presented and what their customers wanted. This was one marketing opportunity that could provide amadumbe farmers with a regular market for their raw amadumbe.

An additional market arose because the Department of Science and Technology and CSIR embarked on a poverty alleviation project which was primarily about commercializing traditional foods (Moroka 2004). The project resulted in the establishment of two food processing centres for amabumbe, a traditional food. This was a marketing opportunity for the amadumbe-producing farmers of Mbonambi and Sokhulu and was incorporated into this

study. This opportunity was communicated to the amadumbe farmers so that they could adjust their production levels to match the demand of the market.

After establishing the demand characteristics for amadumbe from formal retail shops and processing centres, there was a need to assess whether the amadumbe farmers of Mbonambi and Sokhulu had the potential for providing a reliable source of appropriate supply for formal retail shops and processing centres. The study then focused on land issues to increase their production of amadumbe, access to water, the available labour and production skills, soil and temperature requirements for amadumbe. The study investigated the strategies of the communities of Mbonambi and Sokhulu. A force field analysis was used to investigate the strengths and opportunities of the communities of Mbonambi and Sokhulu in order to explore possibilities of making an entry into the commercial market. The study would further identify weaknesses and threats that could be eliminated.

Unfortunately there was very little specific advice to be gained from literature. No research studies were found relating to indigenous crop production for formal marketing situations, nor on processing requirements of any indigenous South African foods. Much of the foreign reports were not relevant to this situation in rural KwaZulu-Natal.

1.2 Statement of the research problem

How could marketing opportunities for indigenous crops such as amadumbe be pursued to generate income for small scale farmers of Mbonambi and Sokhulu wards of the KwaMbonambi municipality in order to reduce poverty in the area?

1.2.1 Sub-problem one

What were the general specifications of formal retail shops and their intermediaries for amadumbe with regard to quality, quantity and variety that they expected for their shops?

1.2.2 Sub-problem two

What were the criteria used by amadumbe processing centres with regard to quality, quantity and variety of amadumbe needed for processing to produce the best products for their target market, and the effects of seasonality of this crop on their continuous production for the supply of amadumbe- products?

1.2.3 Sub-problem three

Given the requirements of the formal retail shops and processing centres and the current infrastructure available, would the small scale farmers be in a position to cope with the demands of the formal retail shops and processing centres, based on their present farming practices, the quality, quantity and variety of amadumbe in their fields? What changes would be required for them to be the appropriate and reliable suppliers?

1.3 Methodological overview

In order to establish the requirements of the market for amadumbe, semi-structured interviews were conducted with managers of formal retail shops in KwaMbonambi, Empangeni and Richards Bay by means of questionnaires. Focus group discussions were held with the two available processing centres, one at Esikhawini and another one in Stanger (KwaDukuza). These were the processing centres directly involved with the processing of amadumbe. After determining the general specifications of the market, the results were communicated to the small scale farmers of Mbonambi and Sokhulu in order to establish or improve the marketing links and assess the potential of the amadumbe farmers in meeting the demands of the market. The tools administered in this regard were a transect walk, an adapted sustainable livelihood analysis and a force field analysis. See Figure 1.1.

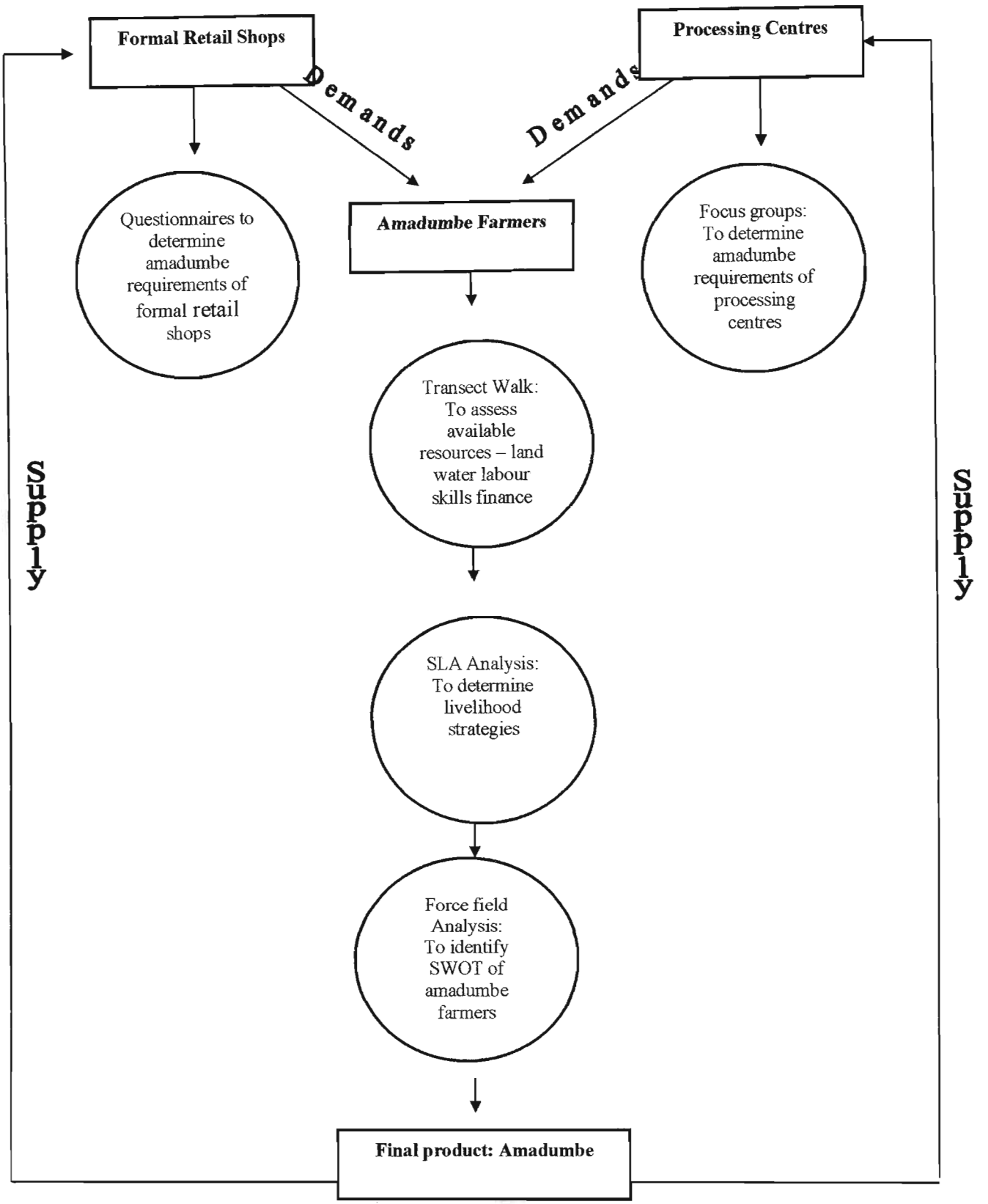

Figure 1.1 Conceptual Framework of Methodology

1. 4 Study limits

The study concentrated on three villages out of eight at Mbonambi and three out of seven at Sokhulu, because it was felt that the villages identified would give a good reflection of the community in those areas. The study did not investigate any other on-selling of amadumbes by the farmers because of its rare occurrence. Only those formal retail shops in the study area that stocked amadumbe participated in the study. Neither the marketing of processed amadumbe nor the internal issues relating to the temporary non-operation of the Stanger processing centre formed part of the study.

1.5 Study assumption

The assumption was that developing marketing linkages between small scale farmers and retail or formal outlets would contribute towards poverty alleviation in the areas studied. Another assumption was that, the six villages researched would provide a sufficiently representative group of farmers for the study for these municipal wards.

1.6 Dissemination of results

The results or findings of this study will be communicated to the Department of Agriculture, the local municipality, respondents, amakhosi (traditional leaders) and colleagues. This study will also be published as a Master's thesis and also submitted as an article in the South African Journal of Extension.

1.7 Structure of the thesis

Chapter one introduces the study and provides background information and the importance of the study. The literature review follows in chapter two. Chapter three includes the description of the study area while the methodology is given in chapter four. The discussion of results from formal retail shops follows in chapter five and the results from processing centres are provided in chapter six. Chapter seven discusses the results of sub problem three, relating to the small scale farmers. Chapter eight includes the conclusions and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The formal marketing of traditional products is a trend that can be opened to small scale farmers to help with poverty alleviation. Countries are currently becoming involved in traditional foods on a global scale (Shin 2006). However competition at international level is very high and requires a distinguished product in order to remain competitive. Traditional products on the other hand, although they do satisfy certain conditions for competitiveness like uniqueness, challenges are experienced when it comes to appropriate technology for mass production of high quality products (Shin 2006). According to Witkowski (2006) foreign companies have greater power than local cultural producers. Nevertheless an effort must be made to identify traditional foods with commercial potential.

South Africa encompasses a rainbow of cultures with their traditional foods. These cultures have for decades prepared and enjoyed traditional dishes which have kept them well nourished (Khumalo 2004). Those were good times when rural communities still owned vast areas of land and large herds of cattle. With immigration and the introduction of western and eastern dishes, the traditional foods gradually became extinct. Expressing her feelings, Buyelwa Sonjica, Minister of Arts and Culture, Science and Technology, commented "Our heritage is often overlooked and unappreciated" (Moroka and Basemzansi 2004). Unfortunately, it is overlooked and unappreciated by the very owners of the culture, once they become more enlightened and educated. For the purpose of this study, traditional food will be discussed but greater emphasis will be put on amadumbe as the traditional crop that was identified for the study. However, when searching through the available and appropriate literature there was very little information available on this specific traditional food. Because of this, the review of literature will be presented under the following topics:

Traditional crops

Marketing of fruit and vegetables in general

- Harvesting
- Handling
- Trimming and cleaning

- Grading
- Packaging
- Transport

Origin and production issues of amadumbe

The nutritional value of amadumbe

Amadumbe processing in Northern KwaZulu-Natal

Using traditional crops for health disorders

Marketing of amadumbe crop

The marketing survey

Sustainable livelihood analysis

Government policies relevant to the study

2.2 Traditional crops in Mbonambi

Traditional crops are crops consumed by a given ethnic group for a considerable time. It is food used by a particular culture from generation to generation (Kruger et al 1998). Some of these crops will be shown in the table 1.1. Traditional crops can either be available as wild plants or domesticated plants which may or may not be indigenous (Howard 2003, Modi 2003).

Table 1.1: Traditional Crops (Odiaka 2005, Howard 2003, Modi 2003)

Leafy vegetables	**Seed crops**	**Root crops**	**Wild fruit**
Amaranthus(imbuya)	Maize	Sweet potatoes	Wild berries
Blackjack(ucadolo)	Beans	Cassava	Amathungulu
Sweetpotato (leaves)	Cowpeas	Baby potatoes	Umncala
Calabash	Sorghum	Amadumbe	Amathunduluka
Lamb quarter	Jugo beans	Peanuts	Ubukhwebezane
Pumpkin leaves			Amarula
Cowpea leaves			Figs
Taro/Amadumbe leaves			

For the purpose of this study, taro will be called amadumbe. Amadumbe also known as the elephants ear, taro potatoes or cocoyam originated from tropical Asia and gradually spread to other tropical and sub-tropical parts of the world (Van Wyk and Gericke 2000)

2.3 Marketing of fruit and vegetables generally

When it comes to marketing fruit and vegetables, quality is the main objective for any producer. Factors such as texture, size, shape, colour, flavour, shelf life, bruising, presence of insects or insect marks, freshness and cleanliness are all components of quality (DAE 2001). The varying prices of fruit and vegetables at the market depend entirely on the quality of the products at the time of purchasing, and the supply and demand ratio. It is therefore imperative that the quality of products be preserved during harvesting, handling, trimming, cleaning, grading, packing and transportation (DAE 2001).

2.3.1 Harvesting

Products start deteriorating immediately after harvesting (DAE 2001). Rapid marketing is therefore very important. Harvesting in hot temperatures should also be avoided as this will speed up deterioration. Picked products should be kept in a cool area or artificially cooled if possible. Fruit and vegetables differ in the rate of deterioration. More perishable products such as lettuce, spinach and tomatoes should not be harvested during the day and extra care is needed when dealing with them. Fertilizer plastic bags are not advisable for carrying the products since they do not allow circulation of air and may cause sweating of these products and this contributes to their deterioration. Crates are therefore preferred as they allow circulation of air. Products should not be too dry as they will become brittle or become turgid (contain too much water) like peas as they snap readily (DAE 2001). During the harvesting of amadumbe, sunny days should be avoided as much as possible, because rapid evaporation of water would be caused and thus deterioration would also begin immediately. Crates are a better option to be adopted by the amadumbe farmers to preserve the products freshness and facilitate transportation.

2.3.2 Handling

Extra care should be taken to avoid scratch marks, bruises or injury to the corms. Such wounds will cause discolouration and allow entry of harmful bacteria and insects (DAE 2001). During this stage, rotting starts and this affects the quality of products very quickly (DAE 2001). Dried leaves of cabbages and spinach will also affect the price even when the edible part is not damaged. It is therefore very important for the farmers to avoid excessive or rough handling of products (DAE 2001).

2.3.3 Trimming and Cleaning

Old yellowish and dry outer leaves of leafy vegetables should be trimmed off as they spoil the appearance of the products. Root crops need to be washed and be free from soil and other foreign items. After washing, products need to be dried before packing to avoid problems like rotting (DAE 2001).

2.3.4 Grading

Grading of root crops and tubers is done according to size. Common sense is also used to separate crops with minor defects. The best roots, free from defects, would be classified as first grade. .The second grade might have minor defects whereas the third grade will have the most defects (NDA 2004). The DAE (2001) stressed that consistency is very important for farmers to have a good name (DAE 2001).

2.3.5 Packaging

According to the document by the DAE (2001), suitable packaging is required and it should neither be over-filled nor under-filled. Products need to be packed according to a certain pattern to suite the size of the product and the dimension of the container. Mesh pockets are also used especially for root crops and tubers. Amadunbe can also be packed in these mesh pockets. Self-help packs are generally used for lower grades, allowing customers to pick loose amadumbe into these packs and weigh them for pricing. According to Chay-Prove and Goebel (2004), amadumbe can also be packed in mesh packets or loosely packed in 10kg cartons. The colour of the packaging material should complement the colour of the product in order to appeal to consumers; for example; white mesh packets brighten the dark coloured amadumbe (DAE 2001).

2.3.6 Transport

During the transportation of fruit and vegetables there are factors that need to be considered in order to preserve the quality of the product (DAE 2001). Products need not be packed too deeply since the bottom layer will be damaged. Gentle-handling is necessary while loading and off-loading. The speed of the vehicle on gravel should also be adjusted accordingly to avoid bruising the products. The load should also be tied down to avoid shifting. There must be enough ventilation while products are in transit. At the same time the load needs to be protected from sun, wind, rain, cold and dusty conditions (DAE 2001).

2.4 Origin and types of amadumbe

The main objective of this study was to investigate the possibility of utilising available traditional crops as a reliable source of income, while pursuing marketing opportunities in the commercial world. Amadumbe was the crop identified for this purpose, mainly because it was readily available in Mbonambi and Sokhulu. Amadumbe, also known as taro, are common in wetlands found in humid areas of Southern Asia, the Pacific Basin, wet tropical Africa and Egypt: the West Indies and certain areas of South America (Anon undated). Chay–Prove & Goebel (2004), also mentioned that amadumbe are native to South Central Asia and India and were subsequently introduced through the Pacific, with migrations of Polynesian people from the Malay Peninsula through the Suda Island and New Guinea. It was clear that amadumbe did not originate from South Africa but eventually, they were introduced in wet tropical Africa and that included North coast of KZN. The humid climate of Mbonambi and Sokhulu as stated in the IDP (2004) is suitable for the production of amadumbe. Amadumbe generically known as *Colocasia Esculeat*a belong to a family of Tracheae (Chay–Prove & Goebel 2004). There are two principal varieties, the large corm called the True Taro and the small corm called the Jap taro (Chay–Prove & Goebel 2004). Both varieties were found in both areas of Mbonambi and Sokhulu, from rich and poor families alike.

Amadumbe are also called the taro potato and they are believed to have originated from South East Asia and India (according to Chay–Prove and Goebel 2004). They further mentioned China, Indonesia, New Zealand and tropical areas of Africa as other countries of

origin. Other countries such as Malaysia and the Hawaiian Islands were also mentioned (Anon 2000).

There are two original cultivars of amadumbe. These cultivars are the small type, a round tuber up to a tennis ball size with purplish to brown hairy skin and white flesh in the inner part of the corm called *Colocasia esculenta* (Chay–Prove and Goebel 2004). The second cultivar is the bigger type which is shaped like a large flat carrot called the large *Colacasia Esculena.* These amadumbe are yellowish to pink in colour and the size could be as big as a pumpkin (Chay–Prove and Goebel 2004). The amadumbe are also classified as hard and soft cultivars. These two cultivars differ in texture, colour and taste (Anon, Undated). This study stresses the importance of knowing the difference because that could affect the marketability of the product. The hard cultivar is used for animals while the soft cultivar is the one that is marketed for human consumption (Anon, undated).

2.5 The Nutritional Value of amadumbe

According to Chay-Prove and Goebel (2004), the amadumbe leaves are generally not eaten, but some traditional communities do use them like any green vegetable. The starchy corm is the one most eaten by people and also marketed by countries like Australia, New Guinea, Sunda Island and South Africa. Amadumbe do not have stems but have long petioles, which are also rich in nutrients. Nutritional information of amadumbe appears in table 2.1, and shows comparison of major nutrients.

Table 2.1 Amadumbe Nutritive values (Langenhoven et al 1991)

Components	per 100g edible portion		
	Corm	Leaves	Petioles
Edible portion (%)	81	55	84
Energy (kilojoules)	257	289,8	79.8
Moisture (%)	77.5	79.6	93.8
Protein (g)	2.5	4.4	0.2
Fat (g)	0.2	1.8	0.2
Carbohydrate (g)	19	12.2	4.6
Fibre (g)	0.4	3.4	0.6
Calcium (mg)	32	268	57
Phosphorus (mg)	64	78	23
Sodium (mg)	7	11	5
Potassium (mg)	514	1237	367
Iron (mg)	0.8	4.3	1.4
Vit A (IU)	Trace	20385	335
Thiamine (mg)	0.18	0.1	0.01
Riboflavin (mg)	0.04	0.33	0.02
Niacin (mg)	0.9	2	0.2
ascorbic acid (vit c)	10	145	8
mg			

Table 2.1 shows major nutrients located in different parts of the plant. The corm appears to have the highest percentage of energy which is 257 kilojoules, with 19g carbohydrates and 0.18mg thiamine. Twelve major nutrients are higher in the leaves than any other part of the crop, while petioles are only high in moisture, fibre and edible portion.

Table 2.2 Comparison of the nutritive value of amadumbe and other staple crops per 100g of edible potion for an adult (Langenhoven et al 1991)

Crops	Carbohydrates (g)	Potassium (mg)	Iron (mg)	Calcium (mg)	Protein (g)
Amadumbe	20.1	550	1.7	40	9.0
Potatoes	18.6	379	0.3	9	1.9
Sweet potatoes cooked without skin	21.3	348	0.5	28	1.7
Potatoes boiled without skin	18.5	328	0.3	8	1.7

In table 2.2, a comparison has been made among amadumbe, potatoes, sweet potatoes cooked without skin and potatoes boiled without skin. The vegetables have been chosen because they form part of staple food for certain communities especially in KwaZulu-Natal and Mbonambi in particular.

When compared with 100g edible potion of other root crops, amadumbe has the highest carbohydrate content of 20.1g. Potassium is exceptionally high when comparing all other crops displayed on the table, 550 mg and the greatest amount of calcium, which is 40 mg. It also has the most protein when compared with potatoes and that is 9.0 g (Langenhoven et al 1991). Based on this information, it transpires that the community with amadumbe at their disposal can be able to benefit nutritionally as well as economically, when they eat and market Amadumbe.

2.6 Amadumbe Processing in Northern KwaZulu-Natal

As an effort to utilize indigenous knowledge, the Department of Science and, Technology in conjunction with the Centre for Science and Industrial Research launched a poverty alleviation programme based on commercialization and promotion of traditional foods (Moroka *et al* 2004). To create awareness of communities' traditional foods, food fairs were held at local, regional and provincial levels. Amadumbe featured on the menus provided by exhibitors. At provincial level, the winning group was awarded funding for the establishment of a food processing centre. Since the winning group was from Mbonambi Municipality, the food processing centre was therefore established in Richards Bay, for better marketing of the product (Khumalo 2004). Food processing is not the end of the story, but traditional food can go far in addressing certain health disorders (Mandy 1998).

2.7 Using Traditional Food for Health Disorders

A diet that is nutritious, wholesome and not heavily refined is important these days, when the world is looking for answers to prevent diseases that attack life as a result of poor food intake or feeding on heavily refined food (Mandy 1998). For example, a dietary thiamine deficiency will result in agitation, confusion, depression and anxiety (Mandy, 1998). According to Chay–Prove and Goebel (2004), amadumbe contain 0.18mg 0.10mg and 0.01mg of thiamine in corms, leaves and petioles respectively as shown in table 2.1. Mandy (1998) further

indicates that dietary riboflavin deficiency causes depression while Chay–Prove and Goebel (2004) indicated the presence of riboflavin in amadumbe as 0.04mg in corm 0.33mg in leaves and 0.02mg in the petioles. It would therefore be appropriate to recommend amadumbe intake to prevent depression, agitation, confusion and anxiety. Mandy (1998) also suggests "a diet with natural unrefined foods that are free from preservatives, hydrogenated oils or fat and other added chemicals," for skin problems. Moroka *et al* (2004) summarized the goodness of indigenous food as "simple, wholesome and close to nature."

2.8 Marketability of the amadumbe Crop

The whole amadumbe crop can be marketable in different countries depending on which potion is used by the majority of people. In Australia the whole crop, namely the leaves, long petiole and corm, is used for human consumption but the corm is the only part marketed for the fresh food market (Chay–Prove and Goebel 2004). Leaves are sold as wrapping material for steamed food in countries such as Australia (Moody 2000). Some of the varieties found in the Hawaiian Islands are believed to have toxins which cause a bitter taste but can be destroyed with prolonged heating (Anon 2000). Chay–Prove and Goebel (2004) also suggested the marketing of corms with five centimetre green tops to extend the shelf life. After discarding the roots, corms are washed, wrapped in fish net packets and stacked in ten kg (kilogram) cartons for marketing purposes.

In Australia, specialty agents are available in cities such as Brisbane, Sydney and Melbourne. These are the agents that sell the products to the retailers (Chay–Prove and Goebel 2004).

This study will follow the marketing links presented in figure 2.1, to assess the prevailing methods available to the people of kwaMbonambi and Sokhulu for reaching consumers. From the farmers they might be channelled via agents or directly to the formal retail shops and then to consumers. Another route would be from the farmers to the processing centres, then via the retail shops to the consumers. The last possible route would be from the farmers direct to the consumers.

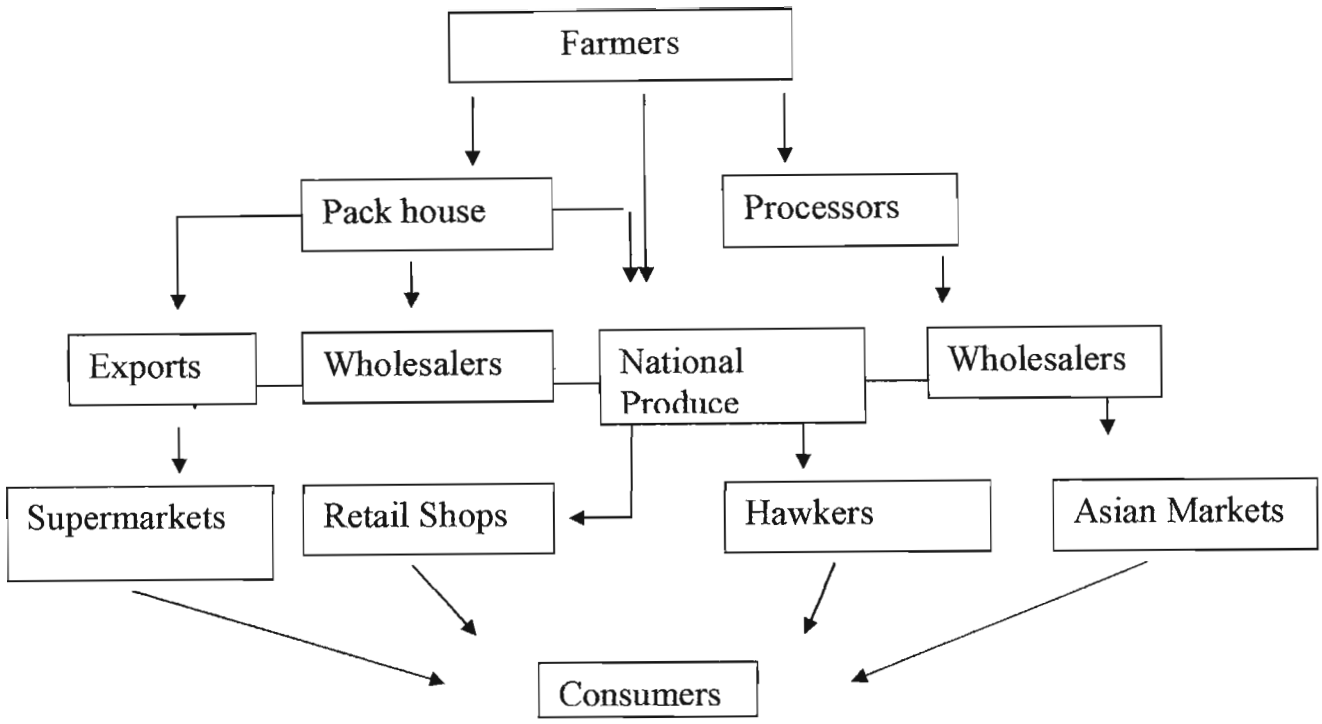

Figure 2.1 Marketing Channels for Vegetables (Communications: Cedara 2005)

2.9 The Marketing Survey

Farmers normally make the mistake of thinking that the marketing of products starts after harvesting. As stated in the DAE (2001), market survey analysis and plans should start before planting the crop. Questions to be asked will include:-

- What market outlets exist?
- Where are they situated?
- Which appear to be the most suitable?
- What alternative markets exist or can be developed?
- Who are the prospective buyers or consumers at the various outlets?
- Which crops do they want?
- How much of each product do they want?
- When do they want them?
- Is sophisticated grading necessary?
- What quality grades will satisfy the requirements of each outlet?

- How should the produce be packed or presented for each market?
- How easily can the grower meet the requirements of the various outlets?
- What is the expected cost of meeting the requirements and servicing the respective outlets?
- Should the products be advertised, and if so, how and where?

"The answers to these questions will largely determine the type of crop to be grown, when they should be planted, what area should be devoted to the planting of each crop, the time interval between planting of a specific crop and even which cultivar will best meet the specific requirements" (DAE 2001). As farmers align their production to the above marketing activities, they will eventually supply a final product totally acceptable to the prospective purchasers and consumers (DAE 2001). Marketing outlets differ in their specifications. It is therefore advisable to identify different markets and send the best grades to top markets. The other grades can be sent to other markets (DAE, 2001). A number of markets are available such as:

	Advantages	**Disadvantages**
Direct sales to hawkers or consumers on the farm	Readily available	Unreliable
Farm stalls	Ready available	Unreliable
Direct sales to wholesalers, consumer groups, or individual consumers from a market place.	Reliable	Not easily untenable
Small municipal markets or farmers' markets	Reliable	Not easily untenable
Export of raw products	Global exposure	High standards
Processing and adding value to products	Extends shelf life	Lack of centres

"Direct sales to hawkers" is an easy and readily available market for farmers. It is one of the livelihood strategies that farmers commonly employ for income generation but the hawkers are not yet well organized and therefore, one cannot expect a sustainable market which will contribute to poverty alleviation. A local market is often not reliable, based on the fact that

local farmers, farming with amadumbe, cannot provide a sustainable market for amadumbe themselves but will have to pursue a market that they can supply.

Points to consider in choosing sales outlets (DAE 2001):

Proximity:	Saves the farmers from paying large amounts of money to cover the cost of transportation while distributing the product.
Season price:	Some products are seasonal, and when they are out of season they can be highly priced, but riskier to produce. Farmers need this knowledge in order to decide whether they will produce in or out of season.
Size:	The size of the product has to be known by the farmers, so that they can produce the relevant size, as required by the consumer.
Marketing commission:	These are the fees that need to be paid by the farmers for the marketing of their products. When such charges are made, farmers should understand what is going on.
Types of roads:	Bad roads especially in rural areas will contribute to a poor quality product as they could be bruised. It is therefore imperative to avoid such bruises.
Agent's fee:	There are individuals that will operate between the farmers and the consumers. They have their own charges and farmers have to be aware of such charges and benefits.
Packaging required:	According to DAE (2001) products should neither be over-filled nor under-filled. A certain pattern should be followed when packing. Mesh pockets are also recommended for root crops such as amadumbe (ref 2.3.5).
Possible delays:	Possible delays have to be avoided at all cost in order for the farmers to remain reliable.
Consumer preference:	It is very important that the farmers should know what the consumer prefer even before the production phase begins (DAE 2004).
Payment:	Payment needs to be discussed between the parties concerned whether it will be cash, cheque or credit. Farmers will also probably need to be taught about this.

Specifications:	Specifications are a very important aspect of the marketing research. They help the farmers try to meet the demands or requirements of the market and may alter their production techniques.
Other requirements:	Other requirements would involve meetings between the two parties involved which in this case are the farmers and the shops or processing centres to discuss the deals, challenges and way forward.
Contact person:	This is a very important figure when deals are signed as he will be the link between the two parties both when things are good and when things go wrong.

The marketing stage is the initial stage that should be considered by the farmers, before the production phase so that when they produce, they will know exactly what is required by the market

2.10 Sustainable Livelihoods Analysis

Although the sustainable livelihoods analysis methodology will be used in three villages found at KwaMbonambi and three from Sokhulu, the study will not concentrate on this approach because the main objective of the study is to explore marketing opportunities on indigenous foods. According to Albu and Scott (2001) a sustainable livelihood analysis is a tool that was developed by the International Technology Development Group (ITDG) to help development practitioners understand livelihoods involving micro/small-scale enterprise (MSE). (Refer to Figure 1.1). Ndokweni (2002) further describes SLA as, "a tool that helps people understand factors and issues that affect people's lives and as a tool for use in planning and management".

The sustainable livelihoods framework will therefore be used to asses the presence of resources according to the five asset categories of the framework, which are human, natural, financial, social and physical capitals. Through the sustainable livelihoods framework, this study will also assess the different government institutions and non-governmental organizations (NGO's) operating in the Mbonambi municipality, and how their policies influence access to the resources for the community (Ndokweni 2002). The study will then

investigate how they deal with seasonality and livelihood strategies they have developed to achieve their dreams or goals.

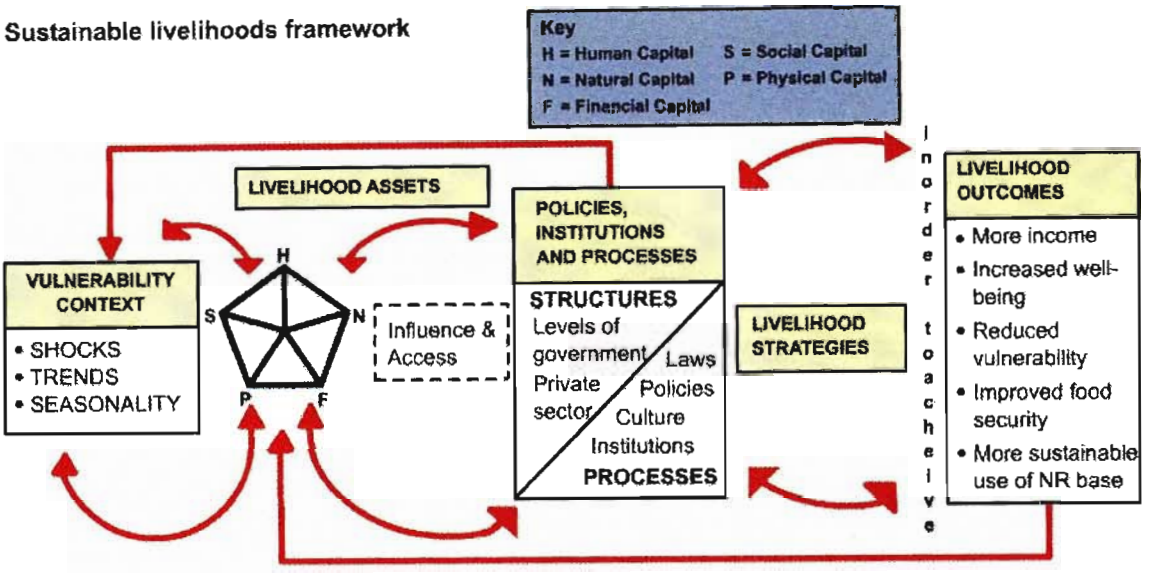

Figure 2.2 Sustainable livelihoods framework.
Source: http://www.livelihoods.org/info/dlg/sect1/0/0_01.htm

2.11 Government policies relevant to the study

Government policies can either have a positive or a negative impact on the production of indigenous food such as amadumbe. These will include policies on quality seed control, protection of wetland areas and the support for farming practices by the Department of Agriculture and Environmental Affairs.

In order to prevent indigenous seeds including amadumbe from becoming extinct, the National Department of Agriculture has formulated a policy to address this issue. According to the plant protection Act No. 53 of 1976 a programme for seed quality control has been established (Plant Genetic Resources Policy). The main purpose of this programme is to ensure the physical and physiological quality of locally produced seed. Seeds produced have to meet determined international norms and standards before being traded or propagated by farmers. Implementation of the policy involved the collection of all indigenous seeds throughout South Africa for preservation in the experiment station of the Department of Agriculture at national level found in Pretoria. The study area was also involved in this exercise which means that it can be assured of sustainability of its seeds (NDA, 2004).

The production of amadumbe is very popular in wetland areas. However, according to the policy on protection of natural resources in agriculture Act No 43 of 1983, wetland areas have to be protected. It states that areas within 10m of rivers, streams and wetland areas must not be disturbed. The policy also states that planting can only be done if permission from the Department of Agriculture has been received and an assessment has been conducted to show that such activities will not disturb the wetland area (Policy on Protection of Natural Resources, Act no 43 of 1983). In his speech, Mr S. Mtshali (Environmental officer for the Department of Agriculture and Environmental Affairs) quoted this policy, on the 2nd of March 2005 at a national Wetlands Day held at KwaMbonambi. Speeches that followed revealed ill-feelings, since people were extensively using wetland areas for the production of amadumbe. For the purpose of this study further knowledge was acquired concerning this policy and it transpired that according to this policy, activities undertaken within the protected areas prior to 1983 were not affected by the policy, as long as those activities did not disturb the wetland areas. On the 25 April 2005 a meeting was called at KwaMbonambi to discuss the policy and clarify the issue.

In terms of sections 126 (4) of the act (DAE 1996) of the South African Parliament, it prevails over a provincial law as provided for in sub-section (3), only if it applies uniformly in all parts of the Republic. Based on this act, it was recommended by the National government Public Service Commission, and accepted by the KwaZulu-Natal Government and all Ministers of Agriculture that the following functions be devolved to provincial government: rendering support to farmers, and agricultural communities, with regard to extension services, training, financing, marketing, infrastructure and irrigation. However, due to transformation of policies under the government of the day, a new policy on farm support programme, is replacing the above–mentioned policy. Nevertheless it is worth mentioning the outgoing policies since they still exist in practice. The new policy on farmer support programmes involves three policies namely:-

2.11.1 Marketing policy: KwaZulu-Natal.

The provision of infrastructure to facilitate marketing for small – scale farmers falls under this policy. This is funding that is available from the Department of Agriculture which can also be accessed by the amadumbe farmers. After the formation of the cooperative, it would be easier to pursue such opportunities because registration is one of the requirements.

2.11.2 Home Economics and Home Industries Policy

The provision of infrastructure for facilitation, marketing, and storage of home industry products is provided for by this policy. This funding would be suitable for processing projects. Processing projects would also have to register as cooperatives in order to access this funding.

2.11.3 Policy on maintenance of infrastructure (Food Support Programme)

The main objective of the Food Support Programme (FSP) is to provide infrastructure equipment and agricultural resource inputs to the client base of the Department when working towards the achievement of the Departmental Strategic priorities (DAE 2004).

This study will therefore throw some light on the current policies that render opportunities which can be accessed by farmers especially amadumbe producing farmers. The two funding programmes available under the DAE (2004) are Food Security and Poverty Alleviation programme and Commercial and Emerging Sector funding programme. The food insecurity alleviation programme provides funds for farmers who produce crops or animals on a small scale for own consumption and then sell the rest. A flat rate grant of ninety-five percent is available with a five percent own contribution. This funding is given in two phases of five thousand rand each and it is reflected on the table below:-

Table 2.3 Government Grant for Food Security (DAE 2004)

95%	Flat rate Grant
5%	Own Contribution
R5 000	(Labour, equipment. etc)
R 5 000	Assistance 1st Phase (On Process Success) 2nd Phase

The Commercial and Emerging Sector funding programme is divided into two sections – community and individual funding. The former involves community projects with more than five people – as stated in the Development Project Policies (DAEA 2001). This policy states that for community gardens to be established, members should not be fewer than five and the area should be more than 0,25ha, have an established committee with a constitution. Funding for such projects is hundred percent for all activities as shown in table 2.4.

Table 2.4 Percentage Funding For Community Projects (DAEA 2004)

Projects	**%**
Investigative studies and preparation of business plans	100%
Shared bulk infrastructure	100%
Resource conservation works	100%
Social facilitation	100%
Farmer training and capacity building	100%
Infrastructure and start up inputs costs for individual beneficiary	100%

The last category involves projects run by individuals. Funding is also available for such projects but there is a contribution from the individual as opposed to communities, who receive a hundred percent grant. For a minimum grant of twenty thousand rand the individual contributes five thousand rand, and for a maximum grant of one hundred thousand rand the individual contributes four hundred thousand rand (DAEA: 2004). Further clarity is provided in table 2.5

Table 2.5 Funding For Individual Farmers (DAE 2004)

Own contribution R	Matching grant R	Proportion of total cost (%)	
		Own contribution	Grant
5 000	20 000	20	80
35 000	40 871	46	54
145 000	68 888	68	32
400 000	100 000	80	20

Furthermore, the FSP (Food support programme) appears to be the appropriate policy to address the poverty issue of KwaMbonambi and Sokhulu areas. Based on this act, amadumbe farmers can benefit from the Department of Agriculture in addressing the constraints that might hinder progress in the improvement of indigenous food production and processing. These policies would have a positive impact in the production of amadumbe if utilized profitably for the benefit of the farmers.

2.12 The United Nations Millennium Development Goals

Since the study will take place in an area badly affected by poverty and HIV/AIDS, it will have a great impact on some of the UN millennium development goals (MDGS). This is a pledge of 151 United Nations member states to meet eight goals by the year 2015 and address the needs of the worlds poorest (Annan 2005). The goals as set in 2002 were:

- To eradicate extreme poverty and hunger
- Identifying amadumbe as the source of income would have an impact in addressing in addressing this problem
- To activate universal primary education
- Introducing farmers to commercial farming would activate educational programmes in order for them to cope with the commercial world.
- To promote gender equality and empower women
- This goal would also be addressed indirectly since women are in the majority in this study
- To reduce child mortality and improve maternal health

- The nutritional value of this crop would assist in improving health conditions of children and maternal health of women thus reduce mortality rate
- To combat HIV/AIDS, malaria and other diseases
- The nutritional value would also assist to boost the health of those infected by diseases such as HIV/AIDS, malaria and other diseases since amadumbe are not heavily processed
- To ensure environmental sustainability as the production of amadumbe does not violate any environmental laws
- To develop a global partnership, for development (Annan 2005).

As the small scale farmers grow, they would compete at global level in future.
Using the methodology of this study should empower small scale amadumbe farmers to better their livelihoods and contribute towards fulfilling the MDGs, specifically the first one: to eradicate extreme poverty and hunger (Annan 2005).

2.13 Summary

During the literature review, a number of aspects relevant to the study were identified. The marketing survey was considered the most important, even before the farmers could attempt producing and marketing amadumbe. After establishing the locality of the potential outlets with their consumers, which in this case would be the formal retail shops and the processing centres, the farmers could embark on matching the production levels with the demands of the market. Factors relating to the outlets and considered important from the literature included cool harvesting, hygiene and careful handling, trimming and cleaning, grading (sizes), packaging and transport (See section 2.3).

Since the small scale farmers had never been exposed to commercial marketing, a number of issues would need to be considered when it came to marketing amadumbe. In order to maintain good quality, harvesting has to be rapid and hot conditions should be avoided. Amadumbe should be kept under cool conditions to keep them fresh. They need to be washed, dried and packed preferably in crates to allow air circulation and prevent mould and rotting. Overfilling and under filling could lead to disqualification. The transported load

needs to be tied down to avoid shifting. High speed on gravel road will endanger the product as it needs to be handled with care. Grading can be done by choosing the best as grade 1, those with minor defects as grade 2 and those with the most defects as grade 3.

Channels suitable for amadumbe and relevant to the farmers could be as follows (See Section 2.8):

Farmers--------Hawkers----------Consumers

Farmers--------Formal retail shops----------Consumers

Farmers--------Agents -------- Formal retail shops----------Consumers

Farmers--------Processing centres----------Formal retail shops----------Consumers.

Amadumbe could therefore also be channelled from the farmers to processing centres, from the processing centre to the formal retail shops and finally to the consumers or straight from the processing centres to the consumers. However, the requirements for the amadumbe were apparently good quality, appropriate quantity and reliable delivery.

In order to meet these criteria, small scale farmers may also need to adapt their farming to produce the required products. The appropriate cultivars would need to be planted, the expansion of land issues dealt with, techniques of planting and harvesting in order to expand the production seasons learnt (See Section 2.9).

At the end of the study, amadumbe will be used as the source of income. The income realized will ensure that there is food security and thus poverty will be alleviated. Most concerns of the Millennium Goals will also be realized since their main objective is to address extreme poverty.

Previously disadvantaged communities could also benefit from relevant government policies such as the marketing policy and the 100% funding available from the Department of Agriculture, to meet the increased requirements of amadumbe from formal retail shops and processing centres. Amadumbe would then be used to generate income at little or no additional cost (See Section 2.11).

CHAPTER 3: DESCRIPTION OF THE STUDY AREA

3.1 Geographic situation

Mbonambi Municipality is composed of three tribal wards namely, Sokhulu, KwaMbonambi and Mhlana. It is between Mhlathuze Municipality to the South and the White Umfolozi River to the North. In the East lies the Indian Ocean, and to the West, Obizo Tribal Wards (Mbonambi et al IDP 2004). However the study concentrates on two sub-wards which are well known for the production of Amadumbe. The two sub- wards are Sokhulu and Mbonambi and are adjacent to each other. They are located between uMhlathuze Municipality in the South and Maphelane Lake to the North, the Indian Ocean in the East and the N2 National road in the West (Mbonambi et al IDP 2004).

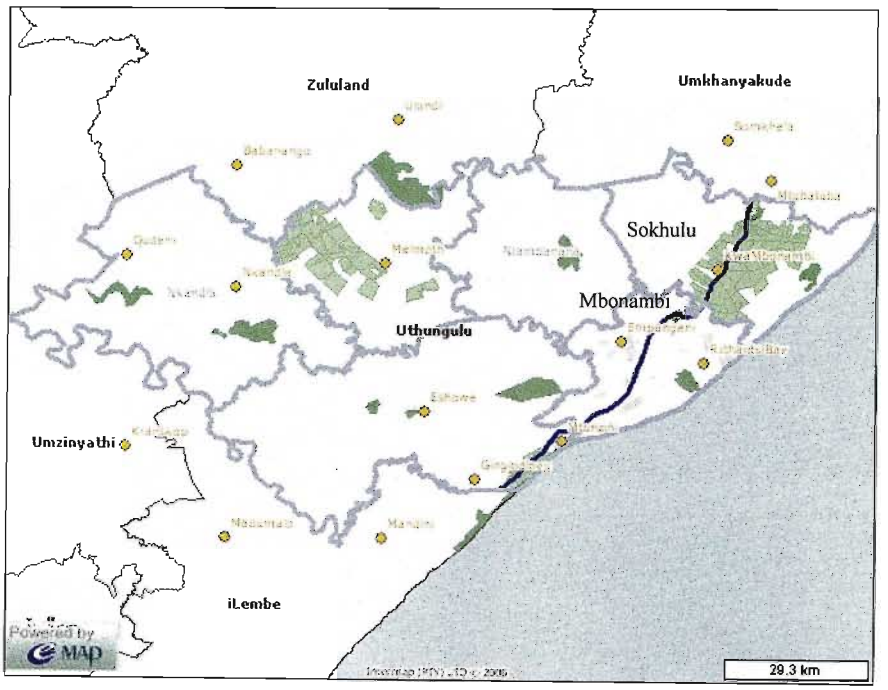

Figure 3.1 Map of Mbonambi Municipality (Stats SA 2001a)

3.2 Climatic conditions at Mbonambi Municipality

The KwaMbonambi and Sokhulu areas experience approximately 800 to 1400 mm of summer rainfall. Winter rainfall, about forty percent of the total rainfall may also be experienced (Mbonambi et al IDP 2004). Sokhulu and Mbonambi also have hot summers and mild winters. Surface water is available from the big rivers, Mzingazi and Nhlabane and other small rivers. Mhlathuze water is the bulk supplier of water for Empangeni, Richards Bay and Mbonambi towns as well as parts of Mbonambi and Sokhulu. Water is found within walking distance of many town households and is provided through a Free Basic Water system (FBW). However most of the poor people in Sokhulu and Mbonambi areas do not have clean potable water for human consumption. Local people use boreholes and water from streams which result in outbreaks of cholera at times. Sokhulu and Mbonambi areas are also characterised by wetland areas which makes them suitable for the production of amadumbe (Mbonambi et al IDP 2004).

3.3 Energy Supply in Mbonambi and Sokhulu

Eskom is the main supplier of electricity in the Mbonambi municipality. According to the (Mbonambi et al IDP 2004) only thirty two percent of households of the Mbonambi municipality have access to electricity. It is also indicated that sixty two percent of the total households within the municipal area use candles to produce light while the remaining households use a variety of lesser fuels (Mbonambi et al IDP 2004). KwaMbonambi and Sokhulu areas fall below the average electricity supply statistics. The layout of tribal authority areas is another contributory factor which makes it difficult to install electricity. Households are far apart and more electric poles and cabling would be needed to reach adjacent households, making installation expensive. Leaders also have mixed feelings about allowing electricity in their areas for fear of endangering the lives of their livestock as they have a belief that electric light gets through the eyes of the livestock and shocks them and that eventually leads to death.

3.4 Road Networks in Mbonambi and Sokhulu

The KwaMbonanbi and Sokhulu areas have good main road networks which connect them to the national N2 road. This is the road that connects KwaZulu-Natal with Mpumalanga and

Gauteng providing a good opportunity for the distribution of amadumbe. These tribal authorities are less than 20 km away from Empangeni and Richards Bay. Because of the existence of the large company, Richards Bay Minerals (RBM), Mbonambi has the advantage of tarred roads leading to RBM. Towards Sokhulu the road network is poor and very sandy (Mbonambi et al IDP 2004).

3.5 Demographic and Socio Economic Profiles

The area under study is densely populated, especially KwaMbonambi which is close to Richards Bay. The total population at Mbonambi Municipality was 106 902 (Stats SA 2001). The average household size in the whole municipality was 6.85 people. This is relatively high for rural areas and it is even higher in wards one, three, five and six found in KwaMbonambi and Sokhulu due to their close proximity to Richards Bay which offers opportunities for employment (Stats SA 2001). Because of this close proximity to town, kwaMbonambi reflects a more urbanized character than Sokhulu. Due to the migration of men to bigger cities in search of employment, the female population at Mbonambi Municipality remains higher at 53.3 percent than that for males (48.7%) (Mbonambi et al IDP 2004). Females tend to be unemployed and their role is to take care of children, livestock, land and houses. This is a very difficult role to play when 77.5 percent of the population has no individual monthly income (Stats SA 2001). For this reason the majority of females resort to farming for additional livelihood support specifically at Sokhulu. These women still employ traditional methods of ploughing. Fertilizer is not used in this area because the land is naturally very fertile. The opportunity of registering as producers of organically grown products could exist if markets could be developed. Only seven percent of the population receives a monthly income of more than R1500 mostly from employment opportunities created by RBM, the mining company operating within KwaMbonambi Tribal Ward (Stats SA 2001).

3.6 Agricultural activities in the Mbonambi municipality

As mentioned earlier, the two wards KwaMbonambi and Sokhulu form part of the Mbonambi Municipal area and agricultural activity can be divided into two sectors, commercial agriculture and subsistence agriculture. The following illustration figure 3.2 shows the different types of agricultural producers operating in this area. Explanation of figure 3.2 follows in the next five subsections.

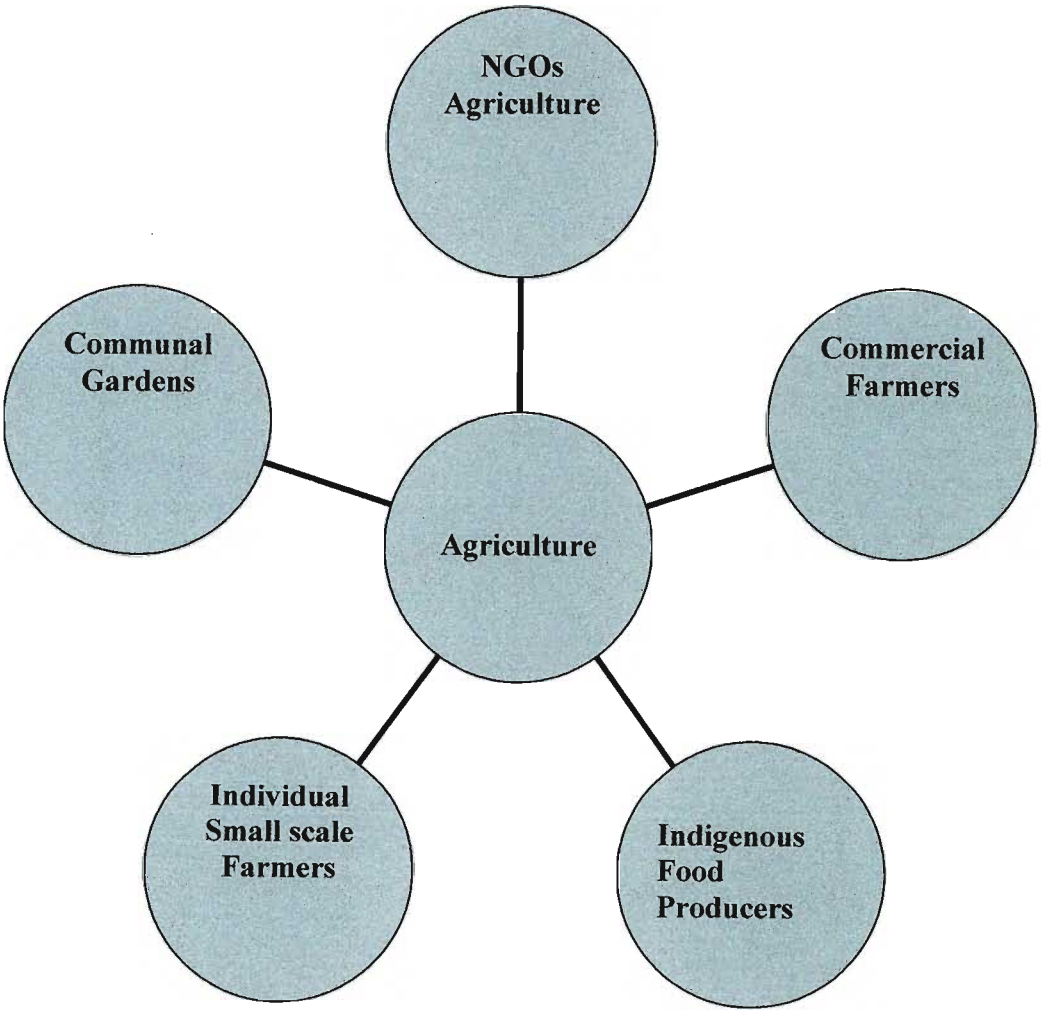

Figure 3.2 Types of agriculture in Mbonambi Municipality

3.6.1 NGOs and agriculture in the Mbonambi Municipality

The large timber organizations operating at KwaMbonanbi and Sokhulu are Mondi, Sappi and Siyaqhubeka. Large plantations cover the area such that it is almost impossible to notice residential areas when travelling on the roads. Local communities benefit from job opportunities created by these timber producers. They also have processing plants where planks are produced and further job opportunities are created for local residents (Mbonambi et al IDP, 04/05). In addition, Mondi has a paper producing plant in Richards Bay which employs still more people from Mbonambi and Sokhulu areas (Mbonambi et al IDP 04/05).

3.6.2 Commercial farmers in the KwaMbonambi areas

More commercial farmers are found in Sokhulu than in Mbonambi. These are mostly white farmers who concentrate on sugar-cane and banana production. The sugar-cane is sent to the Illovo Mill at Mtubatuba for processing. Bananas are sent to neighbouring towns for marketing. Some of the commercial farmers also own timber plantations and offer more job opportunities for local communities. However they do not depend on the services of the local agricultural officer. Commercial farmers are not engaged in the production of amadumbe.

3.6.3 Indigenous food production

Sokhulu when compared with Mbonambi is also the better producer of indigenous food such as sweet potatoes and amadumbe. Due to high fertile soils, production of amadumbe and sweet potatoes is done without the use of fertilizers. Amadumbe are mainly used for local human consumption. The corms are boiled with skins, cooled, skinned and eaten cold. They form part of the staple food for the community of Mbonambi and Sokhulu. They are also either sold to local hawkers or transported to the nearest towns, to hawkers that sell them either cooked or raw. Although amadumbe could be transported to the nearest towns, farmers did not have access to the commercial market for their produce since there was no link to develop marketing opportunities. There were no structures such as an amadumbe cooperative in place to be used in exploring more marketing opportunities other than the hawkers who are not part of this study since they are not well structured and cannot be trusted for providing a sustainable market.

3.6.4 Individual small scale farmers

Some people prefer individual farming because of the smaller areas of land they possess. They only produce for their own human consumption and they are not registered which makes it difficult to engage in business. This is one disadvantage which prevents such farmers from accessing funds or pursuing marketing opportunities. The government promotes the formation of cooperatives and making funds available for such structures. Although funding for individual farmers is available in principle from the Department of Agriculture and Environment Affairs, it has never been utilized in this district (DAE 2004). Amongst these individual farmers are amadumbe producing farmers. The formation of co-operatives and the production of commodity crops (crops in great demand) such as amadumbe would be an alternative for these farmers. The formation of co-operatives would also help them to produce for the market rather than to produce just for their own consumption which does not help to boost income (personal observation).

3.6.5 Communal gardens in KwaMbonambi and Sokhulu

Vegetable production is the main activity for the people of KwaMbonambi and Sokhulu especially those of a lower income class (IDP 04/05). Vegetable production is carried out in areas of about 2 to 10 hectares of land. Different kinds of vegetables such as cabbages, spinach, green pepper, potatoes, carrots, peas, green pea beans, tomatoes, onions, beetroot, sweet potatoes and amadumbe are produced in these areas. These communities producing vegetables communally are also organized into clubs of about 15 to 40 people. They divide the cultivated area into small plots which they then own and cultivate individually. These are managed as farmer's associations. There is one such farmer's association at Sokhulu and another one at Mbonambi. These farmer's associations also report to the Community Development Committees (CDC) of KwaMbonambi and Sokhulu.

Figure 3.3 Communal gardens with banana and amadumbe at Sokhulu

Figure 3.4 Communal gardens with banana and amadumbe at KwaMbonambi

Farmers also use traditional ways of storing the amadumbe seeds for the following season, whereby they dig a hole about one metre deep and put in the seeds together until such time when they are needed. After two or three month's small shoots would show up in clusters. When planting time came, the clusters would be separated and planted individually (Mzobe 2007).

The processing of amadumbe only took place at the processing centre called Isintu found at Esikhawini just south of Richards Bay. The products processed at the centre were amadumbe chips made with amadumbe cut into long strips, while amadumbe crisps were round in shape. They were available in three different flavours, Chutney, Mexican Chilli, and Salt and Vinegar (Moroka 2004).

These rural areas are ideal for the cultivation of amadumbe and have great potential for expansion should commercialisation be established.

The next chapter will present the methodologies used in this study.

CHAPTER 4: METHODOLOGY

4.1 Research Design

This chapter provides the methodology of this study carried out in the KwaMbonambi municipality under UThungulu District Municipality, Northern KwaZulu-Natal. Participatory action research was used, defined by De Vos (2000) as a research process whereby people under study in partnership with the researchers are empowered to actively participate in addressing their own social problems. This is done by improving their existing knowledge and cognitive, social and behavioural skills as recommended by Bhana (2001) and Archer and Cottingham (1997). Thus resources become optimally used, social and economic rights are achieved, their quality of life and social functioning are improved and self reliance is created. Based on this definition, this research is relevant to this study because the people of Mbonambi Municipality worked in partnership with the researchers and so it was not a top down approach. Tools like the transect walk encouraged collective participation in identifying their problems. A Force Field Analysis and a Sustainable Analysis were the tools used to prioritize and address the problems and as a result this would eventually improve their quality of life and self reliance would finally be achieved after their introduction to the commercial market

The research sample was taken from Mbonambi and Sokhulu areas, along the wetland area near the sea, where the soil is suitable for the production of amadumbe. The main objective of the study was to explore marketing opportunities for traditional food products such as amadumbe in these areas as stated in the research problem which reads as follows: How could marketing opportunities for traditional crops such as amadumbe be pursued to generate income for amadumbe producing farmers of Mbonambi and Sokhulu wards under KwaMbonambi Municipality? For that reason a purposive sampling would be very suitable, selecting people who could provide specific knowledge.

Table 4.1 Overall Design of the research

Sample	Method	Sub-problem
Formal retail shops	Questionnaires and semi structured interviews	What are the requirements of formal retailers and their intermediaries for amadumbe with regard to variety, quantity and quality that they expect for their shops?
Processing Centres	Focus group Discussions	What are the requirements of the amadumbe processing centres with regard to the quantity and quality of amadumbe needed to produce the best products for their target market?
Amadumbe producing farmers of Mbonambi and Sokhulu with farmers associations	PRA: Transect Walk Sustainable Livelihoods analysis Force-field analysis	Given the current assets available, will the amadumbe farmers be able to meet the demands of the processing centres and formal shops based on present farming practices: the available varieties, quantity and quality of amadumbe in their fields? What changes would be required for them to be appropriate and reliable suppliers?

The research team comprised four staff members from KwaMbonambi and Umhlathuze Districts (Department of Agriculture and Environmental Affairs), who were directly involved with projects in the Mbonambi Municipality. Their role in this research was to assist the researcher in the collection of data and their involvement would benefit the Department of Agriculture in giving direction to the execution of their activities and also, through their new knowledge, benefit the communities that were not included in the research. Research proceedings were also discussed in the district staff meetings so that all the officers from KwaMbonambi and UMhlathuze municipalities could benefit as well.

The primary field research was carried out over a period of four months from October 2005 to January 2006 because this was the correct timing for amadumbe production as they were in season. Tools used for this study were questionnaires for formal retail shops; focus group discussions for food processors and for the amadumbe farmers and associations, PRA tools such as transect walks, sustainable livelihood, analysis force field analysis, observations and

workshops. These PRA tools were suggested as appropriate for rural situations by Woodhill and Robins (1998). See table 4.1.

4.2 Population and Sample Selection

All eight formal retail shops selling amadumbe in the two areas were selected for the study. The managers on duty were those who participated in the semi structured interviews. Two processing centres participated in the study, while those committee members present on the day of the group discussions provided the necessary information. A purposive sampling was used to select small scale farmers to be researched. A purposive sampling is when the researcher uses his own discretion to select a group of people which is composed of clients with the most characteristics representative of the population (Strydom & De Vos 2000). Terre Blanche & Durrheim (2002) call it a judgmental sampling whereby the principle employed to select a sample is by the use of expert judges in selecting with a specific purpose in mind. Respondents were purposively selected from Mbonambi area where the road network is better. These wards were Mzingazi (20), Nzalabantu (20), and Sabokwe (10) (a smaller sub-ward) to make a total of 50 respondents from Mbonambi tribal ward. They were chosen because they were part of the population that was actively involved in producing amadumbe. The other three wards selected from Sokhulu were Ehlanzeni (20), Amalalaphansi (20) and Amalalaphezulu (10), (a smaller ward) to make a total of 50 respondents who volunteered to participate. They formed convenience samples from each ward. The combined sample of farmers for the study was a total of 100 respondents.

4.3 Research tools

4.3.1 Questionnaires for retail shops

Questionnaires were the tools used to assess formal retail shops. A questionnaire is a collection of questions formulated to gather data from respondents of a particular area (Vogt 1993). They were delivered by hand to improve response rates and in order to save time. It was a relevant tool for the research as it would also provide the small scale farmers with proper specifications of amadumbe required by formal retail shops. Questionnaires were used for retail shops that stock amadumbe to gain insight into the supply lines for amadumbe. Managers were interviewed mainly because they were the ones with decision making powers concerning any deals in the retail shops. Questionnaires were drawn up for formal retail

shops found at Mbonambi, Richards Bay and Empangeni. Only amadumbe selling shops were approached. The questionnaires established whether or not retail shops were using local amadumbe producers as their suppliers. For those retail shops that used local amadumbe producers as their suppliers, the questionnaire invited suggestion of what processes could be improved, the quality and quantities of amadumbe and specifications regarding packaging required. For those that preferred external distributors, the questionnaire requested contact details, and reasons why they were preferred.

4.3.2 Focus group discussions

Focus group discussions were used for both processing centres that produced amadumbe chips, amadumbe crisps, mealie bread and imbuya relish (made from green leaves, onions, tomatoes and spices when amadumbe were not in season). De Vos et al (2000) describes focus group interviews as a purposive discussion of a specific topic taking place between eight to ten individuals with a similar backgrounds and a common interest. This was a relevant tool for the processing centre since they had something in common - processing amadumbe and the discussion was specifically directed to amadumbe. Focus group discussions were also used in the amadumbe processing centres to guide the research team in the discussions with members of the food processing centre. Informal observation was included. The meeting was attended by Mr S Mbuyazi (The manager), Miss V. Mguyo (marketing officer), Miss W. Mbuyazi, Miss Z. Thusi and Mr S. Mafuleka (Additional members). The focus group was composed of five staff members from both processing centres.

4.3.3 Transect walk

A transect walk was then used for small scale farmers in order to assess the available land and its suitability. According to Pound *et al* (1998) a transect walk is a systematic walk to explore local practices, researchers observe, ask questions and listen while farmers talk and describe their land, farms, how and why they do things. In the case of the study, the transect walk was undertaken by the research team, with farmers in each ward. The walk followed trenches in between the amadumbe plots. Maps were not drawn but photos were taken. Refer to figure 6.3.

Three transect walks in each area were undertaken by the research team, with representatives from the Mbonambi Farmers Association and Sokhulu Farmers Association, small scale farmers from each of the wards under study which were, Mzingazi (20), Nzalabantu (20),and Sabokwe (10) at KwaMbonambi, and Ehlanzeni (10), Amalalaphansi (20) and Amalalaphezulu (20) at Sokhulu. The associations comprised the small scale farmers and could not be counted separately. Amadumbe-producing farmers or small scale farmers in each sub-ward were interviewed to assess the capacity of farmers to supply retail shops and processing centres, with the quantities and quality of amadumbe demanded. An adapted sustainable livelihoods analysis was used to study the assets of the community of Mbonambi and Sokhulu, their livelihood strategies and how they would go about reaching their future dreams.

4.3.4 Sustainable Livelihoods

An adapted sustainable livelihoods analysis (SLA) was used to find more knowledge on how the people of Sokhulu and Mbonambi managed to survive. According to DFID (2004) a livelihoods analysis aims to improve the design and implementation of poverty reduction efforts by finding out about assets and livelihoods. An adapted sustainable livelihood framework was therefore used in this study to asses the potential for farmers of increasing their income; factors affecting their livelihoods; and the major problems encountered (after Albu and Scott 2001). Based on the framework, the following categories were addressed:

- Amadumbe farmers' strategies – their efforts to achieve livelihoods
- Livelihoods assets - depicted in the framework as five categories of resources, namely human, physical, natural, social and financial capital
- Livelihood outcomes were described to farmers as the desired standard and quantity needed to supply the market.
- The vulnerability context: These were factors affecting their livelihoods which they could or could not change, such as policies, institutions and processes as well as seasonality in the case of amadumbe production.

Members from each farmer's association were therefore divided into groups of about six members with one research team member to facilitate the discussion. A group selected one

person as a scribe and presenter from the group. Each team or group addressed one category from the above mentioned issues, separately. After the discussion of the small groups, they all combined and the presenters from each group addressed the combined group on what had been discussed by their respective teams (DFID 2004).

4.3.5 Force Field Analysis

For session two, the same groups were used for Force Field Analysis. A Force Field Analysis according to Skutch (1997) is a participatory tool used to identify complex problems and suggest solutions for those problems and seemed most appropriate for this study relating to potential change. Major problems affecting the people's livelihoods identified during the SLA, were then prioritized especially regarding their farming practices which was one of their major livelihood strategies. Flip charts were used to list activities that would be involved in reaching solutions for a problem that was ranked most important.

4.4 Feedback Workshop

Findings after data collection and analysis were presented by the research team to the Mbonambi and Sokhulu Farmers' Associations including individual amadumbe producing farmers from Sokhulu and KwaMbonambi. Results of the questionnaires from the retail shops and amadumbe processing centres with qualities and quantities of amadumbe required were discussed. Results of the sustainable livelihoods, force field analyses and transect walks were also reported, measuring the potential for amadumbe producing farmers against the requirements of the retail shops and amadumbe processing centres. Possible means on how to empower amadumbe producing farmers to meet the quantities demanded were also discussed.

4.5 Data Treatment and Analysis

The data collected from retail shops and amadumbe processing centres were used during the sustainable livelihood and force field analysis to establish the exact qualities and quantities of amadumbe required by retail shops and amadumbe processing centres. The data collected from the SLA and force field analysis were used to take action that would eventually empower amadumbe producing farmers to meet the required standards while giving the Department of Agriculture and other partners a clear vision on the needs of the communities.

All the data was analysed, looking for themes to clarify the situation as suggested by de Vos et al (2002).

Findings from the questionnaires and focus group discussions will be discussed in Chapter 5 and the sustainable livelihood, force field analysis and transect walk will be discussed in Chapter 6.

CHAPTER 5: RESULTS AND DISCUSSION

This chapter deals with findings from the two tools that were used to establish the quality, quantity and variety of amadumbe required by formal retail shops and processing centres. This chapter addresses the first and second sub-problems by investigating the requirements of the formal retail shops and their intermediaries and processing centres for amadumbe with regard to quality, quantity and variety.

5.1 Amadumbe requirements of formal retail shops and their intermediaries

This section will report on quality and quantity as well as variety of amadumbe required by formal retail shops and their intermediaries, and will describe the standards that needed to be met by amadumbe farmers.

5.1.1. Quality and quantity of amadumbe required

According to the findings, the formal retail shops preferred fully mature amadumbe which were free from soil, thoroughly washed and completely dry to avoid mould. They had to be firm and really look presentable. The farmers should deliver them in crates to preserve the freshness which would allow for a longer shelf life at the shop.

The pace of selling amadumbe was very slow at the shops, due to the fact that they were very expensive, the price being as high as R14.99/kg, which was caused by external supply sources; distributors from Durban and Stanger. At the same time hawkers on the pavement outside the shops provided fresher amadumbe at about R5.00 per Kg. As a result an order of about 50 tons of amadumbe lasted for about three months in each of the shops. At that point, amadumbe in the shop deteriorated, resulting in poor quality. For all eight formal retail shops, amadumbe requirement would be approximately 200 tons per month.

When questioned on the issue of stocking amadumbe that did not look fresh, the shop owners or manager's response was that, they had contracts with distributors from Durban and Stanger but the cost was very expensive because of the distance. Some of the managers did not know that amadumbe were produced locally and they even mentioned that they had never

been approached by amadumbe producers to make offers as mentioned earlier. During the discussions, it transpired that shop owners and managers would gladly accept offers from local producers as long as they would comply with their requirements as mentioned in section 5.1, and meeting these requirements would probably increase the quantities demanded by formal retail shops.

However distributors were also asked about the quantities of amadumbe required to supply all their contact shops in Zululand and the response was that they normally require about 200 tons a month. This was another option that could be followed by amadumbe producers if they encountered problems with formal retail shops but it also reflected the amount that would be required by all the shops combined.

5.1.2 Variety of amadumbe required

From observations and discussions with formal retail shops, it transpired that varieties of amadumbe required by formal retail shops were a mixture of small, medium and large amadumbe called the cocoyam (Khumalo 2006). The formal retail shops did not stock the extra large amadumbe which were as big as a pumpkin, and were only very popular in Northern KwaZulu–Natal, in areas like KwaNgwanase. They were not known to the formal retail shops in this area.

5.2 Responses from formal retail shops.

The study found that none of the eight retail shops interviewed at Mbonambi, Richards Bay and Empangeni used local producers as sources for their amadumbe. They used external suppliers like Maharaj from Stanger, Spar distributors from Durban, Pick'n Pay Distributors from Durban and Fruit and Veg from Durban. The result of acquiring their amadumbe from external producers was reflected in the high prices charged by retail shops on amadumbe per kg, as shown in Table 5.1. As a result of these high prices, customers did not buy many amadumbe and so they started to rot. That was the reason why retail shops had a problem answering the question on quantities required. The purchasing pace was very slow (the managers' term). Four of the shops indicated that they didn't even know that amadumbe were produced locally because they had never been approached by farmers to make an offer.

They were willing to consider offers from local producers if the produce samples submitted for inspection met their requirements. However it was stressed that when samples were accepted by retail shops, the produce would also be expected to be exactly like the accepted samples. Should it be different, it would be disqualified. It also transpired that the formal retail shops would only accept fresh, firm and clean amadumbe.

Table 5.1 Formal retail shops selling price of amadumbe

F/R shop	Town	Price/kg	Quantities (tons) per/month	Source
Spar	Mbonambi	R12,99	20	Spar Distributors
Spar	Central Park Empangeni	R14,99	20	Fruit and Veg City Maharaj Distributors
Spar	Richards Bay	R11,99	20	Spar Distributors
Spar	Hillstad (Empangeni)	R11,99	20	Spar Distributors
Pick'n Pay	Richards Bay	R11,99	25	Pick'n Pay Distributors
Pick n Pay	Empangeni	R11,99	25	Fruit and Veg Distributors
Fruit and Veg	Richards Bay	R11,99	35	Pick'n Pay Distributors Fruit and Veg Distributors
Fruit and Veg	Empangeni	R11,99	35	Fruit and Veg Distributors

At this stage, the shops were not concerned about the size or regularity of sizes of amadumbe. They also did not want to divulge the price that they paid for the raw goods, so that it is not known what price farmers could expect for their amadumbe produce. However, Embo organic farmers earned R30.00 per 14 kg (approximately R2.00 per Kg) which was equivalent to one paraffin tin for their amadumbe when selling to their pack house for Woolworths.

Figure 5.1 Display of Amadumbe at Spar

Figure 5.1 shows amadumbe displayed at a retail outlet, which is evidence that such formal retailers stock amadumbe and that there is also a demand for this product. It is the purpose of this study to establish whether such outlets are accessible to local amadumbe producers from KwaMbonambi and Sokhulu and also explore the possibility of producers being able to meet the greater demand for amadumbe. Possible outlets (formal retail shops) were Spar, Pick n' Pay and Fruit and Veg, since they indicated that they could accept samples from local amadumbe farmers and discuss possibilities of getting into agreement with amadumbe farmers if the farmer's samples could meet the formal retail shops' delivery specifications

Based on their good nutritional value (as stated in chapter 2.3), and since they are not heavily processed, fresh amadumbe in formal outlets would attract consumers from KwaMbonambi and Sokhulu who also use them as their staple food and would be more inclined to associate themselves with this product.

5.3 Amadumbe requirements from the processing centres

Sub-problem two concerns the amadumbe requirements of the two food processing centres at Esikhawini and Stanger. The requirements were determined relating to quality, quantity and variety.

5.3.1 Isintu Food Enterprise suppliers

Although the Isintu Food Enterprise at Esikhawini received amadumbe from Sokhulu, they did not receive the produce directly from producers. There was a private agent who purchased it from the producers. He further sold them to a secondary agent with price mark-up who finally sold them to the processing centres with a further mark-up. The final price/kg was R13.99 which made it very hard for the processing centre to make a profit. It was also very difficult for the processing centre to demand that their requirements on quality, quantity and variety of amadumbe were met, from the secondary agent who did not produce amadumbe. It was imperative that the processing centres communicate directly with producers of amadumbe to keep the price low and ensure that they received good quality fresh products from the local producers of Sokhulu and KwaMbonambi.

The Stanger processing centre received their raw material from the local amadumbe producing farmers. These farmers were organized by the Department of Agriculture into co-operatives that were the official suppliers of amadumbe for the Stanger processing centre. Unfortunately due to internal disagreements, the processing centre was not operational until further notice. The same strategy of obtaining the raw materials direct from the farmers was also recommended for the Isintu Food Enterprise at Esikhawini.

5.3.2 Quality and quantity of amadumbe for processing centres

Both processing centres required 400 tons of amadumbe per month that were very clean and free from soil. They also had to be fully mature because otherwise their products, which were chips and crisps, would not come out perfectly. They needed to be washed and dried thoroughly to prevent mould forming while they were still in the store room before use. They also needed fresh and firm amadumbe which did not show any signs of shrinkage or a

dull colour. Both processing centres indicated similar qualities, since they produced the same products, which were amadumbe chips, amadumbe crisps, mealie bread and imbuya relish (made from green leaves, onions, tomatoes and spices) when amadumbe were out of season. The two processing centres were still in the initial stages of production which made it difficult to report stable quantities since they were still experimenting with products. However the manager's response at Stanger was that when they were well established they could need up to five tons per month, at advanced production stage. Given the quantities required by formal retail shops and processing centres, the local producers of amadumbe at Sokhulu and Mbonambi would need to be well prepared to take advantage of this marketing opportunity.

5.3.3 Varieties of amadumbe

The varieties well suited for the production of chips and crisps, according to the food processing centres, were the small and medium sizes. The large and extra large amadumbe were said to be unsuitable because they produced very long chips which were not the standard size. The extra large amadumbe produced mushy chips that could not be made dry and crispy. The direct link with producers would then assist the processing centres to state their specifications properly to the producers.

5.3.4 Seasonality of amadumbe

With regards to seasonality, the processing centres had other alternative products such as mealie-bread and imbuya relish which helped them cope with seasonality. This was particularly true at the processing centre at Esikhawini because the one at Stanger was still on hold. It was also realized that the problem of seasonality was disturbing the market. The potential existed for farmers to produce a harvest twice a year, which could lessen the problem of seasonality.

Therefore, the dominant outlet for amadumbe were the two processing centres, one at Esikhawini called Isintu Food processing centre and another one at Stanger called Ukudla kwezemvelo food processing centre..

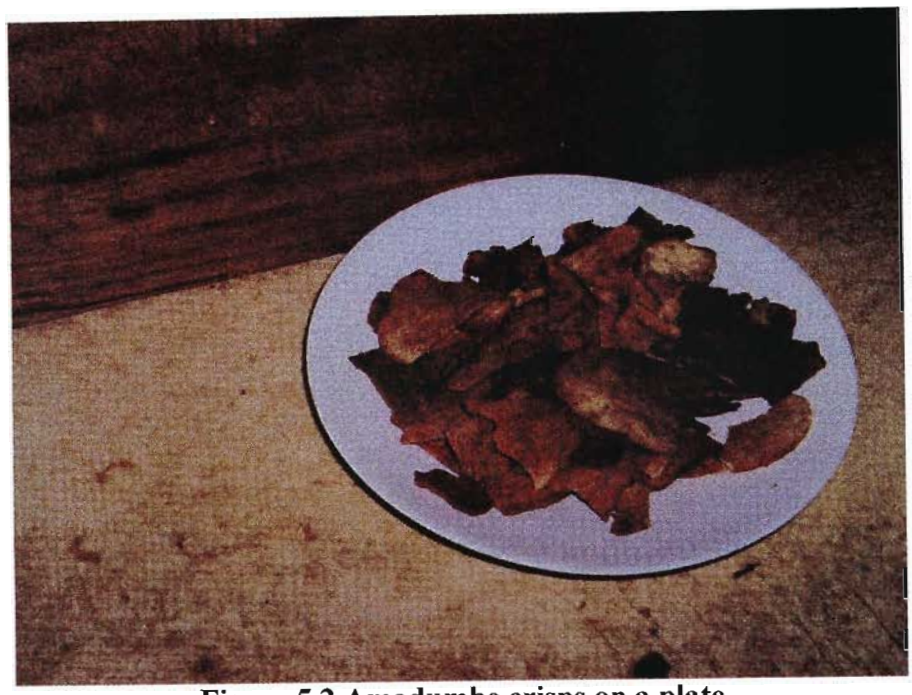

Figure 5.2 Amadumbe crisps on a plate

Figure 5.3 Amadumbe chips after processing, packaged for sale

5.4 Results from Focus Group Discussion with the processing centres

The focus group discussion guidelines were used for Isintu Food Enterprise, a processing centre at Esikhawini and Stanger processing centre found at KwaDukuza. These centres produced amadumbe chips, packed in foil lined, plastic packets. Both centres were rented by "community committee members" but in reality the CSIR was the initiator and still the formal owner of the one at Esikhawini while the centre at Stanger was owned by DAE. Through discussion it was found that there was an individual who supplied Esikhawini with amadumbe. He was not a farmer but obtained the amadumbe from a local agent. The local agent was the one who approached individual amadumbe farmers for purchasing and then sold to this private individual who further sold amadumbe to the Isintu processing centre. This resulted in an increased price which went as high as R13, 99/kg. The committees at Esikhawini did not know about the specific farming groups participating in this study.
At Stanger the KZN Department of Agriculture organized the amadumbe farmers into co-operatives. These cooperatives from KwaMaphumulo, which is close to the processing centre, then supplied the centre with amadumbe.

Delivery was therefore by the secondary agent at Esikhawini and by the Department of Agriculture at Stanger (KwaDukuza).

It was not easy for the processors from both centres to provide anticipated quantities since they were still at the early stages and experimenting with few tangible results. However they both supported the idea of acquiring their raw material from local producers in order to keep prices low. To compensate for the seasonality of amadumbe, Isintu Foods Enterprise resorted to using other crops like mealies (for mealie-bread) and amaranthus (for relish) while Stanger would also like to do the same when they resumed operation. Amadumbe could also be supplied by KwaMaphumulo farmers next to KwaDukuza.

5.5 Summary of market requirements

In a nutshell market requirements as specified by the processors could be summarized as follows:

- **Product:** Amadumbe as a product were expected to be fresh, firm, free from soil and fully matured and preferably harvested in the cool early mornings. No specific amadumbe variety was specified, but the processors preferred smaller ones.
- **Packaging:** Formal retail shops and processing centres required the amadumbe farmers to convey amadumbe in crates to allow air circulation and thus preserve freshness.
- **Place:** Locally produced amadumbe could be ideal for formal retail shops provided the amadumbe farmers met the market requirements of 200 tons per month for formal retail shops and their intermediaries and 400 tons per month for processing centres.
- **Pricing:** It transpired that amadumbe acquired from external distributors were very highly priced due to the cost of transportation from Stanger and Durban where these distributors came from. Locally produced amadumbe could contribute to lowering the price.
- **Promotion:** Formal retail shops were becoming aware that amadumbe were gaining popularity. It was also suggested that the amadumbe marketing forum would approach several shops with samples of amadumbe, to discuss deals and leave their contact details to coordinate marketing activities for all amadumbe growers of Mbonambi and Sokhulu
- **People:** It was appropriate for formal retail shops to access locally produced amadumbe since the local people were also the consumers of the products provided by the local shops. Local supply of raw amadumbe was expected to reduce the price to the processors if the necessary infrastructure could be linked. Processed amadumbe in formal outlets was expected to attract consumers from KwaMbonambi and Sokhulu and more widely.

CHAPTER 6: RESULTS FROM THE FARMERS' PERSPECTIVE

The main objective of this study was to explore marketing opportunities for amadumbe in the Mbonambi Municipality. Having acquired information about the requirements of formal retail shops and processing centres, it would be appropriate to proceed to the farmers for an in-depth investigation on the ability of farmers to meet the demands of the market. This was done by using three data collection techniques.

6.1 Transect walk

The results of the transect walks are described below in response to the need for information regarding the farming ability of farmers to meet any specific requirements for Amadumbe. The two areas were treated separately because their responses could differ based on the distance away from the neighbouring towns which could influence their farming practices.

6.1.1 Transect walks results at Sokhulu

The three transect walks at Sokhulu covered three sub wards or three villages, Amalalaphansi, Amalalaphezulu and Ehlanzeni. The research team which included Mrs M Nsele, Mrs D. Myeza, Mrs. J. Ntuli and Mrs. N.Mthethwa, together with key informants and amadumbe growers, two from each sub-ward namely: Mrs. Buthelezi Mrs B. Mdladla, Mrs S. Thabethe Mrs T. Masuku, Mrs P.Madela and Mrs L. Mthiyane, moved along trenches that were made to drain the water from the wetland area. Areas and farming systems were similar for all three areas and so the results are therefore presented together. Farmers paid to have the reeds cleared in order to plant amadumbe. Amadumbe were planted on individually owned plots of about one or two ha although the size of plots varied widely. Although they did have communally owned gardens because according to Mrs. Buthelezi (2006), chairperson of the Development committee, it was common practice for them, especially with indigenous crops, to own individual plots since communal farming was adopted late, when people were introduced to development. She further stated that water logging was found to be one of their major problems because of planting in the wetland areas, thus the need for trenches to drain the land especially in areas along the coastline. However the sandy

loam soils found in kwaMbonambi, and Sokhulu were more appropriate for the production of amadumbe as they drained better.

Farmers sold amadumbe locally or to hawkers who came to the fields with their own transport. For hawkers who did not have transport, small trucks (bakkies) were hired to deliver amadumbe to them in Empangeni and Richards Bay at least three times a week. Most of the amadumbe growers had never sold their amadumbe to formal retail shops. When asked the reason why they did not do so, they indicated that they had no one to help them, since the English language was also a barrier. They were also ignorant of the steps to be followed pursuing such marketing opportunities in the commercial world (Mdamba 2006).

Figure 6.1 Amadumbe plants at Mbonambi

6.1.2 Transect Walk Results at KwaMbonambi

Three transect walks were undertaken by the research team, representatives from the association and amadumbe growers from each of the three sub-wards in KwaMbonambi, namely Mzingazi, Nzalabantu and Sabokwe. Since amadumbe land was divided into plots, the transect walk was taken along the trenches in between the plots. From observation, the amadumbe area at Mzingazi was separated by sand dunes from the sea. These sand dunes

were covered with tree plantations. Amadumbe were actually grown in the wet land areas and the trenches were dug in order to drain the water from the plots. When asked as to why they preferred to plant amadumbe in wetland areas, farmers responded that amadumbe are water loving crops, but need to be drained so that they don't end up muddy. As the transect walks proceeded, clusters of young shoots of amadumbe could be noticed. When the research team inquired about these shoots, they were informed that those were seeds stored in the ground until planting time. That was the process which had kept amadumbe available from generation to generation. Some of amadumbe growers practiced intercropping. Intercropping is the introduction of a crop in between the lines of another crop that is planted in the area. Farmers used inter-cropping with amadumbe and banana or pumpkins. The response to the questions regarding marketing of amadumbe was that they either sold to local people or to hawkers. The formal retail shops in neighbouring towns remained an untapped marketing opportunity. As far as transport was concerned, it transpired from the discussion that buyers usually come to the producers on foot if local or with their own transport, while farmers used hired transport to deliver orders for town hawkers who did not have their own transport.

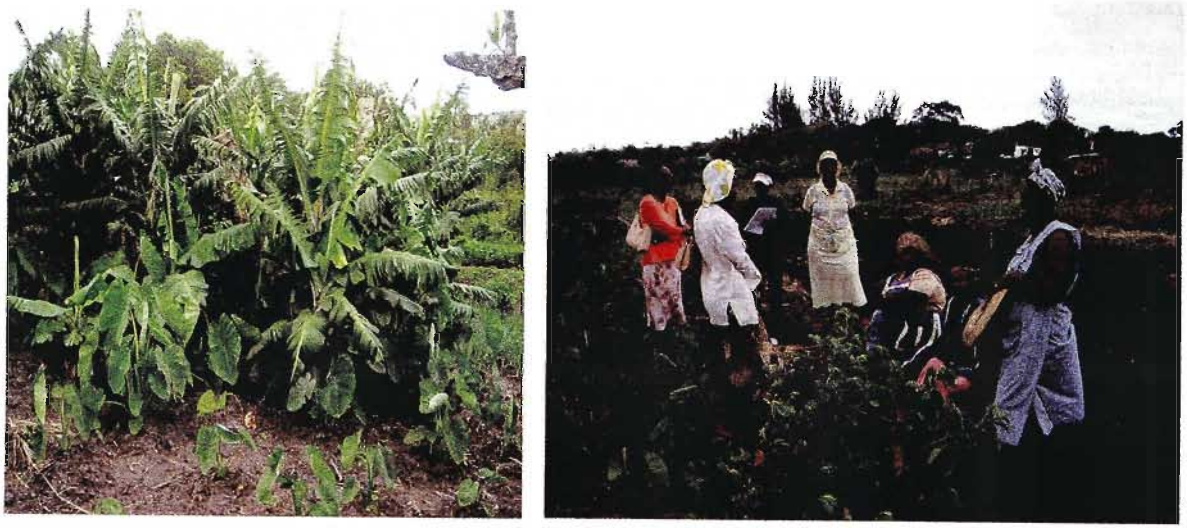

Figure 6.2 Inter cropping with Banana and amadumbe and discussion at Sokhulu

Figure 6.3 Transect walk along trenches at KwaMbonambi

During the transect walk, the research team identified forty five garden projects for vegetable production including amadumbe As the research team inquired about funders, the respondents indicated that they were funded by the Department of Agriculture, with fencing and agricultural inputs as well as poultry structures and nurseries. The Department of Health also provided the farmers with fencing and inputs. Although the Department of Social Welfare was involved with the provision of food parcels, some of the funds were directed to agricultural projects such as vegetable gardens. Mbonambi Municipality, RBM and UThungulu also provided fencing and agricultural inputs while Siyaqhubeka provided fencing and gates. It was apparent that more funding was going into the production phase than the marketing phase.

Table 6.1 reflects the farming practices in the two communities, and shows that there was very little variation between them. The main difference lay in the land ownership in that Mbonambi had communal ownership of farming land while Sokhulu had individual ownership. There was no material difference in farming practices. So the communities were not treated separately when reporting the results of the study.

Table 6.1 Farming practices in Mbonambi and Sokhulu villages

Farming practices	Mbonambi Village	Sokhulu Village
Seed production	Traditional way of generating amadumbe seedlings by burying them in the ground.	Traditional way of generating amadumbe seedlings by burying them in the ground.
Seedlings	Small shoots growing from buried seeds of amadumbe are used.	Small shoots growing from buried seeds of amadumbe are used.
Soil type	Sandy loamy soils.	Sandy loamy soils.
Division of plots	**Communally** owned gardens with 2x5m plots.	**Individually** owned plots measuring 5x20m each,
Harvesting	Early harvesting not so good but late harvesting producing fully matured amadumbe	Early harvesting not so good but late harvesting producing fully matured amadumbe
Selling process	Local community and hawkers.	Local community and hawkers.
Challenges	Lack of large pieces of land for mass production. Water logging in the wetland areas which are perfect for amadumbe production Less income realized from local communities and hawkers. Loss of active members from HIV/AID epidemic.	Lack of large pieces of land for mass production. Water logging in the wetland areas which are perfect for amadumbe production Less income realized from local communities and hawkers. Loss of active members from HIV/AID epidemic.

6.2 Sustainable livelihood Results

After a detailed explanation about the whole research study, people were requested to divide into three groups, each group with one research team member to facilitate the discussion, in both areas at different dates. This exercise was carried out at Mbonambi and Sokhulu separately. Both areas Mbonambi and Sokhulu came up with similar livelihood strategies. Both areas have many indigenous forests, forest plantations and sugar cane plantations that generate income for commercial farmers and local communities. Ten percent of the people owned the land and grew forest trees, sugar cane and banana plantations in both areas. Others worked for the neighbouring companies such as Richards Bay Minerals, mining with minerals at KwaMbonambi, Mondi, and Sappi and Siyaqhubeka timber growers from both KwaMbonambi and Sokhulu Still others survived through vegetable production, mainly for

Table 6.2 Results of the SLA for Mbonambi and Sokhulu

	Mbonambi	**Sokhulu**
Livelihood Strategies	Forest plantations Sugar cane plantations Banana plantations Working in private companies Sell vegetables Domestic work in Richards Bay Others live in poverty with no means of income	Forest plantations Sugar cane plantations Banana plantations Working in private companies Sell vegetables Others live in poverty with no means of income
Assets Human	Women with planting skills Few youth helping in garden projects	Women with planting skills More youth helping in garden projects
Physical	About 3 old tractors More Garden equipment Cattle, goats and fowls	About 2 old tractors Garden equipment Cattle, goats and fowls
Social	Individuals produce amadumbe Projects for other vegetables Individual farms for banana, forest and Sugar cane Dev. Committee	Projects produce amadumbe Individual farms for banana, forest and Sugar cane Dev. Committee
Natural	1 or 2 ha of land Plenty water underground Rivers, Dams , streams and boreholes	1 or 2 ha of land Plenty water underground Rivers, Dams , streams and boreholes
Financial	Joining and subscription fee Funds from DAO Municipality RBM Mondi, Sappi Siyaqhubeka, NPB for specific projects	Joining and subscription fee Funds from DAO Municipality RBM Mondi, Sappi Siyaqhubeka, NPB for specific projects
Dream	To supply the neighbouring towns with amadumbe and other vegetables	To supply the neighbouring towns with amadumbe and other vegetables
Problem	Transport	Transport

Amadumbe farmers all had one goal in common: to supply amadumbe to formal retail shops in nearby towns of Mbonambi, Richards Bay and Empangeni (probably influenced by the study itself). However the main challenge would be transport to reach the market. The

Amadumbe farmers all had one goal in common: to supply amadumbe to formal retail shops in nearby towns of Mbonambi, Richards Bay and Empangeni (probably influenced by the study itself). However the main challenge would be transport to reach the market. The expansion of land was not regarded as a major problem. They felt that there was more than enough produced already because of the lack of demand for amadumbe resulting from lack of marketing opportunities. Farmers would have to visit the formal retail shops with samples of amadumbe to make offers. It was also discussed that if the formal retail shops could be supplied locally, the retail price of amadumbe could be more reasonable. The language issue would also be addressed since the whole process would be handled by the farmers' cooperative.

6.3 Result of the Force Field Analyses

The same group of 50 people participated in the force field analysis from each ward. During the discussion, problems obtained during the sustainable livelihood exercise were prioritized. Priority number one was the marketing of amadumbe to formal retail shops found in neighbouring towns. This may have been triggered by the study and data collection processes and this limited the type of responses that the farmers gave in this process. Because both groups of farmers produced similar outcomes, results reported here are from both groups combined.

The priorities and force field analysis were then addressed (See table 6.3). According to the force field analysis, the amadumbe growers were only selling amadumbe locally and to hawkers. These purchasers provided their own transport to collect their amadumbe. If the amadumbe growers from Sokhulu and Mbonambi were to pursue marketing opportunities with formal retail shops from Mbonambi, Richards Bay and Empangeni, then they would need transport. They also had to be organized, especially the growers from Sokhulu who were operating individually. They realized the need to form co-operatives so that they could conduct business with retail shops, as a legal entity. Associations specifically for amadumbe growers were also necessary for both areas KwaMbonambi and Sokhulu. The same associations would then be registered as cooperatives and be eligible for government support.

Table 6.3 Force field Analysis

0. The vision: To supply formal retail shops with amadumbe	
1. The main challenge: Transport in meeting the demand for products	
2a Present situation Supply local markets and hawkers	**2a Desired situation** Supply formal retail shops.
3. Constraining forces Operating separately as individual farmers. 1 or 2 hectares of land	**5 Driving forces** Getting organized as a co-operative Earn more money
4 Actions to reduce or eliminate Individual farming	**6 Actions to increase** Operating as co-operatives Approaching tribal authorities from more land
7a Steps towards influencing the forces Forming amadumbe growers association to help with marketing initiatives Organizing training with the Dept. of Agric on co operatives, commercial farming and business management.	
7b Additional Resources required A van, a tractor	

8 Steps	**How**	**Who and When**
Select a committee for amadumbe growers	Calling a meeting for elections	Researcher in December 2005
Negotiate for a vehicle with RBM	Talk to Mr Thabethe (RBM)	Committee in February 2006
Seek marketing opportunities with formal retail shops	Approach them with samples of amadumbe	Committee in February 2006
Training in the running of cooperatives and basic book keeping	A workshop for KwaMbonambi amadumbe farmers and Sokhulu amadumbe farmers respectively.	The marketing section from DAE organized by the researcher in May 2007
Training on commercial farming and business management	Organize a workshop at the Tribal courts of Mbonambi and Sokhulu	Marketing section from DAE organized by the researcher in June 2007.

A meeting was set for December 2005 for the elections. The committee would then approach the RBM development officer Mr J. Thabethe to negotiate about a vehicle in February 2006. The vehicle in question was already available for service by Sokhulu and Mbonambi community Development committees, having been donated by RBM. The driver was already available having been provided by RBM for both areas, serving in the development committee. The committee would then start approaching the formal retail shops with samples of amadumbe as from February 2006. Training with regard to business management and organic farming would need to be arranged. The researcher would facilitate the process.

6.4 **Mini-Experiment Results**

The main objective of the experiment was to assess the shelf life of amadumbe at room temperature, as the farmers were unsure as to the storage time for amadumbe. This was done by purchasing 2kg immediately after harvesting and placing them at room temperature while watching their behaviour from time to time. The following picture shows 2kg of amadumbe immediately after they had been purchased on the 20th of December 2005. The type of packaging used by hawkers is also shown in this picture. They remained at room temperature, under dark conditions, for five months.

On the fifth month, which was towards the end of April, four corms of amadumbe started sprouting. If they had been planted in the ground, small shoots would come out from these corms. Since they were only used for experimental purposes they were left at room temperature and they started to rot and have mould growing on them. So this mini-experiment produced results reflecting a possible shelf life of three months.

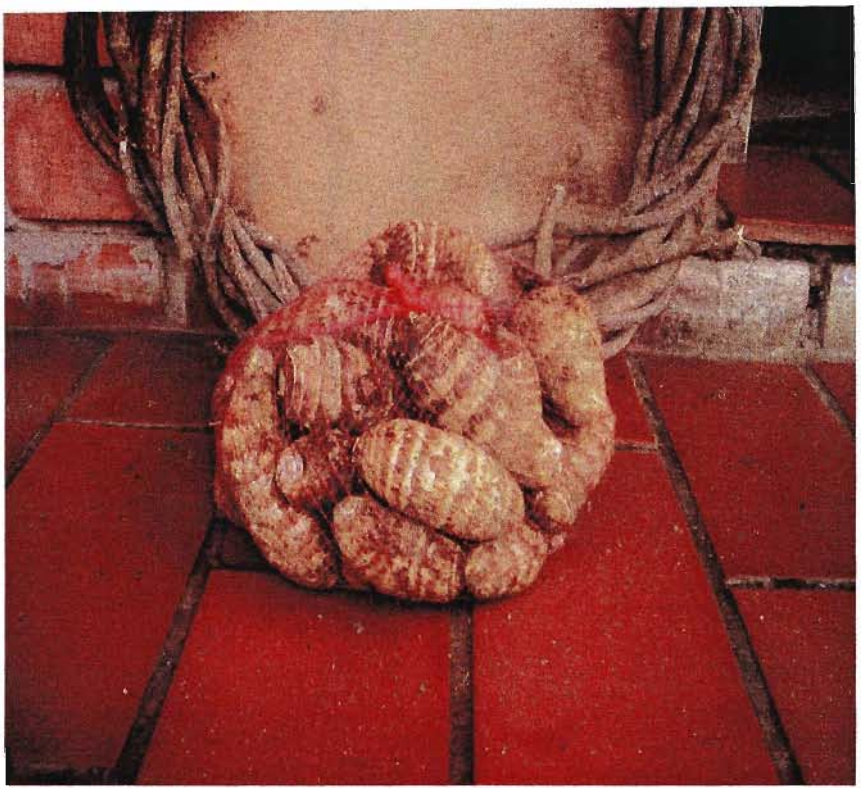

Figure 6.4 Two kg fresh amadumbe as sold by hawkers

Figure 6.5 Four corms starting to sprout after four months

Figure 6.6 Rotten amadumbe after five months

The experiment showed that the shelf life of amadumbe is three months. If that is the case then it would be possible for small scale farmers to produce amadumbe four times a year thus making amadumbe available throughout the year overlapping sowing time and harvesting time for a continuous supply.

The next chapter discusses the farmers' ability to produce twenty tons per ward, as required by the shops (refer 5.3.1). Prior to that, growers had been producing ten tons of amadumbe per hectare if one considered the fact that most of them had reported that they owned from one to two ha.

CHAPTER 7: THE ABILITY OF AMADUMBE FARMERS TO MEET THE DEMANDS OF THE MARKET.

After establishing the requirements of the formal retail shops and their intermediaries as well as food processing centres presented in chapter five, it was then appropriate to conduct a transect walk to assess the land suitability and availability before embarking on a sustainable livelihood and force-field analysis as reported in chapter six. Chapter seven will therefore integrate all the information acquired and respond to the hypothesis: Is it possible for farmers in KwaMbonambi and Sokhulu to supply the appropriate quality, quantity and variety of amadumbe to the markets of formal retail shops and processing centres and formal retail outlets?

7.1 Could the farmers be in a position to provide the quality of amadumbe required by formal retail shops and processing centres?

From the literature it was revealed that root crops need to be harvested when fully matured, then thoroughly washed and dried before packaging (Allerman 2001). According to the results of the formal retail shops, the managers indicated that they need fully matured amadumbe that are clean, fresh and free from soil. These were the requirements discussed during the Force Field Analysis and the response from the small scale farmers was that training would be needed on co operatives, commercial farming and business management. (Refer to table 6.3) According to the policies reported in Section 2.11.3 and Table 2.4 funds are also available from the Dept. of Agriculture for infrastructure (DAE 2001).A structure was needed to facilitate all activities concerned with amadumbe production and marketing. A forum of five members was therefore elected to co ordinate all the activities. (Refer Table 6.3). This development will empower the small scale farmers to cope with the requirements of the formal retail shops.

7.2 Could the farmers cope with producing the required quantities of amadumbe?

Based on responses from eight shops (see section 5.1), the retailers were not aware that amadumbe were produced locally. Although the rate of amadumbe sales was slow, the

reason was apparently the high price from external suppliers, according to table 5.1 and section 5.2 the quantity of amadumbe required by the shops was estimated at 200 tons per month. So if formal retail shops could obtain amadumbe locally, the price could be lower and more affordable for consumers and the demand was expected to rise. In the FFA, the respondents indicated that support from retail shops could be appreciated.

In table 6.1 it is indicated that farmers had only 1 or 2 hectares of land. However the tribal authority could be approached to acquire more land. So in order to cope with extra demands of amadumbe more land will be required. The tribal authority could than be approached to acquire more land as agreed upon by the respondents refer to table 6.3. There were vast areas of unoccupied land which either belonged to some of the farmers producing amadumbe or to the tribal authorities. Respondents were confident that arrangements could be made to extend amadumbe fields when needed because they also had vacant land that was not in use. It would therefore be easier to negotiate with other farmers before approaching the tribal authority. After acquiring more land, a need would also arise to increase labour.

As the farmers were prepared to use hired labour, job opportunities would be available and unemployment would also be addressed a problem which was highlighted in table 6.1. The government policies mentioned in chapter 2 highlighted other opportunities that could be accessed by the farmers for funds to be used in expanding the work of amadumbe production, especially the 100 percent funding for community projects (DAE, 2001). They also needed to revisit their selling strategies, which only focused on the local community and hawkers, and expand it to include formal retail shops from neighbouring towns. Formal marketing research was necessary before production of amadumbe started. The Department of Agriculture would then assist with training to equip the farmers with skills to meet the anticipated greater demand. It was possible for farmers in KwaMbonambi and Sokhulu to supply the appropriate quality, quantity and variety of amadumbe for formal retail shops and processing centres.

As KwaMbonambi farmers were already working in projects, it would be easier to register those projects as co-operatives and thus form legal entities.

The study also revealed that farmers in kwaMbonambi were already involved with transportation of amadumbe to Richards Bay and Empangeni for selling. Transport was costing them R100-00 per trip per load, and amadumbe were then sold to hawkers (as mentioned in section 6). A paraffin tin full of amadumbe was sold for R30-00 and weighed 14kg.

7.3 Varieties of amadumbe produced by farmers

According to section 5.3.2, there were three types of amadumbe that were identified by the formal retail shops during the interview, that they could have taken from the small scale farmers. These were the small, medium and large varieties. Chay Prove & Goebel (2004) called the small type of amadumbe *Colocasia Esculenta*. The medium type, they called the large *Colocasia Esculena*. It was also mentioned that these could grow as big as a pumpkin, but they are still called large *Colocasia Esculena*. The results of the transect walk rate in section 6.1.2 revealed that the small scale farmers of KwaMbonambi and Sokhulu produced four varieties of amadumbe, which the farmers categorized as small, medium and large and extra large. These are the amadumbe that were identified by the research team as the *Colocasia Esculenta* (Chay Prove & Goebel 2004). So the small scale farmers were in a position to supply the market with suitable amadumbe.

7.4 How could the farmers cope with seasonality?

The literature did not say anything about seasonality of amadumbe. An experiment was therefore undertaken to assess the shelf life of amadumbe (refer to section 6.4). According to the farmers, amadumbe were produced in summer just because there was no pressure and they were only used for household consumption. Based on the experiment results in section 6.4 if marketing opportunities were available, a system of planting in four phases could be used, as amadumbe take six months to mature, they could than overlap by three months, thus ensuring a continuous supply of amadumbe throughout the year. It also transpired that the shelf life of amadumbe could be up to three months if they have all been harvested at once for storage. Otherwise they could be left in the ground and only be harvested when needed as per traditional methods. Farmers kept the amadumbe underground and only dug them when someone wanted to buy. If this could be true, then the formal retail shops and processing centres would not experience any problem of seasonality in future.

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

8.1 Statement of the problem

How could marketing opportunities for indigenous crops such as amadumbe be pursued to generate income for small scale farmers of KwaMbonambi and Sokhulu wards of the Mbinambi municipality in order to reduce poverty in the area?

The study has revealed that marketing opportunities were with formal retail shops and processing centres in Mbonambi, Richards Bay, Empangeni, Esikhawini and Stanger. Specifications were then collected by means of questionnaires and focus group discussions from formal retail shops and processing centres, as for as quality, quantity and varieties were concerned. After establishing the quality, quantity and varieties farmers are able to cope with extra demands. That was the season why the study went further to assess the possibility of farmers small scale farmers coping with the presented demands of formal retail shops and processing centres: Through the use of participatory tools like the transect walk SLA and FFA, challenges were identified and possible solutions discussed, which would eventually empower the small scale farmers to meet the demands of the market and thus enter into the commercial world. At the end of the day, poverty would be addressed and one millennium development goal would be achieved.

8.1.1 Sub-problem one

What were the general specifications of formal retail shops and their intermediaries for amadumbe with regard to quality, quantity and variety that they expected for their shops?

All that the formal retail shops needed was a reliable supplier who would provide amadumbe of good quality, fully matured, fresh, clean and free from soil. Mesh pockets and crates for packaging were also suggested by managers in formal retail shops. The quantity of amadumbe required from all the interviewed formal retail shops could be estimated at about 200 tons per month. There was one variety of amadumbe suggested, namely the *Colocasia Esculenta* which is available in three sizes, small, medium and large.

8.1.2 Sub-problem two

What were the criteria used by amadumbe processing centres with regard to quality, quantity and variety of amadumbe needed to produce the best products for their target market, and the effects of seasonality of this crop on their continuous production for the supply of amadumbe- products?

The processing centres needed good quality amadumbe which were fully matured, fresh, clean and free from soil. They had to be completely dry to prevent mould. The quantities needed were very unstable because of the initial stages at which the processing centres were. The Stanger processing centre also indicated that they had purchased a big processing machine that was able to process 20 tons of amadumbe per day. Based on that, the processing centres would need 100 tons per week or 400 tons per month once they were fully established. The suitable variety was the small *Colocasia Esculenta* which produced the best amadumbe chips. Otherwise the bigger types were either too long or mushy for the chips.

8.1.3 Sub-problem three

Given the requirements of the formal retail shops and processing centres and the current infrastructure available, would the small scale farmers be in a position to cope with the demands of the formal retail shops and processing centres, based on their present farming practices, the quality, quantity and variety of amadumbe in their fields? What changes would be required for them to be the appropriate and reliable suppliers?

The quality of amadumbe required by the formal retail shops and processing centres had one thing in common and that was good quality. The quantities put together for formal retail shops and processing centres could be estimated at (200 + 400) 600 tons per month. The varieties were also not different and it was exactly what the small scale farmers were producing. The processing centres were very particular about the small size of amadumbe.

The study revealed that the small scale farmers only owned 1 or 2 ha of land each. So they could not cope unless changes were undergone to make them the appropriate and reliable

suppliers of amadumbe. A structure was therefore elected which was the Amadumbe Growers Association, to co-ordinate training on co-operatives, commercial farming and business management. A training of this nature would empower the small scale farmers for the commercial world. Based on the number of respondents (100), farmers had the existing capacity to produce 200 tons of amadumbe per month. The big challenge was how they would increase their capacity to 600 hundred tons per month in order to meet the projected demand. During the transect walk, vast areas of unoccupied land that either belonged to the Tribal Authority or to other farmers, were identified. It was therefore agreed that the Amadumbe Growers Association would approach the Tribal Authority and other farmers to request more land in order to cope with extra demands, from formal retail shops and processing centres.

Another purpose was to create a platform for the communities and researchers to learn from each other. Whilst the researchers opened the eyes of the communities of Mbonambi and Sokhulu to marketing opportunities, the community threw some light on the issue of seasonality of amadumbe and the storage of amadumbe underground. The study was also expected to build and strengthen a network within different projects operating individually in the area. As the study continued, one marketing forum was established for Mbonambi and one for Sokhulu. These were structures which would form the marketing link with formal retail shops and processing centres and investigate new marketing opportunities.

Finally the study revealed that the amadumbe producers of Sokhulu were not well organized, as they produced amadumbe individually. This made it very difficult to approach formal retail shops and processing centres with large quantities of amadumbe. It was therefore agreed that they would organize themselves into co-operatives so that they could operate as legal entities. It would be easier to approach formal retail shops, their intermediaries and processing centres through the marketing forums. At Mbonambi, it was easier because communities were already working as groups but not yet registered as cooperatives.

8.2 Recommendations for amadumbe producers based on the results

It was suggested that the amadumbe farmers of Sokhulu and Mbonambi receive training on co-operatives and thereafter register so that they could approach formal retail shops, their intermediaries and processing centres, as legal entities.

Another recommendation was that the Amadumbe Marketing Forum should be formed. It would be the structure that would be expected to visit formal retail shops, their intermediaries and processing centres, in order to promote products and negotiate deals. The forum would also see to it that the farmers were producing according to the specifications of both traders and processing centres, which is not yet done at present and training on management of cooperatives by the DAE is still in the pipe line. Another function of the Forum would be to approach individuals and the tribal authorities for more land, NGOs and government institutions for more funds to be used in marketing amadumbe because this is the aspect that has received less attention over the years.

8.3 Recommendations for government institutions, NGO's and private companies

From the SLA, it transpired that most agricultural projects funded by government institutions, NGOS and private companies, were mainly for the production of vegetables, poultry and nurseries. The recommendation was that as development institutions offered funds mainly for production, the marketing aspect should also receive attention. Much effort and funds go to the production phase but when the marketing aspect is neglected, it becomes a futile exercise. The Department of Agriculture will need to put more funds into the marketing aspect of its extension service in order to balance service delivery

8.4 Recommendations for improving the current study

This study was dealing specifically with marketing opportunities for amadumbe, with a small sample; the current study could be repeated but with a bigger sample. It also transpired that public and private companies have placed more attention on the production aspect at the expense of the marketing aspect. Another study could look at other areas producing amadumbe in comparison with Mbonambi and Sokhulu.

8.5 Recommendations for further research

Although the respondents were positive that amadumbe could be available throughout the year if they were produced four times a year, a study in this regard would be recommended in order to take informed decisions when venturing into business. This current study was only able to assess the shelf life of amadumbe which happened to be from three to four months as mentioned in 5.7. However since farmers do not start planting at the same time, amadumbe could then be available for up to six months. If they were planted in June, amadumbe would be harvested in December, and remain available for six months while those planted in December, would be harvested in June and remain available for six months, and thus available throughout the year. They would therefore be available for the market as well. As far as quality and quantity were concerned the marketing forum would organize people to specialize in cleaning, sorting, packing and transportation of amadumbe to the market. Further study would assist to monitor progress and determine whether the required quantity of 600 tons was being met. A further study would look at the reasons behind the little attention given to the marketing aspect.

Further research could be responsible for:

Evaluating whether the election of Amadumbe Marketing Forum did make an impact in the marketing of amadumbe through increasing sales, negotiating transport and more land.

Evaluating whether working as individuals or as co-operatives provides sustainable marketing opportunities, by assessing the performance of individual and that of co-operatives in supplying formal retail shops and processing centres with amadumbe.

Evaluating if local amadumbe producers can provide a sustainable supply of amadumbe for formal retail shops and processing centres. Is it really feasible to have multiple crops per year? And what needs to change with farming practices of amadumbe farmers to accommodate larger quantities to meet the requirements of formal retail shops and processing centres?

Determining how the seasonality of amadumbe can be overcome so that they are available throughout the year to supply formal retail shops and processing centres.

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APPENDIX A: QUESTIONNAIRE FOR FORMAL TRADERS

You are kindly requested to assist in this study by answering the following questions. The data collected will be treated as highly confidential

1. Marketing

1.1 Do you market the following indigenous crops in your shops? (indicated with X)

Amadumbe	
Sweet potatoes (Baby potatoes)	
Indigenous potatoes	
Cassava	
Soya beans	
Cow peas	
Jugo peas	
Pumpkin	

If amadumbes are not mentioned, ask why and leave!?

.....

1.2 Which 3 products sell fastest from the above list?

.....

.....

.....

.....

1.3 Do you use local producers as your amadumbe suppliers. Yes or No.
If yes or no, Who do you use? Or what organizations?

.....

.....

.....

.....

1.4 Do you have a local agent who supplies amadumbe?
If so, who
(address).....

.....

.....

.....

1.5 If not, where do you get your amadumbe and from where are they sourced (if known).

.....

.....

.....

.....

1.6 Which method of acquisition do you prefer and why?

.....

1.7 Who is your target market especially for amadumbe. (choose from the following list of groups, mark with X)

Group	Rank the target market (1 = most important)	Variety of amadumbe preferred	
Africans			
Whites			
Indians			
Coloureds			

1.8 Do these groups prefer different varieties of amadumbe? Yes or No.

.....
.....
.....
.....

1.9 If yes give varieties preferred by each group. Big or Small (real names)

Africans –
Whites –
Indians –
Coloureds –

1.10 How do you sell amadumbe in your shop? (indicate with X)

In packages	
In boxes	
Choose and carry	

1.11 Is the packaging suitable for amadumbe? Yes or No.
Why?.....

1.12 Can you give units and their prices of amadumbe selling in your shop.
Date:.....
.....
.....
.....

1.13 How are the amadumbe transported to your shop.

.....
.....
.....
.....

1.13.1 What would you recommend for the improvement of local producers of amadumbe?

.....
.....
.....
.....

1.15 Can you meet the demand for Amadumbe, or could you do with more stocks? Y/N
How much more would you like? .....
.....

1.16 What would make you reject a consignment of Madumbes?

.....
.....

1.17 Method of payment

Do you pay for stock immediately	
Do you send an invoice later	
Do you pay only when produce is sold?	

Thank you for
Your time

Ensure that you get detailed requirements for quality of amadumbes, and suggestions for getting this quality.

APPENDIX B: FOCUS GROUPS DISCUSSION GUIDE FOR PROCESSORS

Question asked	Isintu Foods (Esikhawini)	Stanger Processing Centre (KwaDukuza)
1. Who owns this food Processing Centre?		
2. Do you have a structural committee managing the centre?		
3. When do you get amadumbe for processing?		
4. How do you transport them to the centre?		
5. Which is the best varitety of amadumbe for processing chips?		
6. give the amount of amadumbe normally ordered over a weeks time?		
7. Do you need a specific quality of amadumbe for processing chips?		
8. If yes what quality does best in processing amadumbe chips?		
9. Is there a structure that links the centre with amadumbe producers?		

APPENDIX C: RESULTS OF SUSTAINABLE LIVELIHOODS ANALYSIS

Assets available for furthering amadumbe production.

Assets: Assets were interpreted as belongings, skills and abilities that could benefit the respondents.

- **Human assets**: would refer to people with able bodies free from diseases, strong enough to be involved in projects and with farming skills especially traditional farming skills.

- **Physical assets:** were interpreted as relating to the tools and technologies available in the area.

- **Socially,** local people were organized into different clubs working on community projects. The development committees were the umbrella bodies overseeing any form of development in each area. Their funds were collected from a joining fee paid by project members. Apart from that, funds were also obtained from the Department of Agriculture, Department of Works, Department of Health, RBM, Mondi, Sappi, Siyaqhubeka and Natal Parks Board (NPB) mainly for fencing and agricultural inputs, for fruit and vegetable production.

- **Natural resources** available for amadumbe farming were land, water and the sun.

- **Land**: Land tenure within the Mbonambi Municipality area can be divided into six different categories. Land tenure in this area is not mixed but concentrated in specific areas spread over the Municipal area: KwaMbonambi is the only **proclaimed** urban **settlement** within the Mbonambi municipal area and is located in the centre of the Municipal area. **Privately owned land** occurs around KwaMbonambi and covers the largest proportion of the municipal area. **Sabokwe-An informal settlement** located in the south eastern side of the Mbonambi Municipality. A small proportion of land north of KwaMbonambi is used for **formal conservation** and is known as Lake Eteza. **The Ingonyama Trust land** is located on the eastern and western sides of the privately owned land. These areas are known as Mbonambi

Mhlana and Sokhulu (Mbonambi IDP 2004), but the areas under study are Mbonambi and Sokhulu that are part of the Ingonyama Trust Land. They are all areas under the jurisdiction of amakhosi. Amakhosi form a very important aspect and are a vital structure in development because any form of development without their approval will fail. Any development that has to do with land needs consultation and approval of amakhosi for it to be successful That was the reason why this study was done in consultation with traditional leaders so that it would be easier for amadumbe growers to request more land for increased production. Proclaimed mine lease areas are located on the eastern side of the Mbonambi municipality area and cover an extensive stretch of the coastline. They are owned by a private company, Richards Bay Minerals (RBM)

- **Water**: Mbonambi and Sokhulu areas mainly receive summer rains of about 800 to 1400mm per year Mbonambi area may receive winter rainfall of up to about 40 percent (Mbonambi IDP 2004). The coastal plain has a number of non perennial rivers. Most of them feed the Lake Nhlabane Nsezi and Mzingazi which are the biggest suppliers of water in the area with RBM placing the greatest demand on water especially from Lake Nhlabane (Mbonambi IDP 2004).

- **Temperatures** of the Mbonambi Municipality are humid with hot summers and mild winters. Hence on the days of the transect walks the temperature was 30 degrees Celsius.

- The response about **economic assets** was that three people owned very old tractors; others had some manual garden equipment. They also indicated that they have cattle, goats, and fowls. Some of the population sampled indicated that they had cars and brick houses. The respondents were always available to provide labour for their own projects as human assets, although others were badly affected by HIV/AIDS. Financial income was scarce with many demands on their money.

APPENDIX D: RESULTS OF THE TRANSECT WALK

The main objective of the transect walk was to assess the area available for amadumbe production in order to assess the potential of the people to meet greater demands from shops and processing centres. The transect walk was done in straight lines along the trenches. The research team and amadumbe producers were involved in **the transect walk of Sokhulu in a place called Hlanzeni**. During the discussion responses were recorded as follows:

Q - How do you maintain good quality for amadumbe?
A - We harvest it when it is fully matured.
- We remove the soil and wash it on a sunny day to let it dry.

Q - What quantities do you normally produce and why?
A - In an acre we produce about one ton per person, because we only plant for consumption; if anything remains we sell locally.

Q - Do you plant different varieties of amadumbe?
A - Yes, we produce three kinds of amadumbe one the big red type and the white small and medium type?

Q - How do you counteract the seasonality of amadumbe?
A - Amadumbe's are actually not seasonal because they can be planted twice in a year, in June and in December. However because there was no demand, people have become so accustomed to planting once a year that it eventually was thought of as seasonal.

Q - Are there any chances of expanding your land to meet greater demands?
A – Yes, some of us own large areas of land which are used. The project members can also approach the tribal authorities for more land.

The Mbonambi responses were recorded as follows:

Q - How do you maintain the good quality for your amadumbe?

A - We only harvest when amadumbe are fully matured.

- We remove the soil and wash them thoroughly with clean water, and let them dry in the sun

Q - What quantities do you normally produce and why?

A - There is no need for much since we only produce for consumption.

Q - Do you produce different varieties of amadumbe?

A - Yes, there are three kinds of amadumbe produced in this area. That is the white small and medium type and the big red type.

Q - How do counteract the seasonality of amadumbe?

A - There was no need to counteract because they were not in great demand. If they can be in demand we can produce them throughout the year since they can be planted twice a year, in June and in December.

Q - Are there chances of expanding your land to meet greater production demands should a need arise?

A - Yes, most people have vast areas of land so negotiations can be made since some of them are also members of the project as well.

Results of the Sustainable livelihoods analysis (SLA)

After a short presentation on the purpose of the research, the respondents were divided into three groups to discuss the livelihood strategy of the people of the area, their assets constraints and dreams for the future. The exercise was carried out at Sokhulu and Mbonambi respectively. The results were then summarized as follows:-

A summary of the results of the SLA:

The livelihood strategies for Sokhulu and Mbonambi are very similar due to the fact that the two areas are adjacent to each other, along the sea, with the same climate conditions and the same companies offering job opportunities. So some of the people in this area own forest, sugar cane and banana plantations. Those that own these plantations then offer job opportunities to those who do not have plantations but are willing to work. Others sell vegetables including amadumbe to hawkers to earn a living. There are companies like RBM, Mondi, Sappi, Siyaghubeka and NPB where most young people work. The old and sick or disabled live on pension grants. However there are people that live in poverty with no means of income at all.

Considering the assets, the people of Sokhulu prefer individual planting in the production of amadumbe although they are organised into projects when it comes to other vegetables.

The Mbonambi people are already producing amadumbe as projects. The majority of the people working for amadumbe production are women but with more young people at Sokhulu when compared to KwaMbonambi. They all own one or two acres of land and there are possibilities of expansion. They have a substantial amount of underground water which is sometimes a threat to their crops. So they need trenches to drain the water.

On physical assets; they mentioned a few people with old tractors, gardening equipment like hoes, rakes, (additional watering cans bought through the funds generated), cattle, goats and chickens. They collect funds from joining the cooperative and subscription fees from members of the projects. Other projects have been funded by the Department of Agriculture, Social Welfare, Department of Health, RBM (Richards Bay Minerals) Mondi, Sappi, Siyaqhubeka, NPB (Natal Parks Board) and others.

Their dream was to pursue marketing opportunities for commercially selling to formal retail shops like Spar, Pick n' Pay, Fruit & Veg and others in the neighbouring towns

which are Mbonambi, Richards Bay and Empangeni. However their main problem, they decided, would be transport.

Results of the Force Field Analysis

From the problems identified in the SLA, the groups prioritized together and come out with one major problem. A force field analysis was therefore used to establish the current situation, their dream, constraints that might hinder the progress, and strategies they intend to use to reach their desired goal. Responses from Sokhulu and Mbonambi were shown on table 5.3.

According to the log, the main problem of the madumbe producers of Sokhulu and Mbonambi was marketing their produce to the neighboring towns of Mbonambi, Richards Bay and Empangeni. They had never made any attempt to approach formal retail shops like Spar, Pick n' Pay and Fruit and Veg. +The main reason was the language barrier, transport, small areas of land where they were producing amadumbe and the skill needed to pursue such marketing opportunities. So the driving forces agreed upon were to negotiate with development officer Mr J Thabethe about using the available community development bakkie for a time being, and then later purchase their own bakkie. Approach the tribal authorities to acquire more land so that they can be in a position to meet the greater demands from formal retail shops and processing centres. For skills and the English language which was a barrier, the Department of Agriculture will be approached to assist. Finally, steps were laid down, which would ensure progress in all the actives agreed upon, as well as time frames.