CONFERENCE
Strategies to Overcome Poverty & Inequality
"Towards Carnegie III"
University of Cape Town, 3 - 7 September 2012

People's perceptions on indigenous leafy vegetables: A case study of *Mantusini* Location of the Port St Johns Local Municipality, in the Eastern Cape, South Africa.

Vuyiswa Taleni, Phefumula Nyoni, Nomalungelo Goduka

Faculty of Education, Walter Sisulu University, South Africa

Department of Anthropology, School of Social Sciences and Development studies

vtaleni@gmail.com, pnyoni@wsu.ac.za, ngoduka@wsu.ac.za

Telephone: 0730845864 / 0837482314

Abstract

The study explores the perceptions and responses of *Mantusini* people, and reveals their attitudes towards the use of indigenous leafy vegetables (ILVs). This community is located in one of the Province's remote rural areas characterized by high poverty levels and food insecurity. Besides establishing people's perceptions and documenting indigenous leafy vegetables, the research presents innovative ways in which the community can benefit from the readily available leafy vegetables. This beneficiation is hoped to be accompanied by an anticipated change in people's mindset from that of belittling the indigenous leafy vegetables in favor of exotic ones to an appreciation that these can be used in transforming their livelihoods and enhance food security. The study further shows that contrary to beliefs that youths shun use of ILVs they, in practice, are interested in them and in many instances initiate their consumption in households. The indigenous leafy vegetables include *umhlabangubo* (*Bidens pilosa*), *unomdlomboyi* (*Amaranthus hybridus*), *imbilikicane* (*Chino podium albunse*) and *umsobo* (*Solunam nigram*).

A mixture of questionnaires, in-depth interviews and observation was used to get data. The study is based on the theory, *Eziko: sipheka sisophula* by Goduka (2005), which emphasizes that all reality is constructed, deconstructed and reconstructed and one kind of reality is as good as the other, as far as it serves to steer and sustain those that hold it to be valuable in the contexts of improving their lives as a community.

Keywords: Indigenous leafy vegetables (ILVs), perceptions, community, food security, sustain, cultural identity, ancestors.

Introduction

This chapter serves as the foundation for the research by providing information on what has been researched and written by other scholars on TLV's. Some gaps in the literature will be exposed in the process. This chapter covers both the theoretical and empirical literature.

Background to TLV's in various communities

According to Schippers (2000) the traditional leafy vegetables are plants that species of which the leafy parts, which may include young, succulent stems and very young fruit are used as a vegetable. African people use different concepts to refer to these plant species collectively, the use of terms such as morogo (Sesotho, isiPedi) or imifino (isiZulu, isiXhosa), which literally translated means traditional leafy vegetables. This dynamic concept is particularly useful when approaching leafy vegetables from the perspective of contemporary indigenous knowledge and practice. . Many leafy vegetables are obtained by collecting since they grow natural and not by means of cultivation. Limited propagation of the seed of selected species in the fields does occur and a limited number of species are being cultivated.

Hart and Vorster (2006) indicated that many of the leafy vegetable species, especially those that grow as weeds or in the wild, are seasonal and highly perishable.To extend the period during which they are available; differentways of preserving these vegetables have been developed. The two main methods are the sun-drying of fresh leaves and the sun-drying of blanched or cooked leaves.

Southall (1961) noted that in Benin 162 recorded forest plant species consumed by local populations and reported that the leafy vegetables ranked second after fruits. Adjatin listed over 180 traditional leafy vegetables, including Acmella uliginosa (Sw) Cass. (Asteraceae), Ceratotheca sesamoides (Pedaliaceae), Justicia tenella (Nees) T. Anderson (Acanthaceae), Sesamum radiatum (Schumach & Thonn.) (Pedaliaceae), commonly consumed in Benin by many ethnic groups rather as wild vegetables than cultivated plants. Unlike the cultivated species, seeds from wild species are generally dormant. Some farmers who started the domestication of the four above mentioned

vegetables were faced with low germination of seeds including those of C. sesamoides, S. Radiatum and A. uligonosa.

There is a dire need to provide farmers with qualified seeds, since there is no report on the germination of the seeds of these species. According to Norgood (1994) to promote the production of the four leafy vegetables, a vast research program including the farming systems, the conservation, the genetic and biochemical variability, the biology of development and the regime of production. The nutritional quality, the local taxonomy of the 4 species in relation to the socio-economic groups. The main objective of the study was to determine the optimal germination conditions of the four species under domestication in Benin.

Perceptions on TLV's in African communities

Schippers (2000) noted that the most popular leafy vegetables are obtained by collection from the veld/fields rather than cultivation. He added that several species, such as amaranth and spider flower, are pioneer plants which emerge naturally when soils are disturbed. Langills (2010) added that they are regarded as weeds in commercial farming systems but not in African smallholder cropping systems. Women who do most of the weeding in smallholder cropping systems often distinguish between undesirable weed species, which are hoed or pulled out, and species that belong to the local collective of leafy vegetable species, which are harvested or left undisturbed for subsequent use. Most of the species that are consumed as leafy vegetables grow in summer. The growing interest in these vegetables in both research and policy circles contrasts sharply with the negative image these plants have come to carry among important potential groups of consumers in South African society, particularly the youth and the urbanized, who tend to associate their consumption with poverty and the past

Vorster et al. (2002) Hart and Vorster (2006) also indicated that even in selected rural areas of the South Africa decline in the consumption of these leafy vegetables. Particularly those that are harvested from the wild or that naturally emerge as weeds, in favor of exotic vegetables has been observed. This was evident from there cent case study conducted by Jansen van Ransburg and Vorster (2005) in three parts of the former Transkei in the Eastern Cape Province, which showed that the use of these types of leafy vegetables has been declining at all three sites during much of the twentieth century, particularly at Qunu, where access to exotic vegetables was the easiest, because of its proximity to Mtata the largest urban centre in Transkei.

Challenges noticeable in the use of TLV's

It is alleged by some writers such as Vorster and Rensburg (2005) that many of these plants have also become scarce supporting the statement that TLV's utilization is declining. The decline in number of people consuming TLV's might be due to modernization as the younger prefer the fatty tastes associated with many snacks and

fast food. Vorster and Rensburg (2005) also cited that the general labeling TLV's as "weeds" and the knowledge associated with it as old fashion has led to the food being seen as low status food consumed by the poor, thus many children's do not want to eat TLV's. A Pedi proverb "Meat is a visitor, but morogo a daily food" (Hart and Vorster, 2006) indicates the reality of consuming wild leafy vegetables in most Bapedi households in rural communities. Morogo is the collective name given to traditional vegetables by the Bapedi. These households rely on wild traditional plants or cultivated plants as a food source; many of which are indigenous to South Africa, though some originate from other parts of the world (Hart and Vorster, 2006). Studies in different areas of South Africa indicate differences in cultural preferences for traditional leafy vegetables and the practice of mixing leafy vegetables into dishes is common Shava and Nesamvuni (2000). These studies also indicate that traditional leafy vegetables are high in micronutrients such as vitamin C, folic acid, iron and beta-carotene. Consumption of traditional leafy vegetables is therefore found to be the most sustainable way of adding diversity to the diet; thereby controlling micronutrient deficiencies (see Paragraph 2.4 and 2.8).

Murphy and Sprey (1982) also mentioned that people in many households do not want to eat TLV"s and insist on eating meat, leaving the TLV's for older people, this relegates TLV's in the household to a low status food. Another possible reason could be that other people do not like TLV's since they claim that it taste bad since they are not familiar to the taste.

The blandness of preparation few ingredients used when cooking might be a problem. Much of the decline can be attributed to human perceptions and changing taste preferences. During the questionnaire the children's showed the importance of lack of status of the plant and blandness of tastes to be considered important factors. The process of collecting TLV's in the field or garden also have impact in declining usage of TLV's since most people prefer commercial one's which they buy. The seasonal availability were by in dry or winter season these plants are not available they do not get these TLV's in the field and have to buy commercial leafy vegetables which is available all seasons in the market.

Environmental, cultural, population and historical changes are challenging the flexibility and dynamic character of IK that enables it to change from within. In areas where the strong social organization has broken down, some IK may survive but might not be relevant to the new organizational form that has usually been formed with outside help (Farrington & Martin 1988). Communities manipulate their social and natural environment to achieve a successful livelihood but IK can also internalize, adapt and use external knowledge. Sillitoe (2000), Grenier (1998), and Richards (1985) has noted that there is now recognition that cultures are not only systems to perpetuate values, but also embody ways of knowing, organizing and interacting with the environment. In

spite of this increasing acknowledgement of diversity, racial and cultural intolerance is on the rise (Norgaard 1994).

Nekesa and Meso (1997) reported that communities perceived a decline in the use of traditional food plants. The decline was ascribed to an inability to compete commercial and traditional leafy vegetables reputation of low status leafy vegetables. Smith (1999) reported a decline in the availability of traditional vegetables. The decline was linked to the habitat changes caused by the production of exotic crops. The younger generation not realizing the nutritional value of these plants research and development efforts to promote and improve the TLV's.

Smith and Eyzaguirre (2007) found that over 60 % of the respondents in Bushbuckridge perceived that there was a decrease in traditional leafy vegetables in the area. These results seem to agree with the villagers perceptions about the declining utilization of TLV's. The loss of traditional food knowledge as a result of social change has been recorded in Africa. The popularity of species is function of many factors, including availability, case of preparation, taste, consistency and appearance. The ubiquitous availability of amaranth species explains why these plants are used as leafy vegetable in most parts of South Africa. The soft, fast-cooking leaves of pumpkin and nightshade species are preferred to the finery leaves of cowpeas and old another very important factor is subject to regional and gender diversity in the north of South Africa the bitter taste of nightshade and cleome are highly appreciated, particularly buy males, whereas in south the sweet taste of amaranth leaves is preferred. Similarly, may people in the north enjoy the mucilaginous texture of Corchorus and okra, whereas people in the south dislike sliminess?

When recent additional, such as Swiss chard, are ignored, the available evidence obtained from different parts of the country indicates that seven groups of leafy vegetable species are of particular importance in contemporary South Africa. These are amaranth (Amarathus), spider flower (Cleome gynandra), rape or Chinese cabbage (Brassica rapa subsp. Chinensis), nightshade (Solanum retroflexum and selected other species belonging to the S. Nigrum complex), Jew`s mallow (Corchorus olitorius and C. tridens), cowpeas (Vigna inguiculata) and pumpkins (Cucurbita pepo, C. maxima and C. moschota), melons (Citrulus landaus' and Cucumis melo) and selected other indigenous cucurbits, such as balsam pear (Momordicabalsamina).Traditional leafy vegetables are associated with poverty, the past and low self-esteem, in particular in the eyes of the youth and urbanized communities Jansen van Rensburg et al., (2007). However rural Africans still hold indigenous knowledge of traditional leafy vegetables. This knowledge is associated with the female domain in South Africa. However once grown as a crop, the male domain becomes interested as such crops are commercialized Hart and Vorster (2006).

The decline in poor utilization may also be associated with the lack of knowledge of how to access quantities and employ practices that can satisfy daily nutrient requirements. The interest in traditional leafy vegetables by researchers and policy-makers contrasts with the extent of use and consumption of traditional leafy vegetables by communities Jansen van Rensburg, et al., (2007).

In the last few decades great changes have taken place in South Africa. Urbanisation, migrant labor, greater access to health care and education, a greater effort to shift farmers from subsistence to cash cropping, increased population pressures and environmental degradation have led to changes in the socio-cultural and environmental environments of many people. These changes have severely eroded the indigenous knowledge base (Hart & Vorster 2006, Van Wyk & Gericke 2003, Vorster & Jansen van Rensburg (2005). Modi and Hendriks (2006) found in a study in Ezigeni, KwaZulu-Natal, that there was a loss of knowledge about the plants in the younger age groups and suggested that education is very important in an attempt to prevent this loss of indigenous knowledge of these food crops. Hart and Vorster (2006) noted similar findings in the Letsitele area while Vorster and Jansen van Rensburg (2005) also noted this in the Lusikisiki and Qunu areas in the Eastern Cape. The introduction of social grants has severely affected the agricultural activities in many villages in the Eastern Cape region, with many people now preferring to buy staples, rather than to grow or harvest them Vorster & Jansen van Rensburg (2005)

Description of meals made with TLV's in Madagascar

TLV's can be consumed with meat since most people prefer a meal with meat in many parts of the country, there are many methods and ingredients used in preparing the meal using traditional leafy vegetables. Lin, and Chang (2005) indicated that in Madagascar, the traditional meal is based on rice consumed with one or several trimming dishes commonly named laoka prepared with vegetables that are available all year round at low cost. The laoka is generally made of vegetables, leafy-vegetables or meat and, according to its recipe; it is named rô (broth dish), ketsaketsa (juicy dish) or ritra (rather solid dish). In the dishes identified, there is one rô that corresponds to a vegetable soup (lasopy legioma) there are six ketsaketsa (anatsonga, ramirebaka, petsay, anandrano, tisam and ravim-bomamga) and two ritra (anandranosy hena and ravitoto). The basic ingredients were tomatoes, onions, soy oil, salt, and Jumbo_ cube. According to the dish, the proportion of fresh leaves was variable and ranged from 68.3% to 81.1% on a wet basis and 41.2% to 58.8% on a DM basis. Leafy vegetables were the main ingredient in these preparations and they were always cut, washed and drained. When meat was added, it always represented a small proportion of the dish (maximum 10.6% of the dish in wet basis). Approximately eight steps were used to process the ingredients and the recipes often began by frying the tomatoes, onions and Jumbo_ cube for 3 min. Next, fresh leafy vegetables were added and the whole dish was boiled for different lengths of time in the small dried shrimps were also added.

Two dishes (ramirebaka and petsay) included a preliminary step of blanching and draining to eliminate the cooking water. The lasopy legioma was made from several vegetables in approximately the same proportions (carrots, potatoes, French beans, leeks, celery, pumpkin and fresh white beans). Ravitoto should be interesting from the nutritional value because it is based on ground cassava leaves. The small particle sizes of leaves presents in the resulting dish should increased the micronutrient (i.e. carotenoid and essential minerals) bioaccessibility as previously demonstrated in others dishes (Mulokozi et al. 2004).Thermal (frying, blanching and boiling) and mechanical (crushing, cutting) treatments were used. Some recipes included six (ravitoto and ravim-bomamga) to eight (petsay) steps. Some unit operations (boiling, mixing, cutting) were almost always used, whereas others were rarely used (blanching). All the recipes were prepared in an aluminium pot covered with a lid. The thermal treatment was more intense for the ravitoto but did not exceed 40 min at 100_C.

The recipes were simple and based on mixing many ingredients and boiling. The best dish, according to its physical state (crushed leaves) and its nutritional value (i.e. richness in iron, zinc and b-carotene), was the ravitoto. When meat was added to the dish, the micronutrient (iron, zinc, RAE) contents were not the highest, indicating that the parts of zebu used were not of high nutritional value. When stems of leafy vegetables were added to the dishes, the fiber contents increased and should decrease mineral bioavailability. The dishes had high b-carotene contents and RAE because of the incorporation of a great proportion of fresh leafy vegetables. A positive correlation was found between the thermal treatment severity and the 13-cis-b-carotene amount in three dishes ramirebaka, ravitoto and anatsonga

Traditional leafy vegetables used for immunization for diseases

According to Lin and Chang (2005) the historically procured food items and plants have other culturally meaningful, health-related purposes. Cash crops do not have the same level of significance for Zimbabweans. This fact is crucial for understanding the meanings attached to foods as related to the AIDS epidemic. There are today so many sicknesses because we do not eat any more the food of the old days." People with whom I spoke were convinced that fruits from indigenous trees, as well as herbs, nuts, tubers, and leafy vegetables collected in the grasslands and historically used small grains are both nutritious and healthy. Urban residents complained that these are not readily available in the cities and, when they are available at the markets, they are expensive and unaffordable. Informants told me that if they had sufficient fields in rural areas and if transport were affordable, they could harvest these items and bring them to town. It has been observed elsewhere that foods regarded as being inherited from previous generations are often creolized foods adopted from different social and cultural groups.

Traditional leafy vegetables used for Medicinal purposes in Italy

As indicated by Etkin and Ross (1982) non-cultivated species with reported specific medicinal properties ingested in a food context. Most are part of the intermediate category of leaves roughly corresponding to what the modern nutritional sciences nowadays call green leafy vegetables or indigenous leafy vegetables. The consumption of most non-cultivated leafy vegetables is considered 'healthy', though without any specification. However, Heinrich noted that a few culinary preparations are perceived to be home-made medicines. Overlapping between foods and medicines is quite well known in traditional societies (Etkin and Ross 1982; Etkin 1996; Heinrich 1998; Johns 1999; Pieroni 2000; Pieroni et al. 2002; Pieroni and Price 2005) and represents an often neglected field in ethno pharmaceutical research. Culinary preparations based on plants and considered to be part of healthcare practices in traditional cultures are usually exclusively administered by the women in the household. These aspects should be investigated in greater depth in future ethno biological studies in the circum-Mediterranean area, as the household provision of care and health-care (Niehof 2002) is often underestimated, most studies privileging the 'medicine of the healers' instead of the 'medicine of the households' (Howard 2003).

Medicinal food from TLVs in Zimbabwe

Many urban healers have extensive knowledge of wild vegetables and fruits. They not only knew the names and could identify the plants, but also specified their medicinal uses. Considering that knowledge of indigenous plants is disappearing, researchers at the University of Zimbabwe have stepped up efforts to study the nutritional and health benefits of indigenous foods, share this knowledge with the general public, and encourage people to utilize these foodstuffs readily available to rural people (IRIN News 2008). While these foods are not easily obtainable in urban areas, they can increase food security for rural populations and may have health benefits for those living with HIV/AIDS. My discussions with township residents indicate that traditional plants and fruits were not only desired for nutrition but also for their assumed medicinal properties. For example, the light green or yellow flesh of the ijodo (Citrullus lanatus, a sweet melon, also called pig melon) is boiled together with corn. This light snack is called umxhanxa, and is taken not only for its flavor and nutritional value, but also as a purgative. The leaves of the ijodo are cooked and consumed as a relish, and are also used to treat sores on domestic animals. A complementary explanation is that in 2001, treatment with antiretroviral (ARV) medications was virtually unknown, or at least unavailable, and the African Potato gave hope to those fearing an HIV-infection in the absence of biomedical treatment. In 2003 many had heard of ARVs and placed their hope in them. In 2009, ARVs were somewhat available and accessible and interviewees preferred them over the African Potato.

Strategies in the propagation, preservation and processing of TLV's

Vorster et al. (2002) noted that amaranth is known as misbredie, hanekam, varkbossie in Afrikaans, pigweed, cockscomb and hell`s curse in English, unomdlomboyi, imbuya, imifuno, umtyuthu in isiXhosa, imbuya, isheke, indwabaza in isiZulu, thepe, theepe in isiPedie, Sesotho and Setswana, umbuya, isheke in siSwati, vowa, thebe in Tshivenda, theyke, cheke in Xitsonga, mohwa in Shona and imbuya, tyutu in Pondo. Amaranth belongs to the Amaranthaceous family and is an extremely variable, erect to spreading herb. The height of mature plants varies between 0.3 m and 2 m, depending on the species, growth habit and environment. Some species have distinct markings on their leaves. Terminal and auxiliary inflorescences occur. The small seeds of the leafy amaranths are usually very shiny and dark brown to black, contrary to grain types, which usually have seeds that are cream colored.

In winter the traditional leafy vegetables are scarce people collect the imifino in when they are available and dry them to for using in winter, Avallone, Brault, Mouquet, Trèche (2007) reported that during high precipitation seasons when leafy vegetables are plentiful, some communities preserve them by drying for use in times of scarcity. In this way the preserved vegetables contribute to house hold food security and are more easily marketed as a technology to the communities. . Hence our conservation through use approach is to work with the farmers within the existing production and consumption systems to maintain local knowledge about their diversity and uses, to document the genetic diversity of key priority species, and to demonstrate the potential for improvement and their competitiveness against other exotic vegetables species such as cabbage and spinach On the other hand the ex-situ conservation is the conservation outside their natural environment in biodiversity centers for research, teaching, pleasure propagation and seed production of indigenous and endangered plants. Such diversity centers include botanic gardens.

Chweya and Eyzaguire (1999) noted that despite these advantages ALVs have been neglected by researchers, educators, policy makers, trainers and agriculturalists and this has led to extinction of some species or reduction in biodiversity and lose of the indigenous knowledge.. Another major hindrance in the production of African leafy vegetables was lack of quality seed and agronomic practices. This therefore calls for a strategy of both in-situ and ex-situ conservation strategies. The strategy of in-situ conservation of traditional vegetables is to prevent their falling into disuse because of economic demographic and cultural factors. Different species of amaranth are utilized all over South Africa, except in the arid south western areas. Schippers (2000) Vorster et al., (2002) Hart and Vorster, (2006). According to Maboko, (1999) and Schippers (2000) Amaranth is a C4 plant grows optimally under warm conditions (day temperatures above 25^0 and night temperature not lower than 15^0 C, bright light and

adequate availability of plant nutrients. The various amaranth species are tolerant to adverse climatic conditions and they are quite drought-tolerant, but prolonged dry spells induce; flowering and decrease leaf yield.

Schippers (2000) also argue that amaranth is photoperiod sensitive and starts to flower as soon as the day length shortens. Under cultivated conditions amaranth produces fresh leaf yields of up to 40tons.The young leaves, growth points and whole seedlings of amaranth are harvested and cooked for use as a vegetable. Amaranth has also got other uses. Hart and Voster (2006) stated in the Bushbuckridge area of the Limpopo and Mpumalanga Province women do harvest and store seed of amaranth, which they broadcast in their fields when they observe the decline in the population .Vorster el al., (2002) Women also practice selective weeding to replenish natural seed reserves Hart and Vorster, 2006). Selective weeding refers to the control of weeds with due regard to the weed species concerned. When practicing selective weeding, African leafy vegetables species, such as amaranth, are treated as crops and allowed to grow without being disturbed, whilst other weed species, which are not used as food, are controlled. When selective weeding is used with the intention of arising the natural population of particular weedy leafy vegetable species, the plants are left in the field to complete their full life cycle, including the release of seed.

Instant (2005) indicated that group of all the weeds that feature as leafy vegetable in South Africa, amaranth is part of the groups of species that have potential to be developed as crops. African traditional leafy vegetables are plant species, wild or cultivated, original or naturalized in Africa, and whose leaves are used in diet. They are very rich in nutrients and play an important role for subsistence and boost the income of the populations in rural areas. Apart from nutrition qualities, several species of these traditional leafy vegetables have medicinal properties.

Promotion and protection of TLVs

In making people aware of nutritious foods and promotion thereof different intervention strategies can be used. Coovadia and Wittenberg (2003) has indicated that although intervention is not an objective of this research, the action research approach which uses participation as a driving force and initiates learning in communities, opens up avenues for future intervention which cannot be ignored (Reason and Bradbury, 2006). Food acceptability and adoption of Moringa as a food source play an important role in these intervention strategies through the use of awareness, innovation and diffusion strategies (Babu, 2000). In this regard therefore, the study and the possible introduction of Moringa into the diets of people in Limpopo Province could prove useful, so will become the end goal towards which the research will be conducted. Intervention programmes have been implemented based on research to promote the use of Moringa as a traditional leafy vegetable to improve nutritional health in Africa. The WHO and the International Consultative Group on VAD declared in 2000 that Malawi had serious VAD among its population compared to other countries in Southern Africa (Babu, 2000). Intervention programmed that the government of Malawi embarked on for combating

VAD included horticultural crop production, vitamin A supplementation and agricultural extension (Babu, 2000). Most of these efforts made little progress until government agencies recognized the importance of using indigenous plant foods in trying to solve the nutritional disorder of VAD and the need to incorporate them into its policies. Eventually, the Food and Nutrition unit in the Ministry of Agriculture identified nutrient–rich Moringa that commonly grew in several parts of Malawi as a potential solution to VAD deficiency (Babu, 2000). The identification programmed was conducted by comparing the nutrient content of seven plant foods with a high content of vitamin A which are commonly consumed in Malawi to Moringa had the highest content of vitamin A and appreciable levels of vitamin C, protein, phosphorous and calcium (Babu, 2000)

The state of TLV usage in African communities

In Madagascar, the traditional meal is based on rice consumed with one or several trimming dishes commonly named laoka prepared with vegetables that are available all year round at low cost. The laoka is generally made of vegetables, leafy-vegetables or meat and, according to its recipe; it is named rô (broth dish), ketsaketsa (juicy dish) or ritra (rather solid dish). Table I presents the names of the main ingredients of the eight dishes based on leafy-vegetables. In the dishes identified, there is one rô that corresponds to a vegetable soup there are six ketsaketsa, two ritra. The basic ingredients were tomatoes, onions, soy oil, salt, and Jumbo_ cube (Table II). According to the dish, the proportion of fresh leaves was variable and ranged from 68.3% to 81.1% on a wet basis and 41.2% to 58.8% on a DM basis. Leafy vegetables were the main ingredient in these preparations and they were always cut, washed and drained. When meat was added, it always represented a small proportion of the dish (maximum 10.6% of the dish in wet basis). Approximately eight steps were used to process the ingredients and the recipes often began by frying the tomatoes, onions and Jumbo_ cube for 3 min. Next, fresh leafy vegetables were added and the whole dish was boiled for different lengths of time. In the ravim-bomamga, small dried shrimps were also added. Two dishes (ramirebaka and petsay) included a preliminary step of blanching and draining to eliminate the cooking water. The lasopy legioma was made from several vegetables in approximately the same proportions (carrots, potatoes, French beans, leeks, celery, pumpkin and fresh white beans). Ravitoto should be interesting from the nutritional value because it is based on ground cassava leaves. The small particle sizes of leaves presents in the resulting dish should increased the micronutrient (i.e. carotenoid and essential minerals) bioaccessibility as previously demonstrated in others dishes (Mulokozi et al. 2004).

State of TLVs usage in Italy

According t Alexiades (1996) noted that today in Castelmezzano far fewer non-cultivated vegetables are consumed than in previous decades. The shift has also been noticed and observed in other areas in southern Italy and in other Mediterranean regions and is the result of a changing socio-economic context: the younger generation has all but lost the interest of traditional knowledge necessary to identify, gather and process these species. While some middle-aged informants perceive the consumption of non cultivated vegetables in a negative way, often as a symbol of poverty in the past. The same features regarding this negative cultural meaning associated with the gathering and consumption of non-cultivated food plants were described in Calabria, southern Italy (Teti 1992). These local products are only very rarely part of the feasting cuisine in Castelmezzano; however, in the spring they still represent an important part of the daily cuisine.

Moreover, young women today often join the workforce as factory workers and in clerical positions, and rely on older women in their family, their mothers, aunts and grandmothers, to care for their children while they are at work. The young women have little time to carry on the traditional ways of preparing food or to gather vegetables, and so they buy nearly all the foodstuffs for their family in supermarkets and local, open-air markets. For both genders of the younger and middle-aged generation, the leaving behind of traditional ways of living in the search for other ways of life has had a detrimental impact on the transmission and perpetuation of traditional knowledge about non-cultivated vegetables, and subsequently in maintaining these local products in the daily diet. Nevertheless it is observed that nearly all the older women, especially those belonging to the lower social classes, still gather and cook non-cultivated plants and mushrooms. The consumption of these local products is an important part of the daily diet in their households, and also the households of their closest younger relatives, with whom non-cultivated vegetables are often shared. In the study conducted present all the non-cultivated and semi-cultivated plants that the informants quoted. The study show the local folk names, the parts of the plants that are used, details of their traditional culinary uses, including traditional recipes in italics, and the frequency of consumption.

Kenya TLVs usage

D'Andrade (1995) indicated domesticated and wild vegetables play a role in livelihoods in providing an improved diet in terms of nutritional value and diversity, and in supplementing the food needs of poorer households, as well as at times of famine. They also provide opportunities for income generation. The study was conducted in Nyang'oma shows that there are a large number of locally available wild plants that

contribute to the local diet. These vegetables are predominantly used to supplement relish in meals and they have been established to contain significant nutritional value. Concentration of calcium, iron and zinc in 35 wild traditional leafy vegetable species. Amaranthus, Bidens pilosa, Cleome contains mineral concentrations that are reported on a 100 mg/g fresh weight basis mineral content of Kenyan traditional leafy vegetables.
While the iron content of spinach (Spinacia oleracea) found in most parts of Africa is known to be 0.0017 mg/100 g edible portion (Food and Agriculture Organization
2004), the values observed in this study were higher for both the domesticated and wild traditional leafy vegetables. Studies by Kinabo et al. (2004) reported contents of zinc in S. nigrum to be 0.57 mg/100 g edible portion, results far lower than the levels found in most domesticated and wild traditional leafy vegetables in the study conducted.

Other studies by Ogle and Grivetti (1985) showed values of zinc in Amaranth and S. nigrum grown in Swaziland to be 1.2090.44 mg/100 g and 1.3490.45 mg/100g, respectively. However, the results shown in their study are of fresh air-dried plant materials. It is also reported that there is a possibility that, when cooked, the mineral composition in most species may be lowered depending on the methods used for preparation. The wild vegetables from the Nyang'oma area comprise 65% of the 54 species collected and identified from varied ecological habitats, which included scrubs, thickets, riverines and lakeshores located within and around the villages. Since different ecological habitats possess specific soil types and each species possesses its own mineral uptake capability, as described in other studies by Ogle and Grivetti (1985) and Raja et al. (1997), the study has shown these variations through the diverse calcium, iron and zinc compositions in different vegetable species growing in different habitats in the same area.

Traditional leafy vegetables therefore are important in improving health, elevating household food security and increasing household income among women; hence, necessary actions are needed to promote their production and consumption both in rural and urban areas of sub-Saharan countries or elsewhere. Presently, their nutritional and economic advantages are not widely recognized by many people (Smith et al. 1996). However, the bioavailability of the high nutrient compositions should be further investigated since antinutrients such as oxalates and glucosinolates may be present in some species and thus reduce nutrient uptake after consumption.

Among the domesticated vegetables, G. gynandra (202.4 mg/g), along with other vegetables like Solanum nigrum, Corchorus olitorius, Amaranthus hybridus, C. maxima and Capsicum frutescens, contained reasonably high levels of iron. Among the wild traditional leafy vegetables, the iron content was higher compared with the domesticated species and the vegetables P. quadrifida and E. arabicum contained exceptionally high levels of iron (373.6 mg/g and 103.9 mg/g, respectively).

Types of TLV's found in African communities

Maundu (1997) reported that indigenous vegetables are those vegetables whose natural home is in a specified region There are more than 45,000 species of plants in sub-Saharan Africa of which about 1000can be eaten as green leafy vegetables which happen to be the mainstay of traditional African diets. Indigenous and traditional are words used here to describe leafy vegetables that have been part of the food systems in sub-Saharan Africa for generations. Indigenous leafy vegetables are those that have their natural habitat in sub-Saharan Africa while the traditional leafy vegetables were introduced over a century ago and due to long use, have become part of the food culture in the sub-continent.

Smith & Eyzaguirre (2007) mentioned examples of AIVs found across Eastern Africa include African nightshade (Solanumscabrum), spider plant (Cleomegynandra), vegetable amaranth (Amaranthushybridus), slender leaf (Crotalariabrevidens), jute mallow (Corchorusolitorius), vegetable cowpea (Vignaunguiculata) pumpkin leaves (Curcurbitamuschata) and African kale (Brassicacarinata) among many others Abukutsa-Onyango etal.(2006). Immense attention has been directed to fruits and vegetables due to the increased awareness of the health protecting properties of non-nutrient bioactive compounds found in them, making vital components of daily diets. They also contain non-nutrient bioactive phytochemicals that have been linked to protection against cardiovascular and other degenerative diseases.

Smith & Eyzaguirre(2007) also noted that the AIVs play a key role in income generation and subsistence they are inexpensive, easily accessible and provide millions of African consumers with health promoting compounds such as vitamins, minerals, anti-oxidants and even anti-cancer factors needed to maintain health and fight off infections MacCallal (1994) Abukutsa-Onyango, 2003; and ICRAF (2004). Studies have also shown that countries that retain indigenous vegetable diets and have high consumption of these vegetables are much less likely to be affected by cardiovascular diseases, diabetes and other adverse consequences of nutrition in transition

Johns & Sthapit (2004).They are compatible in use with starchy staples and represent a cheap but quality nutrition to the poor both in urban and rural areas where malnutrition is widespread also noted that the consumption of TLVs could make a positive contribution to world food production because they adapt easily to harsh or difficult environments, the input required for growing them is lower compared with other crops, and they are highly resistant to pathogens thus requiring fewer chemicals and pesticides. This makes them suitable and advantageous for people living in areas with high population density like Africa. AIVs can act as a substitute for other cultivated crops to alleviate nutrient deficiencies by increasing nutrient supplies. They are inexpensive and easy to cook and their production can compensate for low vegetable

supply during the off-season, potentially helping to alleviate nutrition deficiency during this period Maundu (1997).

African indigenous leafy vegetables have long been known and reported to have health protecting properties and uses. They are increasingly recognized as possible contributors of both micronutrients and bioactive compounds to the diets of populations in Africa (Smith & Eyzaguirre, 2007). They are a valuable source of nutrition in rural areas and they contribute substantially to protein, mineral and vitamin intake together with fibber; they also add diversity to the diet. AIVs should therefore be included in the diet to overcome various nutritional problems like iron and vitamin A deficiency. Maundu, (1997) argues that the minerals and vitamins found in AIVs exceed the levels found in exotic vegetables like cabbage; they are also compatible to use with starchy staples because they contain ascorbic acid, which enhance iron absorption.

THEORITICAL FRAMEWORK

The theoretical framework serves as a guide for this research and therefore has been based on the theory, Eziko: sipheka sisophula by Goduka (2005) and Critical Theory. Eziko emphasized the principle of belongingness and interrelatedness with people land and nature. According to Goduka (2005) the theory is a metaphor for life, healing, education and training. This Theory is connected to the study since the literary tradition is not superior to the oral tradition, rather they complement each other. All reality is constructed, deconstructed and reconstructed and one kind of reality is as good as the other, as far as it serves to steer and sustain those that hold it to be value in the contexts of their developing lives as a community. Eziko to us the Nguni is the way of life since it involves all spheres of life the traditional leafy vegetable are our way of life since our forefathers survived for years eating these TLV's. By using this theory to this study I encourage our people by saying (masiphindele kundalashe) means lets go consider our roots.

According to Sulden (1986) Critical Theory was established by the Frankfurt School with Horkheimer and Adorno and stretches to Marcuse and Habermas. According to these theorists a critical theory may be distinguished from traditional theory according to specific purpose it seeks human emancipation, to liberate human beings from the circumstances that enslave the mentally. This theory is related to the study in manner that our people have shifted from using our indigenous way of doing thing to the Western perspective of doing things. Part of what it is to be a critical thinker is to be engaged in certain kinds of conversations and relations with other. And the kinds of social circumstances that promote or inhibit that must therefore be part of the examination of what Critical Thinking is trying to achieve. Critical approaches examine social conditions in order to uncover hidden structures. Naturally, critical theory borrows from structuralism.

According to Horkheimer and Adorno teaches that knowledge is power, this means that understanding the ways one is oppressed enables one to take action to change oppressive forces. Critical theories are thus normative; they serve to bring about change in the conditions that affect our lives.