

DRY LAND LIVELIHOOD STRATEGIES: MERLOT (MASAWU) FRUIT UTILISATION

IN DANDE AREA, ZIMBABWE

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ABSTRACT

Merlot, a non-timber forest product, has never been taken aboard when it comes to the national economic contribution in Zimbabwe. It has been viewed as a fruit for the rural poor people and wild animals. Therefore this paper seeks to assess the utilization of merlot fruit as a dry land rural livelihood enhancement strategy in Dande area. Both quantitative and qualitative methodologies through questionnaires, secondary records, interviews, focused group discussions and observations respectively were used in the collection of data. Content analysis and categorical data generated were coded according to themes and tabulated for presentation and analysis. Findings revealed that the fruit can be eaten raw, made into jam or sweet strips and in porridge preparation. It can generate income for the rural households after sale and enterprise development which created employment for the rural youth. Beer can be brewed from the fruit for cooperative work (nhimbe) for community development and for sale to generate income. The beer can also be used in traditional rainmaking ceremonies (mukwerere). SAFIRE and PhytoTrade are non-profit organizations operating in Dande, promoting sustainable production and fair trade, marketing, giving technical advice, research and development and advocacy services for the rural people. Therefore the social, economic and cultural significance of merlot have proved to be a livelihood resilient strategy through its utilisation. Institutional sustainability need to be strengthened through participatory action, learning and innovation to combat rural dry land challenges.

Keywords: Merlot, Non-Timber Forest Product, Utilisation, Dry Land, Resilience

INTRODUCTION AND BACKGROUND OF THE STUDY

In the history and development of rural areas around the country, the contribution of *Masau* product to rural livelihoods has been ignored yet it contributes meaningfully. The fruit is well known to be found in Dande where people refer to the area as *kuGombe*. There are certain belief systems with regard to the harvesting and consumption of *Masau*, with some referring to it as a fruit for wild animals whilst others view it as a fruit for human consumption as well as beer brewing. However since time immemorial, the fruit has been used as a livelihood strategy for food security at household level since the area is always drought stricken.

At the United Nations Conference on Environment and Development (UNCED) held in 1992 in Rio de Janeiro, forestry received major attention under Agenda 21; Chapter 11 entitled "Combating Deforestation". With respect to forest use, particular reference was made to the need to promote efficient utilization and assessment to recover the full valuation of goods and services provided by forest lands and woodlands (UNCED 1992). As a matter of fact in many forest operations, we can recognize that the full potential of forests and forest lands is far from being realized as a major source for development (Dovie and Shackleton, etal 2001). In countries as diverse as Sweden and Japan it has been estimated that the economic value of non-wood forest products amounts to between 20 and 25% of the value of wood products. Non-wood forest products are even more important to the economies of many developing countries; a few well-known examples include Brazil nuts, rubber, palm hearts, mushrooms, honey and beeswax, rattan, and bamboo. These products, and many others which are not so well known but are often more important to local people, have the potential to enhance the value of standing forest and therefore reduce the likelihood of deforestation (de la Cruz, 1989; Dovie etal, 2001). The value of *masawu* fruit, a non timber forest product in Dande area has been undermined by many economies at local level. It is viewed as a wild fruit for wild animals in the area. People perceived *masawu* as a fruit for the less privileged in the community. However recent studies have shown that this resource constitutes a substantial proportion of livelihoods. They provide food security and poverty reduction in the area. This paper would remove the bias that land –based activities of rural people contribute little to sustainable livelihoods and poverty reduction. It will also give policy attention to non timber forests products. This will also reduce alienation of the local people from forest products. Therefore, it is against this background that the paper seeks to assess the utilisation of *masawu* fruit as dry land rural livelihood enhancement strategy in Dande area.

Natural resources play a significant role in the livelihoods of rural households (Shackleton, Shackleton and Cousins 2000). They are part of the complex and diverse rural livelihoods. The widespread use of natural products (e.g. foods and medicines) in communal lands is well documented. For example, over 100 goods derived from woodland resources have been recorded for Shindi Communal Area; Rushinga Zimbabwe. Wild products contribute as much as 35 per cent of average household income, increasing to 40 per cent for poorer households (Cavendish 1999 in Shackleton et al 2000). The utility of natural capital in securing rural livelihoods comes into sharper focus when viewed against the background of fragile agricultural systems and frequent crop failures that characterize the communal lands of Zimbabwe. Added to this agro-potential perspective are the market reforms of the 1990s and the phasing out of subsidies. Under these conditions, and in the context of livelihood diversification, commercializing wild resources can have (beneficial) poverty reduction outcomes. As Shackleton et al (2000) conclude, policies and programs which enhance productivity, output and incomes from natural resources have the potential to attack poverty and inequality while simultaneously promoting growth.

Non-timber forest products (NTFP) describe all harvested secondary forest-resources with biological origin for purposes other than the primary management objectives of the ecosystem in which they occur. The value and the impacts of harvesting intensity of directly consumed NTFP by local populations are often neglected when accounting for livelihoods. The omission of such values could undermine the desired development of rural populations. The extent of utilisation and clearing of land cover are important factors for understanding disturbances caused to soil and vegetation systems. The changes that occur may follow a more complex trajectory hence, ignoring the contribution of insignificant but cumulative impacts of rural land-based

livelihood activities are a major threat to poverty and environment. The loss of biodiversity is noted to be unique among major global and biotic changes therefore underrating the economic value of sources of rural livelihoods could imply underrating their environmental impacts.

Among the many forest products utilised, the most common uses are for food, fodder, and medicine. Other uses include household baskets, sleeping mats, pillows, sponges and brooms, as well as for fuel wood, housing and fencing materials, and thatch grass (Peters et al., 1989; Peters, 1990; Falconer, 1992; Arnold, 1995; Campbell et al., 1997; Chamberlain et al., 1998; Dounias, 2000; Dovie et al., 2001; Marcía, 2001). Food from forests and woodlands includes fruits, leaves, seeds and nuts, tubers and roots, fungi, gum and sap (Falconer, 1990; Cunningham, 1993). At present, at least 150 NTFP are significant in terms of international trade (FAO, 1997). These include rattan, bamboo, honey, cork, nuts, mushrooms, essential oils, plants and animal products for pharmaceuticals. It is estimated that the total value of the well known internationally traded products generate about 1.1 billion US Dollars annually. The trends of trade have been from the developing countries, with about 60% imported by countries of the European Union, USA, and Japan (FAO 1997).

Non-Timber Forest Products

Human (2000), expressed that the forest provide the communities with many of supplementary source of food, with fuel wood, fodder small timber bamboo and other artisanal raw materials and ingredients for medicine. *Tendu* tree leaves are used to manufacture indigenous Indian cigarettes. Frequently defoliation of trees is occurring in the area where the leaves are collected by local residents. Among the Indians, the other importance of NTFP is *mahua* which are used by tribal communities to make a highly nutritious buttery cooking medium. There is a rapid growing demand by both urban industrial economies for manufacture of soaps and hydrogenated oil, which means that less is available to those who have traditionally depended on them.

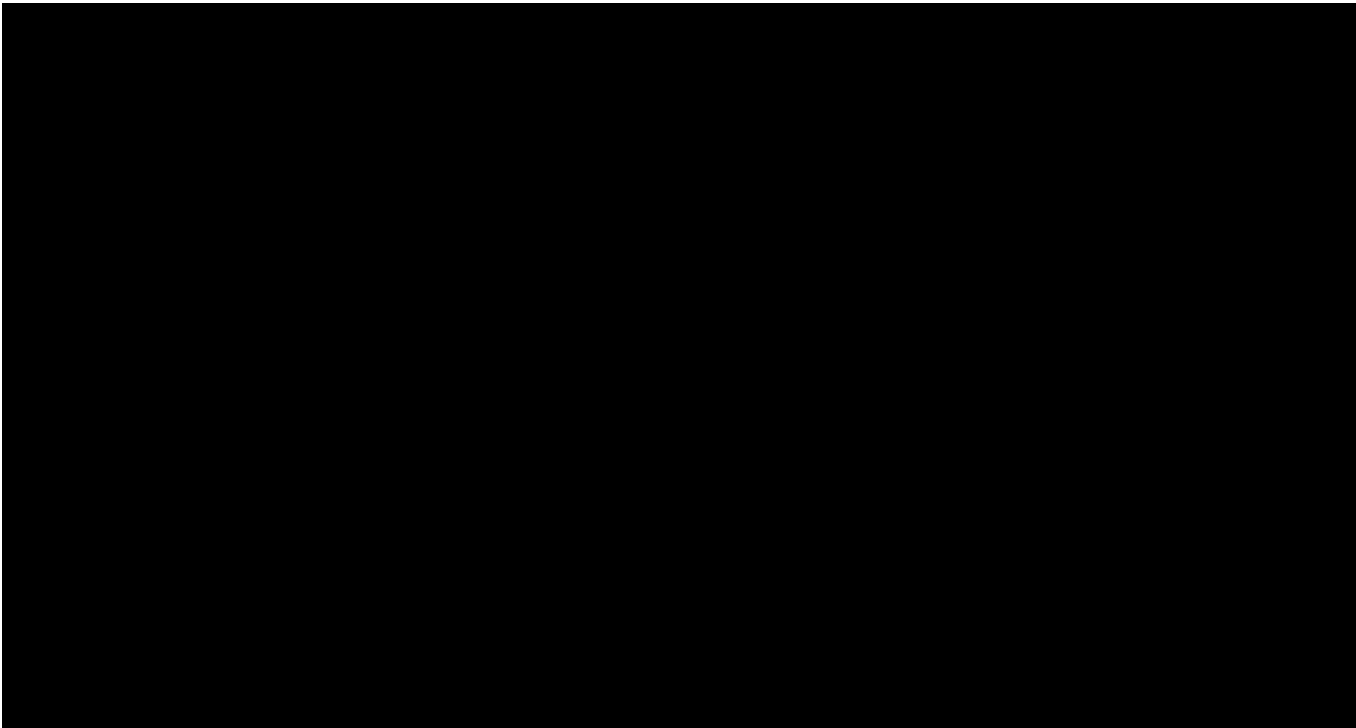
Alteri (1998) asserted that, the forests are the source of green spirit where traditional rituals are gathered. Among the Kesharpur of India studied by Human (2000), the villagers have made a shrine to the goddess '*Durga*', where villagers often perform a *puja* – an act of religious devotion, thus important on spiritual dimension to the environmentalism of the core activists in the forest. In Southern Africa, 70% of the people eat the fruits of the marula tree which is a seasonal staple in local diets. The kernels of the marula fruits are rich in oil and protein and contain eight times more Vitamin C than oranges. Without this fruit many people particularly children who are most vulnerable would suffer dietary deficiency diseases such as kwashiorkor and pellagra (Chenje, 2000). In Tanzania, wild vegetables and plants appeared in 32 percent of all meals. Although these villages cultivated vegetables, they preferred wild tree leaves which are seen as replacement for meat and fish. These wild leafy vegetable contain high quantities of proteins, calcium and vitamin A. Inventories of wild species utilized by rural communities indicate great opportunities for improving food security. In Swaziland for example, over 200 wild plants are routinely collected for food. Throughout Saharan and Sub Saharan Africa, at least 60 wild grass species are harvested for food (Chenje and Johnson, 1998).

Resource Valuation

Natural resource valuation comprises a suite of techniques aimed at putting monetary values on natural resources as a means of demonstrating their worth. There is a range of applications of natural resource valuation, but the ultimate aim of many is to promote sustainable use of the resources and prevent degradation. Natural resource valuation however enables assessment of alternatives by using a common currency and assisting decision-making regarding policy frameworks and in the allocation of scarce resources. Increasing attention is being paid to the valuation of forest resources in the tropics with major focus on tropical rain forests. Few studies have however focused on the tropical savannas, and in recent times there have been several case studies that placed monetary values on secondary resources from woodlands and forests (Peters et al., 1989; Butler, 1992; Chopra, 1993; Campbell et al., 1997; Shackleton and Shackleton, 2000; Dovie et al., in press). Thus the monetary valuation of secondary woodland and forest products could be an effective incentive for conservation, and reducing land-use and land-cover transformation.

In a complete survey of the economic value of land-based livelihoods (i.e. harvesting of NTFP and agro-pastoralism) directly used by the people of Thorndale, important principles and relationships were established. With the aim of determining the precise contribution of all livelihood sectors to rural households, the relative value of land-based livelihoods was 57.5% as against 42.5% by cash income streams, representing US\$1665 and US\$1228 per household, respectively in 1999 across all households (Dovie et al., 2001).

Every household in the village was involved in the harvesting of some NTFP. The direct-use value of NTFP to households was estimated at \$559 per household per annum, representing 19.4% of total contribution by all livelihood sectors. The five resources that exhibited highest direct-use values were fuel wood \$311, wild edible herbs \$183, thatch grass \$75, weaving reeds and mats \$60 and medicinal plants \$41 per user household in 1999. Other studies have reported similar important values (e.g. Ayuk et al., 1999; Dzerefos et al., 1999; Shackleton et al., 2000a, 2000b).



Source: Adapted from Dovie et al., 2001

Figure 1: The Monetary Value of Some NTFP per Household per Annum

Livelihoods and Non Timber Forest Products

Livelihoods connote the means, activities, entitlements, assets by which people do make a living through natural or biological means (i.e. Land, water, common property resources, flora, fauna), social (i.e. community, family, social methods, participation, empowerment) and human (i.e. knowledge, creation of skills) and are therefore paramount to the debate on sustainable development. Consisting of resources and capacities, the sustenance of livelihoods could make a significant contribution in alleviating or eradicating poverty whilst protecting environmental resources (Dovie, et al., 2001). The basic components of this process are resilience, social equitability, efficient economic productivity and maintenance of ecological processes. To enable humans to sustain their livelihoods in the absence of government interventions, many people tend to adopt various strategies that lack capacity development. However, capacities are an important component for sustaining livelihoods notwithstanding the fact that few people in developing countries are likely to have access to formal education. To effectively involve communities in livelihood projects therefore demand for the provision of knowledge and skill, considering that livelihood processes are not static.

Locally or regionally consumed secondary forest products and resources account for the great majority of forest species collected and used, and a very significant percentage of the potential and actual value of forests (Padoch, 1992; Godoy and Bawa, 1993). In the last decade, resource valuation studies have been superimposed on inventories for understanding the context of resource use and livelihoods (Campbell, 1987; Peters et al., 1989; Chopra, 1993; Phillips and Gentry, 1993; Shackleton, 1996; Campbell et al., 1997; Shackleton and Shackleton, 2000). NTFP are important and a significant part of the

economy of many countries especially in sub-Saharan Africa, providing an effective incentive to conserve ecosystems through involvement of local people in conservation outside of Protected Areas. Though underestimated in national economies and resource accounting, it is an acknowledged fact that rural people have relied on NTFP for centuries yet we know little about the extent of use, availability and sustainability of the products (Godoy and Bawa, 1993; Hammett and Chamberlain, 1998). Though botanical, zoological and anthropological studies have touched on people's use of secondary forest resources for many years, the issues of sustainable harvesting and implications for management and livelihoods have emerged only in recent times. Many studies and investigations have demonstrated that these resources are important over a wide range of systems, and they have been incorporated into the livelihood strategies of most rural people (Scoones et al., 1992; Emerton, 1996; Statz, 1997; Campbell et al., 1997; Cunningham, 1997; Dounias, 2000; Shackleton, et al., 2002, in press). Elsewhere in Africa, building of manpower for women to sustainably utilise environmental resources have been documented (Chikoko, 1999). The lack of attention paid to most NTFP might have emanated from the inadequate involvement of local and indigenous people who are highly knowledgeable of their microenvironments. A tradition of cultural myopia must have also denied the appreciation of the capability of such people.

OBJECTIVES OF THE STUDY

- To assess the contribution of *masawu* as a livelihoods enhancement strategy.
- To examine the opportunities and challenges in *masawu* production and trading.
- To suggest possible strategies for improving the contribution of *masawu* fruit to the livelihood strategies of the Dande community.

CONCEPTUAL FRAMEWORK

Sustainable Livelihoods Approach

The term sustainable livelihoods relates to a wide set of issues which encompass much of the broader debate about the relationships between poverty and environment, (Scoones, 2000). Chambers and Cornwall, (1980) state that livelihoods comprise of the capabilities, assets (both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with, and recover from, stresses and shocks and maintain or enhance its capabilities and assets both now and in the future. In an attempt to make a living, people use a variety of resources such as social networks, capital knowledge and markets to produce food and marketable commodities and to raise their incomes, (Herbinck and Bourdillon 2001). However when such resources are not available or when they are undermined people tend to go under stress and shock. This can be traced to Sen's theory of entitlements, which postulates that the purpose of development is to improve human lives through expanding the range of things a person could do and be, for example, being healthy and well nourished, being knowledgeable and being able to participate in the life of the community. Development is thus about removing obstacles to what a person can do in life for example illiteracy, ill health, lack of access to income and employment opportunities, lack of civil and political freedoms, (Zimbabwe Human Development Report 2003). When linked to the issue of *masawu* fruit, it becomes imperative to understand the concept before one can delve into the lives of the people in detail. In this paper livelihoods will be conceptualized as the sum of ways in which households make ends meet from year to year, and how they survive (or fail to survive) through difficult times, (UNDP 2005). In the case of *masawu* therefore, this framework

will help to understand whether the fruit is contributing to the betterment of the livelihoods of the people in Dande area or not, whether the fruit is being used sustainably or not as well as to evaluate the problems which these people are facing which can result in shock on the part of the people under study.

METHODOLOGY

This was a descriptive survey of the value of *masawu*, a non-timber forest product in Dande area, North Western part of Zimbabwe conducted between 2010 August and 2011 November. Both quantitative and qualitative methodologies were used in this research. A questionnaire was used as the main quantitative tool in soliciting information from villagers and nodal people on the production and trading of *Masawu* fruit in Dande area. Qualitatively, focus group discussions, interviews and secondary records were used to obtain information on the contribution of *Masawu*, opportunities and constraints on livelihood. Dande area has 30 villages, thus given the large number of households that needed to be covered; only 10% was selected through proportional stratified sampling at the first level and systematic sampling of 10% of each stratum. Key informants conveniently selected basing on their knowledge of *masawu* fruit were interviewed like the Environmental Management Agency, Community Management Programme for Indigenous Resources representatives, Wildlife Ministry officials and Provincial Nutritionists. Field observations guided by observation checklists were conducted to establish livelihood development activities in the area. This was done to cover up those homesteads that did not make up 70 households selected as a sample for questionnaire survey. The results from interviews were compared with findings from questionnaires, document analysis, as well as field observations. This triangulation process helped to verify inconsistencies in data. Finally, content analysis was used on qualitative data while quantitative categorical data generated were coded according to themes and tabulated for easy presentation and analysis.

FINDINGS

Marital Status and Educational Levels of Respondents

Table: Marital Status and Educational Levels

Educational level	Single	Married	Divorced	Widowed	Total (%)
Primary	5	15	12	8	40
Secondary	11	5	8	6	30
Advanced Level	8	6	4	2	20
Tertiary Level	3	3	3	1	10
					100

From table 1 above communal people involved in the utilisation of *masawu* decreases with the level of education in Dande area. This finding is supporting the view by Shava (2005) saying indigenous food plants are usually considered inferior and associated with low standard of living. The table also reveals that as people attained high educational qualifications, singles, married couples, divorced and widows are decreasing in the area, probably due to the fact that most of educated people will be in towns looking for employment.

Knowledge and Use of Wild *Masawu* Fruit

Table 2: Knowledge and Use of Wild *Masawu* Fruit

Botanical Name	Common Name	Part Used at Preparation	Period Available	Mark Localities Where Available
Ziziphium Mauritania	Masawu(SH) Umsawu(ND)	Fruits eaten raw, made into jam, or sweet strips	November to February	Harare, Mt Darwin, Bindura, Guruve Growth Point

KEY: Languages: SH-Shona, ND-Ndebele

Knowledge of indigenous food plants species, their distribution, seasonal availability and preparation or use, is widely distributed amongst ordinary people in most rural communities of Dande. However, knowledge of wild food plants varies between communities and within specific local communities (for example between men and women, and between different age groups). These differences are an indication of cultural diversity in Zimbabwe.

Percentage Ranking of Benefits /Use of *Masawu*

Table 3: Percentage Ranking of Benefits /Use of *Masawu*

Benefits/use	Very Important	Important	Limited	Not Sure	Not Important	Total (%)
Food	60	20	11	6	3	100
Income	58	31	6	4	1	100
Employment	30	25	30	20	5	100
Livestock /wildlife foliage	40	40	20	0	0	100
Medicine	30	40	25	0	5	100

The table 3 above reveals that the majority confirmed that *masawu* fruit is significant to the lives of the Dande people giving them food, income, employment, food for their livestock; and wild animals that used to disturb their stored harvests in winter like baboons and monkeys. It is of importance to mention the fact that *masawu* is medicinal in nature in the Dande area in the sense of giving appetite and reducing stomach pains as herbalists in the village portray.

Masawu usage for consumption takes place throughout the year, but tends to exhibit seasonal peaks that do not necessarily coincide with peak production. Research suggest that maximum collection takes place at the end of the rains (April) and

continues sequentially through the hot, dry season. This implies that taste, rather than food scarcity *per se*, is a determinant in this pattern. In periods of drought this pattern is changed, with collection intensifying in the late dry and early wet seasons (September-December) when food stocks are low and new crops have yet to be harvested (Muir, 1993, Clarke, et al, 1996). The current skyrocketing global food prices due to poor harvest resulting from climate change, rising demand for bio fuels and market speculation (Development and Cooperation, 2008; Chibisa, and Rwizi, 2009), means that rural communities in Southern Africa will become more dependent on forest /woodland food sources. *Masawu* fruit has also non-consumptive spiritual and cultural functions. Taboos that are given on the utilisation of *masawu* tree and fruit actually reveal their importance in preservation and conservation of the natural environment. Properly preserved places would be considered sacred and used for rainmaking ceremonies and burial sites for village heads that would have succeeded in taking custody of the village culture. Wild *masawu* fruits also forms an important supplementary source of protein, calcium, iron and vitamins. *Masawu* is used to make beer or wine, and porridge for the household (Grundy et al, 1993, FAO, 1995, Mc Cullum, 2000; Odero, 2004). The beer would be used in different ways. Some would sell to generate income for school fees, clothing or purchasing of agricultural inputs. Others revealed that they use this beer for cooperative work in the community (*nhimbe*) for community development. In traditional rainmaking ceremonies (*mukwerere*) the Dande people advocated for this type of beer since the area is highly endowed with *masawu* fruit than other beer inputs.

OPPORTUNITIES AND CHALLENGES

An enterprise, Musingagotsi *Masawu* Enterprise use *masawu* wild fruit. Since 2001, this community based enterprise in Centenary had been formulating and packaging dried *masawu* pulp in a variety of ways to produce a range of snacks. The delicious sweet and sour taste of the *masawu* fruits generated a lot of interest in the products when first introduced in the market. The fruit enabled poor rural communities in Dande to generate income through the sustainable utilisation of the products. PhytoTrade Africa is a non-profit trade association operating in Dande that promoted sustainable production and fair trade, contributing to the economic development of Southern African countries. PhytoTrade help African rural producers develop and market their natural products for export. It provides marketing, technical advice, research and development and advocacy services for the rural people in Dande. Clients can be linked directly to source suppliers, quality control assurances, and ecological products profiles and receive help with import /exports regulation and contracts.

Southern Alliances For Indigenous Resources (SAFIRE) has helped create linkages with Speciality Foods of Africa (SFA), provided training in business planning and management that have helped to meet some of the challenges the group faced (SAFIRE, 2003). These interventions have had positive effects on the enterprise performance. In 2003, the enterprise raised close to ZWD 2 million from sales. However, despite this positive result, there was still a shortfall of some 7000 packets of *masawu* slices supplied to the market. SFA and SAFIRE have continued to support the group's development by providing marketing and quality control services as well as promoting business ethics. SFA buys the fruit direct from communities in Zambezi valley with the assistance of SAFIRE. Speciality Foods for Africa and SAFIRE's cooperation ensures that a fair price is paid to the communities and that the highest quality fruit is used for the jam (www.safireweb.org)

The Southern African Natural Products Trade Association –PhytoTrade Africa is facilitating the creation or identification of markets for natural products, establish an effective institutional framework for market information exchange between member organisation and the affected communities and also facilitate research and development efforts in the identification and sustainable utilisation of natural products. According to the Speciality Food for Africa website, the company works with villagers to ensure that fair trade agreements are established with rural producers and raw materials are harvested sustainably. Both are members of Southern African Natural Products Trade Association (PhytoTrade Africa), a representative body for small-scale producers in the natural products sectors in Southern Africa. Its mission is to develop a long-term supplementary income source for poor rural people in the region, so enabling them to improve their livelihoods from the sustainable exploitation of natural products.

The civic organisation, SAFIRE, which focuses on community development using non-timber forest products, works with the local community in the processing and harvesting of such products for commercialisation of *masawu* jam. In addition to the commercial application of local community knowledge on indigenous food plants, such aspects as their nutritional value will also enhance their use and valuing of these plants thereby boosting conservation spirit among the locals.

Factors Hindering Sustainable Utilisation of *Masawu*

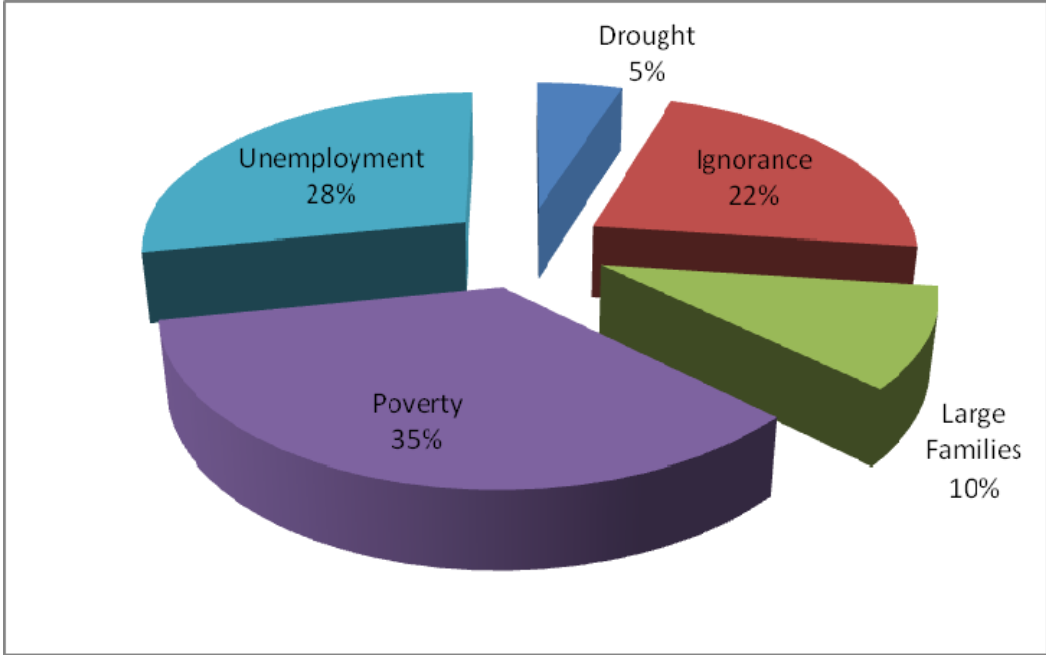


Figure 2: Challenges to *Masawu* Utilisation in Dande

Although the taboos and other modern conservation measures by Environmental Management Agency are in place, persistent poverty in the area is the major challenge affecting harvesting and utilisation ethics due to competition. This factor is followed by rampant unemployment due to the economic down turn in the past fifteen to twenty years Zimbabwe was in, ignorance as others are taking it as fruit for the wild animals thereby affecting proper utilisation. Lastly, droughts especially the 1992, 2002 has even resulted in almost all provinces flocking into Dande for this fruit resulting in the tragedy of the commons. Apart from the above challenges, indigenous food plants are usually considered inferior and associated with low standard of living. In order to remove this low, self-esteem with regards to our local food plants, there is need to present them in a state that is acceptable in current food markets. This involves processing them to commercial standards in order for them to be promoted and marketed effectively.

CONCLUSION

The view that *masawu*, a non-timber forest product in the dry land of Dande is for the less privileged and wild animals and the fact that it is not taken aboard when it comes to national economic contribution have been demystified. The social, economic and cultural significance of *masawu* have proved to be a livelihood resilient strategy through its utilisation. Civic organisations like PhytoTrade and SAFIRE has strengthened the sustainability of the fruit utilisation through facilitating the creation or identification of markets for natural products, establish an effective institutional framework for market information exchange between member organisation and the affected communities and also facilitate research and development efforts in the identification and sustainable utilisation of natural products. Therefore strengthening the synergy between the Dande people and civic organisation would internationally market the utilisation of *masawu* although challenges like persistent poverty, drought should not go without being mentioned. Institutional sustainability need to be strengthened through participatory action, learning and innovation to combat rural dry land challenges.

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