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Indigenous Knowledge System Best Practices from Namibia: The Case of Oshikundu Processing Methods

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ABSTRACT

In recent years there has been increasing recognition by researchers, governments and development agencies That Indigenous Knowledge System (IKS) is one of the sources of knowledge which can be easily understood, accessed and useable to, particularly, people and communities in developing countries. Namibia, as a developing country is no exception in this case. The aim of this study is to present the production processes of oshikundu, a traditional fermented beverage in northern Namibia and to identify the practices that have potential for commercialization. The general IKS best practice protocol of the United Nations Educational Scientific and Cultural Organization and the Netherlands organization for international cooperation (known as Nuffic) will be used to evaluate the production processes that would lend oshikundu for commercialization. The research was carried out in the four "O" northern central regions of Namibia, where the majority of the inhabitants live in rural areas and where they produce and drink oshikundu in the traditional way. The results will be used to draw conclusions, implications and possible applications of how the oshikundu can be processed better and possibly made accessible in modern shops without changing too much its traditional taste.

Key words: Oshikundu, eaWambo traditional beverage, pearl millet, Indigenous knowledge system technology, Namibia

INTRODUCTION

Oshikundu is a cereal-based fermented beverage drink common among the eaWambo people of north-central regions of Namibia namely; Oshana, Omusati, Oshikoto and Ohangwena. The drink is a cereal bases beverage made from mahangu; pearl millet (*Pennisetum galucum*) and Sorghum (*Sorghum bicolor*). North-central Namibia is a semi-arid environment and mahangu is well-adapted to the local environment. The eaWambo have therefore developed the use of mahangu and sorghum flours for oshikundu to suit their cultural life style (Fujioka, 2010). The knowledge and skills to adapt mahangu and sorghum for oshikundu was learnt from one generation to the other through the ages. This body of knowledge is generally referred to as Indigenous Knowledge System (IKS). IKS is therefore specific to each and every community and locality.

At community and local level, IKS is held and practiced by peasants and individual members of each family and passed over from one generation to the other. In all traditional societies IKS is developed and adapted over the years (Zwahlen, 1996). In all societies, including Namibia, IKS constitutes the socio-economic fabrics of an indigenous people. Other forms of IKS are among others: philosophy, religious beliefs, mathematics, astronomy, culture, geo-science, navigation, etc. oshikundu and other similar IKS products constitute and it signifies the ability and ingenuity of the indigenous communities in Namibia, and the world over, to transform and harness their natural environment for their benefits (Hountondji, 1997). Oshikundu processing is therefore a derivative form of Indigenous Knowledge Systems Technology (IKST). This form of technology has evolved over time. Oshikundu as a form of IKST and its production techniques has been adapted in line with the cultural and societal changes that occurred in the traditional societies concerned (Doussou, 1997).

Oshikundu is still a popular drink in north central Namibia. Like IKS, oshikundu is produced traditionally by and available in every household in this area (Mu Ashekele, 2005). However, as many of the inhabitants in this area migrate to live in towns and cities throughout Namibia, they also take their habits with them, including the drinking of oshikundu. In the towns and cities the migrants will not find oshikundu. The reasons behind that the producers of oshikundu in the rural areas, of the north central, are not able to supply it as a ready-made drink, to the towns and cities in its current processing form. At the moment the shelf-life of oshikundu is not more than six hours. For oshikundu to reach the customers in towns and cities the shelf-life has to be longer and its taste should not differ significantly from what they come to associate with it. The changing times are demanding the flexibility and adaptation in, particularly, the production and supply techniques of oshikundu.

On the other hand, the legacy of African colonization provided the framework of organized subjugation of its culture, science and economic life (Esteva, 1992; Hoppers, 2002). This form of subjugation negatively affected the development and transfer of skills in the processing of oshikundu. Mashelkar (2002) believed that African knowledge and innovation is too theoretical and is not amplified for use by the ordinary artisans, traditional healers, food producers and merchants. This view is also supported by Hountondji (2002), who is of the opinion that African research and science should be driven by an African agenda to focus and address African problems. In the past two decades, policy makers have taken interest to incorporate IKS as an integral part of the community development process (Martin *et al*., 2012). Briggs (2005) is of the view that the development of IKS is an alternative way of promoting development in many parts of the world.

The current traditional processing techniques of oshikundu will be assessed for their development potential using the Best Practices (BP) criteria developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Netherlands Organization for International Cooperation in Higher Education (Nuffic) (Nuffic, 2001). The BP criteria for IKS has different key characteristics are shown in Table 1.

Table 1: Key characteristics for UNESCO and Nuffic IKS best practices criteria

IKS Characteristics	Explanation
Should be innovative	Addressing poverty and social exclusion
Should make a difference	Having a tangible impact on the living conditions of a particular community
Should has a sustained effect	Strong impact on poverty reduction
Should be able to be replicated	To serve as a model or inspiration

A previous study on the best IKS practices from Namibia has been reported (Martin *et al.*, 2012), which discussed in general the most popular IKS practices in four Namibian regions namely; Omaheke, Omusati, Oshikoto and Kavango. However, the current study is therefore a follow-up study which focuses more in details on, oshikundu, one of the most popular traditional drinks in the northern regions of Oshana, Omusati, Oshikoto and Ohangwena. The aim of this study is to present the traditional processing/production of oshikundu and to compare the oshikundu processing methods against the BP criteria developed by UNESCO and Nuffic. The transition status of this beverage and its socio-economic values were also reported.

MATERIALS AND METHODS

Study area: This study was conducted in the four north-central regions of the thirteen political regions of Namibia. These are the Oshana, Oshikoto, Omusati and Ohangwena regions (Fig.1). The reasons are that oshikundu is produced and used as a popular beverage drink in these regions. Geographically, these regions are semi-arid and are suitable for mahangu and sorghum cultivation. With Omusati to the north-west, Ohangwena to the north-east, Oshana to the south-west and

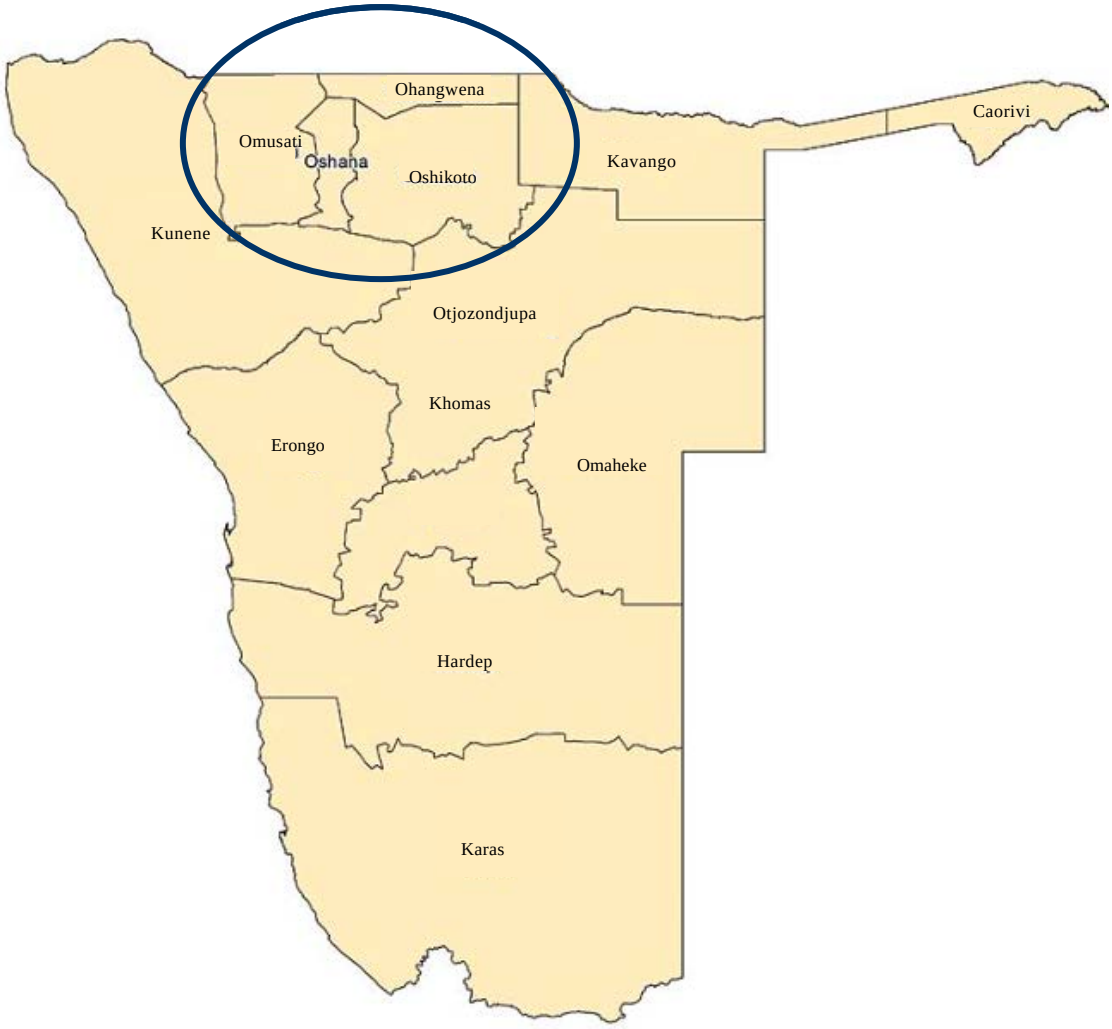

Fig. 1: Map of the study area showing Namibia and the 4 "O" Northern regions

Oshikoto to the south-east. Those regions were selected because of their similarities in cultural, linguistic and plant bio-diversities. Furthermore, the regions have a great deal of socio-economic similarities which were considered in selecting the study area. These regions are also predominantly, rural where the majority of households are subsistence farmers and whose livelihoods are currently in endangered because of rapid emigration of the rural population to the new established urban areas in these regions. This population shift to urban areas has put the use, supply and livelihood on oshikundu as well as its social practices under threat.

Household processing methods: The implementation of the field work was coordinated by the Science, Technology and Innovation Division at the Multidisciplinary Research Center (MRC) of the University of Namibia. The data was collected from the field by MRC research staff members through the use of questionnaires. The data was collected through interview with the key-informants who have the IKS processing knowledge of oshikundu. Key-informants, as respondents were women between 15 to 60 years of age, because, traditionally, up to this day, it is the role of women who prepare mahangu flour as well as oshikundu. The respondents were randomly selected in a particular village of each specific region. Respondents were interviewed alone in their respective households.

The questionnaires were written in local Oshiwambo, vernacular and English, focusing on the ingredients (raw materials), additives, social values and shelf-life. This was conducted in the four regions of: Oshana, Oshikoto, Ohangwena and Omusati while making sure that all the seven sub-eaWambo tribes; (eaKolonghavi) eaKwaluuvi, eaKwambi, eaKwanyama, eaMbaanhu, eaNgandjela, eaNdonga) are represented. oshikundu is brewed using mahangu; pearl millet (Pennisetum galucum) and Sorghum (Sorghum bicolor) flour, water and brans (additive).

UNESCO and Nuffic IKS best practices criteria (BPC): This study is a follow-up on IKS baseline work that was carried out in Oshikoto, Omusati, sOmaheke, and Kavango regions (Mu Ashekele, 2005) and the benchmarking of selected Namibian IKS to UNESCO-Nuffic IKS best practices (Martin *et al*., 2012). In the benchmarking study oshikundu was identified as one of the Namibia IKS practice with potential for commercialization (Martin *et al*., 2012). In this study the traditional processing practices of oshikundu is benchmarked to the UNESCO-Nuffic IKS best practices criteria. The UNESCO-Nuffic IKS best practices criteria is a tool to identify IKS practices and enhance their sustainability and development potential, for the poor, through innovation and transformation. The main elements of the UNESCO and Nuffic IKS Best Practices criteria (IKSBPC) are represented in Table 2. The traditional

Table 2: Main elements of the UNESCO and nuffic IKS best practices criteria (IKS BPC)

IKS best practices criteria elements	Properties
Title	Title of the practice
Theme	Theme or subject of the practice
Introduction to the practice	Location, local context, social features, time of the year when practice takes place, is it still in demand/relevant to the community/customers?
Context and approach	Purpose, how it is implemented? Who participate? What is it for?
Role of IKS	Specific IKS features, relation to community values, already recorded? How does knowledge transfer takes place?
Achievements	Qualification features as Best Practices? - giving attention to: sustainability, innovativeness, cost effectiveness, strengths, weaknesses, opportunities and threats (SWOT) of practice, lessons learnt, potential for fostering development/ commercialization)
Source of inspiration	Possible replication in part or whole, community participation important

household production methods of oshikundu in the four northern regions of Namibia will be compared to the UNESCO and Nuffic IKS BP Criteria.

RESULTS AND DISCUSSION

Oshikundu processing methods: The main ingredients for oshikundu are: water, mahangu flour, small amount of sorghum flour, oshihete shoshikundu (starter culture which is a little amount of already fermented oshikundu left from previous day).Water is first boiled separately and added to the mahangu flour while being stirred. After stirring, the mixture is cooled and the small amount of dry sorghum is added afterwards. Water is added for a desired volume and thickness of oshikundu. A previous fermented oshikundu is added as a starter culture and let to ferment for 4-6 h and kept in shading area of the house.

Benchmarking oshikundu production methods to UNESCO and Nuffic protocol: The comparison of the Oshikundu traditional household processing methods with UNESCO and Nuffic Protocol is shown in Table 3. The purpose of the general BP of UNESCO and Nuffic Protocol is to assist researchers, planners and policy-makers to include important and relevant IKS practices in their development agenda (Boven and Morohashi, 2002). The criteria offer a quick and simple method to checklist elements of the traditional practice which should be looked at to ensure greater impact of the IKS practice. In Namibia the purpose of the benchmarking oshikundu processing methods against IKS BP criteria is to develop and establish a strong and reliable foundation for its traditional practices, methods and skills. This foundation would enable the local traditional producers in rural areas to process and supply oshikundu to all their customers throughout the country on commercial basis. The theme of practice presented in this study varied from one region to another because of the differences in their vernacular languages, e.g. Ontaku (Oshindonga) in Oshikoto region and oshikundu (Oshikwanyama) in Ohangwena region. The Oshikundu production practice is more popular during the winter season whereby less rain is received in these areas. It was observed that raw materials purchased from the open markets, give oshikundu different taste and flavor from the original one in the rural areas. Oshikundu production practice is based on each household separately and it is available around the year. It is considered as token of welcome and hospitality. Communities should be engaged in the processing methods to foster commercialisation process in bigger town. Royalties and Intellectual Property Rights (IPR) should be shared with these communities.

Oshikundu socio-economic values: Oshikundu is a popular traditional beverage in north central regions of Namibia. The drink is a non-alcoholic and is culturally used as a home drink for both elderly and children alike. Oshikundu is regarded as a soft drink and it is very nutritious, especially, for babies and children alike. oshikundu is processed in every household in these regions. It is offered for free to every visitor to any household as a gesture of good will and acceptance. A household that does not offer it to the visitors is considered unkind or perceived as stricken with poverty. They indicated that it gives energy and forms an important part of daily diet. Its social values also include the importance of being served at weddings and other important ceremonies as well as at every day social interactions. Over a calabash or a cup of oshikundu a visitor and his/her host, would sit, discuss and exchange the knowledge of the current affairs of the village.

As many people move from rural areas to towns, they take their traditions and customs with them. Many unemployed residents in towns have started brewing and using oshikundu as a source of income. It is easy, quick and cheap to make. It can also be made on continuous basis per day.

Table 3: Namibia Best Practice on Oshikundu traditional household processing methods comparison with UNESCO and Nuffic Protocol Criteria

UNESCO and Nuffic protocols region	Theme of the practice	Introducing the process	Context and approach	Role of IKS	Achievements	Source of inspiration
Omusati	Ontaku/Oshikundu Beverage	Brewed all the time. Highly in demand. Children and adults. For social visits	Popular drink made from mahangu and sorghum flours by mothers and daughters, stimulate production of mother's breast milk	Household based by family (mostly mothers) Used as token of welcome	Popular among elderly and breastfeeding mothers. Short shelf life product, there is potential for development.	Popular drink brewed by all household over the year. Involve community for intellectual property rights (IPR)
Oshikoto	Ontaku Beverage	Brewed less during rainy season. Popular among children, adult and elderly	Mahangu and sorghum flours based beverage prepared by mothers and daughters	Household and business purpose by mothers and daughters	Threat in the beverage is the short shelf life, there is potential for development and commercialization.	Practise is based on each household separately and this is available around the year. IPR for community
Oshana	Oshikundu/ Ontaku Beverage	Brewed more from July-January. Popular among different age customers	Popular drink made from mahangu and sorghum flours by mothers and daughters	Household and business purpose by mothers and daughters	Raw materials purchased from market, short shelf life beverage with potential for further research and for further research and development	Practise is based on each household separately, available around the year.
Ohangwena	Oshikundu beverage	Brewed more between June-December. Highly in demand. For children, breast feeding mothers and during social visit	Mahangu and sorghum flours based beverage prepared by mothers and daughters	Household purposes by daughters, Gesture of welcome	Most stock but only a few who are near the market.Community should be engaged in the processing methods to foster commercialisation process in bigger town. Royalty should be shared with the community.	Popular drink brewed by all household over the year. IPR for community

There are no significant variations in the oshikundu processing methods among the sub-eaWambo tribes. Commercializing the production of oshikundu would guarantee the utilization of local traditional resources, preservation of culture, jobs creation for subsistence farmers and the reduction of poverty. What is left is to identify the principles behind the traditional processing technologies which can guarantee its longer shelf-life while at the same time insuring the same traditional taste that users are used to.

Oshikundu production methods in transition: All technologies are originally developed in particular societies to address a particular problem in that specific society. This is true for IKST and respective traditional societies out of which they are born. The social needs, the social practices and the geo-environmental conditions constitute a socio-economic operating context of an IKST in each society (Mu Ashekele, 2005). Through social rules and practices each society created mechanism to pass on IKS technological skills to future generations. The production technologies and methods of oshikundu are therefore born out of the social needs, practices, rules and living environments of the eaWambo societies who habitat the current geographical areas of Omusati, Oshana, Ohangwena and Oshikoto regions. Through the ages the oshikundu production methods were perfected through practices and innovation of new ideas and experimentation with new technologies. Even now, the traditional training or initiation of young girls into womanhood includes the making of oshikundu. At a young age the future generations were trained in the provision of oshikundu products which are crucial for maintaining the hospitality practices among eaWambo communities.

On one hand, it is quite clear from the study that the socio-economic changes which colonialism and emigration to towns, brought about destroyed the viability of the indigenous operating context, particularly, among the young. On the other hand, imported western technologies have not yet established operating social context. The impact of colonialism on IKST is the mismatch between a western ways of life (the social context) which the young people aspire to emulate, and the indigenous technological context, which provides IKST exposure, but which, the young people want to leave behind. Many indigenous young people, who emigrate from rural areas to towns throughout Namibia, are unemployed because they lost/missed relevant indigenous skills to implement indigenous technologies and they accumulated western skill-base sufficient to operate in westernized (colonization) technological operating context.

The longer western (colonial) influence continues in Namibia, the more the mismatch. On the other hand indigenous people can never become Europeans however much they try the western way of life. The best way out is to understand, develop and commercialize indigenous technologies (including oshikundu) as well as assimilating western technologies into the indigenous technological operating context. Inadvertently, this will close the gap between the indigenous and western operating context in terms of technological performance (Gupta, 1999). The more the research and development is concentrated on IKST, the more local products and markets which are indigenous and the more jobs you have locally. This study is in agreement with Grenier (1998) who reported on the powerful effects of colonization on indigenous peoples worldwide of which this colonization adversely affected physical, social, emotional and mental health and wellbeing in traditional societies. The extrapolation between different groups (indigenous and western) is unwise because local circumstances differ greatly (Gracey and King, 2009).

CONCLUSION

This study showed the potential of Oshikundu process as one of the important indigenous practices in the Omusati, Oshana, Ohangwena and Oshikoto regions. Oshikundu is a cereal based beverage made from Mahangu and sorghum flours. There are no significant variations in the oshikundu processing methods among the sub-eaWambo tribes. Benchmarking oshikundu production methods to UNESCO and Nuffic protocol was performed and shown relevance potential to incorporate oshikundu brewing in sub-eaWambo tribes' development process.

Oshikundu is an important part of the traditional and cultural heritage of eaWambo and it therefore need to be recorded and preserved for the future generation. Currently, a number of traditional women produce and derive their income from the brewing and sales of oshikundu. In the future, any commercialization plan has to find a way of incorporating community benefits in the development process. The traditional practice of brewing oshikundu has its own advantages and disadvantages; therefore more research needed to be conducted for scientific validations before incorporation into the communities' development processes in Namibia.

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