Perspectives on Sustainable Development in Zimbabwe

Edited by

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PREFACE

Any discussion on sustainable livelihoods provokes intense debates around the meaning of the concept and what it entails for communities across the world. Many studies and academic works on sustainability tend to focus on how business relates to environmental protection. In this book, we take a major departure from these debates focusing rather on various multi-dimensional aspects of sustainable development embedded in social contexts of Zimbabwean communities. The authors in this book draw from diverse academic disciplines to provide a nuanced understanding on sustainable livelihoods. The debates are backed up by research in the everyday experiences of Zimbabwean people and focuses on issues aroung gender, food security, indigenous knowledge systems, language, livelihood complexities and resource management. The book thus contributes to continued efforts towards sustainability in Zimbabwe. It provides key lessons and knowledges from community practices which can assist in policy formulation and programme implementation for government and civil society organisations.

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CHAPTER 1: INTRODUCTION AND BACKGROUND

Manase Kudzai Chiweshe

Overview

Concerns with sustainability, however defined, form an important part of academic endeavours in 21st century scholarship across the world. The concern with sustainable development stems from the belief that countries that do not implement measures to curb environmental degradation are destroying their futures. An increasing number of environmental problems, such as climate change, are continuously threatening human existence. Diverse livelihood challenges exist for the majority of people living in Africa. These challenges range from being economic to being environmental, social and political in nature. Thus, the challenges pose a threat to the sustainability of livelihoods of millions. This book is built on a multi-disciplinary effort to provide an understanding of sustainability within a Zimbabwean context. It is based on a rethinking of the concepts and processes of sustainability and aims at providing a nuanced analysis of how the environment intersects with people's livelihoods. The book is a collection of chapters based on a multi-disciplinary approach to sustainability and livelihoods. It provides insights into Zimbabwe in the post-2000 period. Post-2000 Zimbabwe underwent a socio-economic downturn characterised by food shortages, high unemployment and the deterioration of standards of living, high inflation and subsequent suspension of the country's currency. Environmental degradation is not a new phenomenon in Zimbabwe, and it is not only perpetrated by the poor. Historical capitalist exploitation in colonial and post-colonial Zimbabwe has led to many instances of environmental degradation including air and water pollution. The book uses various theoretical lenses and focuses on different aspects of Zimbabwe's sustainability question.

The theoretical and empirical focus of the book provides a unique perspective on sustainable development steeped in a socio-cultural framework. Debates on sustainability have largely been couched in scientific and technological language which tends to sideline socio-cultural dimensions. We believe such a narrow scientific approach does not provide a holistic understanding of particular resource constraints, opportunities, endowments, the specific cultural and socio-economic circumstances and physical environmental

contexts of Zimbabwe. There is a need to harness both the hard and soft sciences to create synergies that foster a multi-disciplinary approach to sustainability. Thus, in this book we provide the sociological, socio-cultural and political aspects of sustainability. It is possible within this framework to question specific myths relating to environmental degradation. One such myth is how many international reports claim that poverty is a major cause of environmental degradation, including the World Commission on Environment and Development's Report, Our Common Future UNEP's Geo 2000. Yet global consumption and lifestyle patterns show it is the wealthy that degrade the environment with the poor suffering the most devastating effects of this degradation from climate-change-induced disasters including droughts.

Defining sustainability

Within the context of this book we accept the multiplicity and contested nature of sustainability. In defining sustainability, our aim is to show the multi-disciplinary nature of our book. Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the Brundtland Report which states: *'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'* In its everyday usage, the concept has generally been celebrated as a good thing with very little contest over what it means in reality. The concept remains vague in practice and this makes it attractive to almost all sectors of society. The definition provided above suggests that sustainable development has certain key pillars. The United Nations 2005 World Summit Outcome Document refers to the 'interdependent and mutually reinforcing pillars' of sustainable development as economic development, social development, and environmental protection. Saxen and Khandelwal (2010: 60) argue that:

> …sustainability is a process which tells of a development of all aspects of human life affecting sustenance. It means resolving the conflict between the various competing goals, and involves the simultaneous pursuit of economic prosperity, environmental quality and social equity famously known as three dimensions of Sustainability.

Sustainability is thus defined as a balancing act between the three pillars outlined above. What is missing in most definitions is how this balance can be maintained

and which pillar takes precedence. This has led to skepticism with scholars such as Temple (1992 cited in Saxen and Khandelwal 2010:61) noting that: '[The] word sustainable has been used in too many situations today, and ecological sustainability is one of those terms that confuse a lot of people. You hear about sustainable development, sustainable growth, sustainable economies, sustainable societies and sustainable agriculture. Everything is sustainable.'

Within the context of this book, culture has, however, emerged as an important element in development. Some of the chapters in this book highlight how culture can be considered as the fourth pillar in sustainable development. *The Universal Declaration on Cultural Diversity* notes that '...cultural diversity is as necessary for humankind as biodiversity is for nature… [it is] one of the roots of development understood not simply in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence.' Our concern with sustainable development is based on the need to highlight the need to promote sustainable livelihoods. Livelihood becomes sustainable when it can cope with and recover from stresses and shocks, and when it can maintain or enhance its capabilities and assets, while not undermining the natural resource base. Some chapters in this book thus focus on livelihood issues in Zimbabwe. These have to be understood within a framework of sustainability where human economic activities for survival have to sustain the current and future generations.

Zimbabwe's sustainability question

Agriculture in Zimbabwe remains central to household and national food security and for national economic development. The Zimbabwe agricultural sector remains the backbone of the country's economy contributing about 20% of the Gross Domestic Product (GDP) despite the transformation it went through since 2000[1]. About 68% of the population resides in rural areas and depending on agriculture for their livelihoods.[2] However due to various reasons including erratic rains, poor performance of input markets and general economy at large, Zimbabwe is now relegated to a net importer of cereal grains over the last ten years, a country once termed the bread basket of southern Africa. Faced with serious challenges of climate change, the country is still grappling with serious political, social and economic challenges which adversely affect food

[1] https://www.newsday.co.zw/2013/09/19/agriculture-tale-zimbabwes-sleeping-giant/

[2] http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS

security. Over the years, the Government of Zimbabwe has tried various methods on natural resources management. The decentralisation, Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) and centralisation (Parks and Wildlife) processes have been some of the initiatives put in place. Such initiatives have had varied successes, but common to all is that they have failed to ensure sustainability.

Dominant paradigms of natural resource management

The dominant paradigms in natural resource management range from centralised and state-driven forest management regimes towards decentralised and mainly community-based regimes. Economic and political crises in Africa have now discredited service delivery systems based on central bureaucracy, forcing theorists of development administration to shift their focus from hierarchy and control to participation and empowerment. There is vast literature on the governance of resources. It has mostly framed the issue as an optimisation of governance tools given the nature of goods and the kind of collective action problems associated with them (Olson, 1971). Collective action problems arise when goods are subtractive but not excludable resulting in the 'tragedy of the commons' (Hardin, 1968), where resources that all can freely access tend to be overexploited. Yet, exclusion may not normatively be desirable because it deprives people of basic needs and creates costly externalities for which there may not be simple solutions. Local institutions have no real authority to decide on the management of mineral resources. Another challenge is with regard to the stratified communities. In all stratified communities, the interests of some actors are represented, but only inadequately. Lack of political will at the centre to give powers to communities and grassroots organisations is also a challenge to community based management initiatives in the region.

Historical overview of natural resource management in Zimbabwe

Historically, Zimbabwe has largely favoured a centralist approach to resource management with some attempts at grassroots involvement through the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) project. This was a community-based natural resource management system based on participatory methods. In this arrangement, power remained with state institutions at rural district level. Government through agencies such as the Department of Parks and Environmental Management Agency (EMA) has continued to oversee the management of natural resources. The year 2012 saw the emergence of the much-contested community share trusts

to ensure that local populations benefit from their own resources. For more than two decades, Zimbabwe has been implementing strategies that support human livelihoods through the use of natural resources. This has been done within the context of Community-Based Natural Resources Management initiatives (CBNRM). The CBNRM is an incentive-based conservation and development model that is adaptively implemented by and for people who live with and directly depend on natural resources and who, therefore, have the greatest impact on such resources. In this model communities are given rights of access to feral resources and legal entitlements to benefits that accrue from using such resources (Maturure, 2008).

Natural resources remain central to rural people's livelihoods and can safeguard food security (Roe, Nelson and Sandbrook, 2009). Local norms and customs shape people's everyday forms of resource use. Jones and Murphree (2004) note that, in recent years there has been a shift from predominantly centralised natural resource management towards more devolved models known very broadly as Community-Based Natural Resource Management (CBNRM). CBNRM models work to strengthen locally accountable institutions for natural resource use and management, enabling local groups of people to make better decisions about the use of land and resources (Roe and Nelson 2009).

Community-based natural resource management (CBNRM) is a term used to describe the management of resources such as land, minerals, forests, wildlife and water by collective, local institutions for local benefit (Roe and Nelson 2009). CBNRM takes many different forms in different locations and different socio-political and bio-physical contexts. CBNRM may be based on commercial uses of natural resources, such as managing wildlife for local tourism or hunting enterprises, or it may be based on primarily subsistence uses of resources such as Non-Timber Forest Products (NTFP) (ibid). CBNRM is not a new phenomenon. Local groups of people have managed the land on which they live and the natural resources with which they are surrounded for millennia (Roe and Nelson, 2009). Indigenous African communities often developed elaborate resource management systems as have local communities throughout the world (*ibid*). Today, local groups of pastoralists, farmers, and hunter-gatherers throughout Africa maintain many traditional systems of collective natural resource management which help to sustain the livelihoods and cultures of millions of people.

CBNRM has placed emphasis on the role of local community leadership in the management of natural resources. Local leaders such as the District Administrators, chiefs and their headmen, councillors and Ward Development

Committees (WADCO) and Village Development Committees (VIDCO) leaders have assumed importance under CBNRM. As the representatives of the people these local leaders have influenced how natural resources in their respective areas of jurisdiction are utilised, especially towards food security. Studies show that the CAMPFIRE project in Zimbabwe is a typical success story of CBNRM (Murphree, 2000; Murombedzi, 1991). The success of CAMPFIRE as a CBNRM approach lay in its ability to reach out and co-opt the local community through their leadership structures in making decisions on how the wildlife resources could benefit them. This same approach can be replicated in communities where mineral resources occur in abundance. Decisions can be made that income derived from the sale of mineral resources be directed towards food security.

Participation or cooptation: Local people and the governance of resources

It is widely recognised in rural development circles that community participation in the exploitation of natural resources is key to community development which covers food security (Chambers, 1995). Broadly understood, community participation entails the involvement of local members as individuals or through designated leadership structures in formulating decisions and implementing strategies that affect the community. In a community development process, there are at least four types of public participation: public action, public involvement, electoral participation and obligatory participation (Langston, 1978). By examining these differences, we can better understand the community development process and its relationship to and use by CBOs and local governments. From this comparison, public action fits closest to the community development process model. In this type of public participation, the activities are initiated and controlled by citizens, with the intent of influencing government officials and others. Public involvement and obligatory participation, on the other hand, are initiated and controlled by government officials. Yet this type of public participation is growing and can have a meaningful impact on the quality of life, and may ultimately lead to community initiated effort.

In the community development process model, the role of public participation may start with public action and shift to public involvement, depending on the organisational context and "ownership" of the process. Generally, public action is the category of public participation on which community-based organisations (CBOs) focus. Arnstein's (1969) "ladder of public participation" is a useful framework for understanding the role of CBOs in public participation. This ladder has eight "rungs" divided into three sections that illustrate degrees of participation and public power. Arnstein argued that

power and control over decisions are necessary ingredients of "real" public participation. The lower two rungs are non-participatory participation and are called manipulation and therapy. Examples include public or neighbourhood advisory committees or boards that have no authority or power in controlling projects or programmes but simply represent a way of venting frustration.

Gendered dimensions of natural resource management

Women have, however, faced cultural and historical impediments in participating or benefiting from resource extraction and consumption. Zimbabwe women constitute 52% of the population yet remain outside the control of key resources. In the 2004 National Gender Policy, there is a goal which seeks to increase the level of women's participation in the main stream economy to 50% in all sectors. Thus, there is a need for a gender analysis to evaluate where women are situated in terms of natural resource management. Women only occupy a small fraction of the extractive industries in Zimbabwe. Kahari (2012) argues that women only own an estimated twenty percent of the mining concessions. The industry is dominated by foreign- owned companies. However, government recently started to acquire fifty-one percent stake in foreign-owned companies through an indigenisation programme. The fees for exploration and ground rentals are prohibitively high for the majority of women to get involved. For example, the registration charges for platinum and diamond claims are US$2.5 million and US$5 million, respectively. Many women are however joining artisanal mining and gold panning. Most of these operations are however illegal.

Nemarundwe (2001) notes that with CBNRM programmes such as CAMPFIRE in Zimbabwe had more of co-option of local villagers in state structures through both law and use of force in extension. CAMPFIRE was an external imposition which replaced and competed with already existing institutions at the grassroots. In the literature, there is a glowing appraisal of how the project ensured participation of locals yet in partriarchal communities it is curious how women were integrated into the various committees and processes. CBNRM initiatives have often been based on idyllic images of "community" assuming homogeneity and fixity in an otherwise complex and dynamic world (Nemarundwe, 2001). Communities are gendered, aged, classed and politicised to the extent that they are highly differentiated entities.

Rethinking sustainability in an African context

Sustainability means the capacity to maintain some entity, outcome, or process over time. The concept of sustainability raises a starkly basic question: can

human activity successfully maintain itself and its goals without exhausting the resources on which it depends?[3] The Brundtland Report notes that 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987:43). The field of sustainable development can be conceptually broken into three constituent parts: environmental sustainability, economic sustainability and social sustainability. The United Nations (2005) World Summit Outcome Document refers to the interdependent and mutually reinforcing pillars of sustainable development as economic development, social development, and environmental protection. However, indigenous peoples have argued, through various international forums such as the United Nations Permanent Forum on Indigenous Issues and the Convention on Biological Diversity, that there are four pillars of sustainable development, the fourth being a cultural one.

In Africa, concern around governance becomes paramount when discussing sustainability. Threats to the environment from conflicts, multinational companies and autocratic regimes require more investigation. Sustainable development emphasises the importance of democracy in solving environmental problems. The traditional paradigm saw no direct link between democracy and environmental problems, whereas sustainable development holds that the achievement of intra-generational equity will require measures to help poor and disadvantaged groups, and that these groups should have the opportunity to define their own basic needs. The need for participation by local communities in the management of their resources is outlined in two chapters in this book with a clear focus on how ultimately political will and governance structures are at the heart of achieving sustainable development. Linked to this is the need to ensure that any measures of protecting the environment are based on the principle of equity. Equity requires that poor and vulnerable groups are not further disadvantaged by measures that promote sustainability.

In Africa one of the major issues emerging is environmental security. Environmental security focuses on the trans-boundary character of challenges to preserving the global environment by recognising that threats by such phenomena as global warming, ozone depletion, the loss of tropical forests and marine habitats can threaten the future of humanity as much as the threat of warfare using weapons of mass destruction. Sustainability is thus an important

3 www.berkshirepublishing.com/assets_news/sustainability/Spirit_SustainabiliyTheory.pdf

security issue. Tignino (2010) uses the discussion on water and climate change to show how the scarcity of essential resources from unsustainable practices will lead to conflicts. Lambrou and Piana (2006) argue that human-induced climate change represents one of the most serious global environmental problems as noted by the Third Assessment Report of the Intergovernmental Panel on Climate Change (2001) which states that there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities. Across Africa poor communities are suffering heat waves, drought, desertification, deforestation, flooding, tropical diseases and natural disasters as well as poverty and lack of infrastructure. These impacts which are gendered include that there may be increased difficulty in accessing resources, in particular, fuel wood and water, hence, creating an increased workload for women. Consequently, women's informal rights to resources could decrease or disappear as access to land's natural resources dwindle due to climate change.

Sustainability in a rights-based discourse

Without moving beyond the concerns of this book, it is important to understand how the issue of sustainability is intricately linked with rights-based approaches. Below I outline three basic rights which we feel form the basis of any discussion of sustainability. Sustainable development requires people to rely as much as possible on renewable resources (the kind that can be replenished) by getting power from the sun rather than power from fossil fuels such as oil, coal, and natural gas, which take millions of years to form. Sustainability is not just about protecting the environment like many people think; it is about assuring quality of life to people.

(a) Right to development

According to the 2004 'Review of progress and obstacles in the promotion, implementation, operationalisation, and enjoyment of the right to development' by the UN Economic and Social Council, and on the basis of Article 1 and the preamble of the Declaration of the Right to Development, in fact, the right to development is defined as a right to a particular process of development in which 'all human rights and fundamental freedoms can be fully realized'. The pursuit of development, rather than being a mere economic process, has to enable people to realize the 'rights and freedoms set forth in the International Bill of Human Rights, in their totality as an integrated whole.' Pursuing development, in other words, is not an end that legitimises any violation and abuse, but is a process that has to be treated as a right, a dialectic between state and people where all rights,

that is, economic, social and cultural, as well as civil and political, are realised together. What is needed is for governments, investors and the concerned citizenry to appreciate bottom-up development processes that lead to the building up of development compacts. Development compacts have a strong bearing on the individual notions to development and access to land based assets.

b) Right to food

Food is central to human existence and for that reason, therefore, holds an important position in people's rights. Large scale land deals are fencing people out of access to food sources. Food security is thus threatened by land acquisition. The World Food Summit of 1996 defined food security as existing 'when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life.' A household is considered food-secure when its occupants do not live in hunger or fear of starvation. Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences. The food is thus: affordable, safe and healthy; culturally acceptable; obtained in a dignified manner and produced in ways that are environmentally sound and socially just[4]. Without access to land, the food sovereignty of communities is seriously threatened. Food sovereignty is a term coined by members of *Via Campesina* in 1996 to refer to a policy framework advocated by a number of farmers, peasants, pastoralists, fisherfolk, indigenous peoples, women, rural youth and environmental organisations, namely the claimed "right" of peoples to define their own food, agriculture, livestock and fisheries systems, in contrast to having food largely subject to international market forces. Protecting land rights thus maintains the food sovereignty of rural communities.

c) Right to water

The process of 'water grabbing' by state and non-state actors in Zimbabwe has to be understood in the context of international protocols the government signed which view water as a basic human right. Zimbabwe committed itself to meeting the United Nations Millennium Development Goals (MDGs), one of which seeks to provide safe drinking water and sanitation to at least two thirds of its population by 2015. Meeting this target is highly unlikely and as water becomes more of an individually owned asset, poor communities' access to clean

[4] http://www.foodsecuritynews.com/What-is-food-security.htm

water is reduced. Studies in Zimbabwe (Matondi 2001, Nemarundwe 2003, Derman and Hellum 2003, Derman et al., 2007) have highlighted how communities in Zimbabwe conceptualise water as a public good for the benefit of all. Fencing out people from safe drinking water is thus an alien concept. In African cosmology, which dictates that water, does not belong to an individual. Thus, all have an equal access to clean water. The International Covenant on Economic, Social and Cultural Rights (ICESCR, 1996) includes the right to water as a fundamental human right and Zimbabwe is a signatory to this. Derman et. al. (2007) note that the United Nations Educational and Scientific Organisation (2003) in a global report titled *Water for People, Water for Life* explicitly emphasises the right to water.

Article 24 of the Convention on the Rights of the Child, states that a child has a right to clean drinking water, whilst Article 14.2h of the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) states that rural women have a right to 'enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications' on an equal basis with men (Derman et. al. 2007). African governments including Zimbabwe also recognise the right to water. Article 15 of the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa on the right to food obliges states parties to "provide women with access to clean drinking water, sources of domestic fuel, land and the means of producing nutritious food" Derman et. al. (2007: 250). Recognition of the link between poverty eradication and access to water is undeniable. Given this context, it is clear that the government of Zimbabwe recognises the right to water as one of the fundamental human rights. Water grabbing thus poses a serious threat to the human rights of smallholder farmers who are increasingly being fenced out of accessing water.

Outline of the book

Chapter Two by Mapara and Thebe, *Sustainable development in Zimbabwe: Epistemological dimensions on the preservation of indigenous agricultural practices* focuses on the need to understand the importance of local knowledge systems in agricultural systems. It highlights the efficacy of African belief systems in ensuring sustainable agricultural practices. Chiweshe in Chapter Three discusses the emergence of Community Share Ownership Trusts (CSOTs) in Zimbabwe. The chapter questions how men and women are involved in the control of resources within the CSOTs. It shows that there are many challenges facing CSOTs such as the lack of accountability and consultation of local people in decision-making.

This is more so for women who are represented by one person in the committees. Mutopo and Whande in Chapter Four entitled *Small Scale Agriculture, Food Security and Governance in Southern Africa,* provide a nuanced analysis of how governance impacts and influences livelihoods. They provide an assessment of how the democratic typologies in southern Africa reveal key differences in political governance, with implications for how productive inputs are accessed and also the conditions under which individual small scale farmers can meet their food security.

In Chapter Five, Madzara and Chiweshe highlight the linkages between the environment and gender in Zimbabwe. The chapter investigates how women in honey and bamboo weaving enterprises experience market-oriented conservation. It reveals largely negative perceptions about market-oriented conservation and concludes that market-orientated conservation enlarges the patriarchal space, favours the entrepreneurial mostly men and largely disenfranchises the poor and women. In Chapter 6, Mpofu-Hamadziripi and Bangira place language at the centre of analysing sustainable development and the creation of terminology for agricultural sciences in Africa. The thesis of the chapter is that indigenous languages can be placed right at the centre of development issues and can be empowered to play key roles in developmental issues. Nembaware expands this arguament in Chapter 7 when he explores the educational and aesthetic elements in the lyrics of *Sarawoga*, the 2012 music album of the Kora award-winning Zimbabwean musician, Oliver Mtukudzi. Efforts are directed at foregrounding the importance of music as an art as well as an educational form existent in every single culture. The chapter thus argues that music is a veritable way of transferring skills from one generation to another, thereby serving as an indisputable support to the agenda of sustainable development. The chapter provides an indigenous knowledge perspective of the indigenous foods consumed in Zimbabwe from the perspective of their nutritional and therapeutic values. Chapter 8 by Bvekerwa, Mpofu-Hamadziripi and Shava argues that Africa had her own ways of managing and achieving sustainability prior to colonisation. If Africa claims a platform to manifest her capabilities, drawing from her own knowledge resources, innovation and practices, she can achieve sustainability. The argument in this discourse, tapping into the African worldview, is concretised using proverbs as a central feature within the African philosophy of life.

In Chapter 9 Chimhundu provides a nuanced analysis of how language relates to development. This chapter provides a comparative review of the 1986 Language Plan of Action for Africa, revised in 2006, and the Harare Declaration

and Plan of Action of 1997. It shows how these two plans of action still provide the full rationale, guidelines and framework for the formulation and implementation of comprehensive national language policies in Africa, and for their alignment to achieve both social cohesion and regional integration. Matowanyika's discussion in Chapter 10 presents an approach to enable the thought process for those whose task it is to address the promotion of sustainable development within the context of systems complexity. Mpofu and Mberi provide a further dimension on linguistic diversity and sustainable development in Chapter 11. The chapter provides an indigenous knowledge perspective of the indigenous foods consumed in Zimbabwe from the perspective of their nutritional and therapeutic values. Zimbabwe is linguistically and culturally diverse with this diversity being realised in the foods of different linguistic groups. It is against this backdrop that the chapter provides insights of the indigenous foods consumed in Zimbabwe. Tsvere in Chapter 12, explores the rich indigenous knowledge resources women possess, how they apply this knowledge to sustain household food supplies and contribute to biodiversity through crop seed management.

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CHAPTER 2: SUSTAINABLE DEVELOPMENT IN ZIMBABWE: EPISTEMOLOGICAL DIMENSIONS ON THE PRESERVATION OF INDIGENOUS AGRICULTURAL PRACTICES

Jacob Mapara and Simangenkosi Thebe

Introduction

Population increases over the last few centuries and the rural urban migration phenomenon have had a huge impact on food production and food security especially in the urban areas. The rural areas have also been affected since the number of people per square kilometre has actually become smaller as more and more people need land for cultivation (Hanlon, Manjengwa and Smart, 2012). While the Fast Track Land Reform Programme[5] that started in the 2000s has given land to some people, most of this land has been dedicated to the cultivation of cash crops like tobacco. Although the land dedicated to agriculture among blacks has increased over the last 15 years, since the year 2000, land put to crop production has not. To make matters worse, that which has been put to crop production has not yielded much because of several factors that include among others the type of seed used, the type of food crop produced, soil infertility and increased salinity due to the use of chemical fertilisers (Savci 2012:78) Seed types and seed varieties today are controlled by multinational companies. Despite this, the yields from some of the seeds are questionable. Quite often, some of the seed varieties produce good yields, but are not resilient to attacks by grain borers. This problem is further compounded by climate change that has made seasons less predictable (Chau and Heong, 2005:26; Gudhlanga and Chirimuuta, 2016:14-33). In light of such negative developments, the writers of this chapter recommend that farmers make an effort to go back to some practices that were in place long before the advent of colonialism and seed

5 The Fast Track Land Reform Programme is an accelerated land resettlement agenda targeted at the mostly poor and inhabitants of overcrowded communal areas that the Government of Zimbabwe embarked on in July 2000.

companies. The writers argue that instead of just relying on Western practices that have become part and parcel of most communities today; they should experiment with different practices for the benefit of humanity because world knowledges should be complementary rather than exclusive. It is important to note that while the Ndebele say *akwaziwa okwa nonisa ingulube,* the Shona also say *hamuzivi chakakodza nguruve* (You do not know what caused the pig to grow fat) which means it pays to experiment and take risks.

Research design

The study focused on Nyanga and Bulawayo and used the qualitative research method. Denzin and Lincoln (2005:3) define qualitative research as '… an interpretive naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them.' As a research technique, qualitative research is deliberately deployed to reveal a target group's range of behaviour and the perceptions that drive it with reference to specific topics or issues. It uses in-depth studies of small groups of people to guide and support the construction of hypotheses. The results of qualitative research are descriptive rather than predictive. One of the methods that were used was that of informal, conversational interviews. The advantage of this type of interview is that there are no predetermined questions that are asked. This makes the interview session more flexible and largely interactive. We, as the researchers, also used Facebook, a social media platform where we analysed some of the comments posted on the pages of our colleagues. The use of social media in research is significant because social media is interactive and thus provides insights from different people. The process is capable of giving researchers clearer pictures of divergent viewpoints, and of public opinion (Ipsos, 2016:1). For the purposes of this study, we embarked on field work that focused on two areas, Nyanga's Tangwena area, Nyadowa, Nyatsanga and Kambudzi as well as Bulawayo's Entumbane. The focus on Entumbane was motivated by the fact that some farmers, especially the elderly ones, still practise what they were taught in their rural areas before they moved to the city. This is especially true in the areas of seed identification and preservation. Similar practices can be seen even in City of Mutare, where in Dangamvura *chisi,* a holy day when people are not supposed to engage in agricultural activities is observed.

Conceptual framework

This paper is grounded in indigenous knowledge systems (IKS) which are also known through various aliases such as local knowledge and traditional knowledge. The use of the terms local, traditional or indigenous should not be taken to mean knowledge that is fossilised. Indigenous people have never believed in such a type of knowledge. If anything, indigenous peoples have always promoted adventurism and experimentation as captured in the Shona proverb, *Chitsva chiri murutsoka, garo harina* (New things come to those who venture out; those who stay behind, get nothing). The idea being propounded here and one on which this paper is grounded is that of local knowledge as an idea and a system of beliefs and practices based on experiential knowledge. The paper argues that indigenous knowledge as a theory and as a means of investigation can and should not be divorced from 'from a people's history, cultural context and worldview' (Owusu-Ansah and Mji, 2013:1). If the concept is divorced from such a set-up or its owners are forcibly made to accept another knowledge form, such a concept becomes meaningless because the people who are supposed to be its custodians would have been uprooted. In the eyes of western science, the concept of indigenous knowledge is not perceived as a science, but rather as a poor cousin of science.

While the Bantu, as captured in the Shona proverb, assert that *kugara nhaka kuona dzevamwe* (You learn from others how to handle inheritance matters), they also caution: *Usafananidze nguo nedzaTarubva* (Do not compare your attire with that of Tarubva). The meaning here is that everything has to be taken in moderation. Clearly, while it is good to learn from others, it is foolhardy to throw away one's knowledge and replace it with a foreign type of knowledge that came to our land through brute force. This knowledge in the case of Zimbabwe can be seen to hold a lot of potential in the area of food security that has been left in the hands of experts trained in Zimbabwe's colleges of agriculture and universities as well as from within the SADC region and even abroad. However, what most of these experts have done is to join in the crusade against local knowledge, arguing that indigenous knowledge cannot be verified. The irony is that, no one among the western-educated experts has made any attempt to come up with a method or formula on how the veracity of IKS is to be ascertained. There are various methods and practices such as the use of smoke as a seed preservation method that the indigenous people have practised that have proven to be useful and may continue to be so if they are harnessed. The methods relate to sustainable

agricultural practices embodied by practices that relate to farming techniques, seed identification and seed preservation. All these are important ingredients in the area of food security. It is these, and others that the writers of this paper discuss.

Seed culturing

Indigenous practices play a major role in sustaining families and the environment. Despite the onslaught of western forms of knowledge, some of which may also have evolved from indigenous knowledge, local knowledge has played a role in agricultural sustainability and the sustainability of families. One thing that has proved to be of immense value is the practice of seed identification and preservation. Although indigenous people did not not pick any seed, those who continue to practise the tradition of culturing their own seed, do. They look at the environment within which a plant is, monitor its growth over the season to see if it matures to the desired level and standard. This method is not mechanical. It requires that one relies on the sense of perception. Indigenous seeds are important because they are not easily destroyed by pests when compared to the so-called modern ones. In fact, Madebwe, Madebwe and Kabeta (2005:871) point out that they are unlike hybrid seeds that are produced in a closed system which destroys opportunities for seed variety. They note that indigenous open systems create an enabling environment for the reduction of security issues relating to seed appropriateness. In addition to that they note that indigenous seeds are cost-effective and significantly contribute to food security.

It is important to underscore here that this study found that farming techniques had a lot to do with seed quality. In some cases, farmers, especially women who were the major seed custodians planted their seeds for potential seed banks in areas that had rich soils. In some cases in high rainfall areas, they used the land around anthills or close to cattle pens, usually where cattle pens were on higher ground so that runoff water fed into their crop by providing organic manure from the dung and cattle urine that are washed down by the runoff. Where the field was far off, in some instances the farmer dug holes in the ground and physically carried the manure to the holes he had dug. After this, the seed was sown. Organic fertilisers, like the leaves of trees such as the sausage tree with a high nitrogen-fixing element would also be used in place of manure (University of New Hampshire, nd, np). In addition to carefully choosing the

sites on which to sow potential seed for breeding purposes, there were, and still are other practices that come into play. Groundnuts, which cannot, or are not normally grown on the areas discussed above, are chosen during shelling. The task of shelling is either done manually or through the use of a hand-driven machine which uses human power. For purposes of getting good seed, no machines are used during shelling since machines can crush seed. There is, therefore, a risk that good seed can be destroyed. Groundnuts are not native to Southern Africa. Like maize, they were brought to this part of the world by the Portuguese from either Brazil or Mexico although they are believed to have originated from the land that is today called Peru (Prasad, Kakani and Upadhyaya, n.d, np). The indigenous or first peoples of the African continent adopted the two crops. They have also developed skills in groundnut seed identification and preservation.

Groundnut seed is initially identified from the field during the harvest. Specialists such as senior women, in most cases grandmothers, who in Ndebele and Shona culture traditionally control fields such as those meant for groundnuts are, during school holidays, assisted by their grandchildren (Olungah and Mumbua, 2015, np) as well as their daughters-in-law (if not engaged in gainful labour elsewhere). During the harvest period as they pull out the plants from the ground they identify those groundnuts that they perceive to be fully developed. The selected groundnuts are then stored in a separate from the others that are not considered to be fully developed. Care is taken to ensure that they get maximum aeration so that they do not deteriorate. According to one informant (informal interview at Chinhoyi University of Technology, 24 March 2015), the groundnuts are removed from the mother plant as soon as they are sufficiently dry. During this process, the informant maintained that the seed bank builders and monitors continue checking for any groundnuts whose husks appear to have lost their fullness during the drying period. Any such groundnuts are removed. The next stage is about storage.

After the groundnuts, have been removed from the mother plant, they are stored in a dry warm place still in their husks. Closer to groundnut-sowing time the groundnuts are manually shelled. The process of seed identification and selection goes on with the shellers identifying fully-developed nuts and make sure that weevils have not got to them or damaged them in any way. The seed that survives the scrutiny is then set aside for use in the next cropping season. It is

interesting to note that groundnuts, whether red or brown (also referred to as white) are planted together. No field is set aside for any type of seed. Watermelons and pumpkins are the other crops whose seed is identified earlier on and subsequently preserved for use in the next season and for sharing. As with groundnuts, the seed developers and harvesters are women. Where pumpkins and watermelons are concerned, a rich natural colour in the sample slice of melon or pumpkin is an initial indicator that the seed is good, having been fully and well fed by the soil. When a melon or pumpkin is thus identified, it is protected. In some instances, a fence built of branches from thorn trees is used as to protect the chosen plants. The next test of the suitability of the watermelon's seed is to eat it. If it has a good taste the seed is kept for the coming season. If the test result is not good, the seed is thrown away.

Whereas in the case of watermelons, the issue of manure is not really an important one, since they thrive even in semi-arid areas, pumpkins by contrast, require well-watered and manured areas. Only under this ideal condition can potential pumpkin seed be developed for lateruse. In addition to the use of manure/organic fertilisers, composts are also used for sowing a variety of seeds. In some instances, rubbish dumps for domestic waste are used in summer as places for sowing pumpkin plants. Commenting on a case study that they carried out in Sebakwe in Zimbabwe's Midlands Province, Shava, O'Donoghue, Kransy and Zazu (2009) point out the importance of knowing the soil types and locations where to sow the required seed. Accordingly, they state:

> Observation of planting sites revealed an in-depth knowledge of microenvironments (soil types, fertility, water) and their agricultural capabilities. Farmers knew which growing environment (microclimate) was suitable for specific crops (2009:8).

This observation underscores the point that sustainable agricultural practices mostly in the past, but also in some communities in Zimbabwe today, do not necessarily depend on chemical fertilisers or on commercially-produced seed that at times is not readily available. Seed such as that of butternuts cannot be reserved for use in seasons that follow. Besides always using certain specially-identified areas, some people decide whether or not to keep particular seeds from a given pumpkin on the basis of their size and look. If the seeds are found to be

fully developed as in the case of groundnuts, they are dried for future use. In Nyanga, one of Zimbabwe's eastern districts, some people even taste the pumpkin in its raw state. If one eats a piece of raw pumpkin and finds it to have a sweet taste that pumpkin's seed is preserved.

Maize is another crop that has extra-territorial origins, like groundnuts. According to McCann (2001:247-248) maize was brought to the African continent by merchants, missionaries and slave traders. He points out that despite its being of foreign origin it has secured a strong foothold in Africa. McCann points out that, 'the overall impact of maize may be greatest in Africa, where its growth as a major food source has paralleled the continent's economic and nutritional crises' (2001:248). The case of maize and groundnuts may raise questions on the value of the assertion that the term 'indigenous' refers to something originating from the local environment. Such thinking is narrow. Being indigenous does not mean being non-receptive. In fact, the Shona aptly capture the importance of learning from others when they state: *Zvikomo zvinopana mhute* (Some mountains and hillocks share mists). In the case of the indigenous people of Africa, and that of Zimbabwe specifically, the adoption of maize as a staple crop shows that the people accepted it as one of the crops to be cultivated together with those that provided small grains in the form of *mhunga* (pearl millet), *njera/rukweza/uphoko* (finger millet) and *mapfunde* (sorghum). It was never meant to be the dominant crop. Today it has become dominant because of aggressive marketing by seed companies and promises of less labour in processing when compared to small grains. Seed companies also promote maize and argue that maize is not affected by pests like birds. That, of course, is not true because in Nyanga, maize that is just shooting is attacked and destroyed by birds. Even baboons are a huge menace. So the arguments about the effects of birds are not cogent. The strategies that are used in warding off baboons and other pests can equally be deployed in dealing with birds.

While the arguments on the advantages of maize over small grains continue to this day, what is important is that maize has become part of the staple foods of most African countries. Its contribution has led some scholars to point out:

> In southern Africa maize has become by far the most important staple food, accounting for over 50% of calories in local diets; in Malawi alone, maize occupies 90% of cultivated land and 54% of Malawians' total calories. Malawians of the late twentieth

> century state that "*chimango ndi moyo* (maize is our life)" (McCann 2001:246).

McCann's words are significant in that they underscore the levels to which maize has risen as a staple crop. Its importance is recognized by indigenous communities who have not only adopted it as a staple crop but also as one that they use for brewing alcoholic beverages. What indigenous peoples have, however, not done is to use its brew in spiritual matters. The adoption of maize as a staple crop has led to indigenous communities even developing methods of culturing maize seed. In Nyanga people have developed a variety of maize that they call *njeke*. This variety is sweet and is also harder than the types sold by seed companies. It has pockets that cover the cob and when they are ready for harvesting the cobs face down. This has the effect of protecting the crop from the effects of the rains that are usually very high in this area. The development of *njeke* is a pointer to the reality that indigenous knowledge systems are constantly changing and are not static or fossilised forms of knowledge and practice. In fact, they are informed by among other ideas embedded in such expressions as the Shona proverb, *'Kugara nhaka huona dzevamwe'* (You learn from others how to handle inheritance matters). However, while it is important to learn from others, some areas in agro-ecological regions 3-5 that are prone to drought should continue to rely on small grains like *mhunga*, *mapfunde* and *rapoko* because these are drought-resistant. With the climate change that is becoming rampant, new farming methods should embrace IKS. Furthermore, these small grains have been seen to be good for people's health, especially those who are diabetic, HIV-positive or are suffering from cancer. Most medical practitioners now encourage the consumption of small grains.

Seed-making as a practice does not only involve seed identification. It also involves seed preservation. The preservation of seed is very important especially when one wants to ensure that planting for the next season is guaranteed. Seed preservation, whether of maize or small grains such as sorghum and millet, is by smoking. After certain seeds have been identified as potential seed for the next cropping season they are, in all cases, put aside. In the case of maize, the identified seed is tied together. Small grains are placed in a different receptacle and like maize seed are hung in the kitchen where smoke is allowed to go over them for the whole year. Smoke has the effect of functioning as a repellent against grain borers, especially where maize seed is concerned (Mapara 2009). Smoking also allows the seed preserved in such a way to be used for a longer period when compared to the seed that is prepared by today's seed

companies that do not last beyond a given season even if it has not been used. The survival rate of seed preserved in an indigenous manner compared to that which is preserved through chemicals as is done by seed companies highlights the fact that those farmers who rely on seed companies are held at ransom by seed companies, given that these are more interested in raising their profit margins than in ensuring food security.

The role of women

Indigenous women have played and continue to play a major role in food security in Zimbabwe and Africa at large. Besides being the main participants in food production, they are, in most cases, the major custodians of seed. It is also through women that skills of seed identification and seed preservation are passed down from one generation to the next. They impart the skills of seed preservation and identification not only to their female children and granddaughters but also to their male nephews. Although most males are not visible in the very acts of identification and preservation of seed in their adult life, they do a lot in this area when they are young and in their adolescence. It is only when they reach adulthood and get married that most stop participating in seed-identification because of other male activities such as hunting and fishing to supplement family diets. In the past, when women got married, they went to their new homes with seed from their mothers and grandmothers. This very act of carrying seed to their new homes and families was an open statement to the husband's family that they would not go hungry with such a woman around. Even though traditionally, the family granary, especially in a polygamous family was said to be the husband's, the reality and practicalities on the ground indicated that it was the women of the household who were responsible for food security.

Despite the fact that it is true that women played a significant role in seed-identification and preservation, thus contributing immensely to local level food security, it is important to unpack the ways in which they were taught such significant roles in their families and communities. One may ask: What are some of the elements of seed-selection that people used to identify healthy seeds? In the case of maize seed, there is what is called *chibage chakasvika, chakaguta mvura* (fully developed maize seed, seed that has fed well on water). The major characteristic of fully-developed maize was that it had a weight that was above average. For *uphoko* (finger millet) it is the size again that matters. It is the same for groundnuts. In all cases preservation except for groundnuts, beans and cowpeas was by smoking the seed in the kitchen where it would be brought down only when it was needed for planting. In addition to all this, women played

a major role in the deployment of more seed varieties. They shared seed and continue to do so to this day.

Besides playing a major role in preserving seed and distributing new varieties they acquire or learn about from friends and colleagues, women also contribute significantly to seed-harvesting and to the identification of places where seed can be sown and grown. For example, in the area of Chief Tangwena in the Nyanga district of Manicaland Province in Zimbabwe, it is women who identify the most appropriate places to prepare for the growing of *njera* (finger millet) and the ones for rice, *madhumbe* (taro) and even vegetables like manioc. If a woman is not good at identifying good places for such plants and crops, the family into which she is married will rue the decision it ever made in accepting her into their family. It is important to point out here that the role that women play is one that is bequeathed to them through indigenous practices that have been tried and tested over time and through many generations. The idea is not that women should not continue doing all that has been discussed in the focus on them above, but that the skills that they have should continue to be imparted to the younger generations, both male and female, because they have proven to be very important.

Preserving of harvest

It is one thing to ensure that seed for the next season is preserved and sown at an appropriate time, and another to ensure that the harvest that comes out of the fields is preserved for future use. This preservation and storage requires that the places used are not easily affected by the ravages of the weather such as moisture and rain. Crops also need to be protected from grain borers and smaller weevils. In spring and the onset of summer, veldt fires are at their highest when people prepare their fields for the next season. It is, therefore, imperative that measures be put in place to ensure that such fires do not destroy the harvests. Essentially, in a polygamous union, each wife keeps her own granary. Nevertheless, each wife contributes to the husband's granary that is only used in times of famine.

In efforts to preserve harvests, granaries were built on ground that minimised potential hazards such as fire and moisture. Given that people in Zimbabwe stay in different agricultural regions, and the fact that even the same locality has differences, what one finds in his immediate vicinity determines how he builds his family's granaries. The general pattern of building granaries in Zimbabwe, especially among the Shona (an artificial term used to refer to an amalgam of speakers of related dialects namely Manyika, Ndau, Karanga, Korekore and Zezuru) is the same. Most granaries among the Shona in

Zimbabwe are large circular *dagga* structures, divided into three or four internal storage chambers, and resting on stone pillars (Ellert, 1984: 12). The same is is the case even among the Shona in Mozambique. The purpose of having granaries resting on stone pillars is to minimise moisture since the raised stones give space for water to pass under the granary. In areas where stones are difficult to come across, a certain type of tree that is very strong is used. The tree can be either a *karinginje* (*albizia amara*) or *mupfukusi/mutsvurungunyu* (*bridelia micrantha*). The *mupfukusi* is also called *mukodokodo* due to its hardy nature. The act of leaving space under the granary also serves another purpose. It is under granaries that some watermelons, *mashamba* and even pumpkins are stored for later use especially those that are used in the making of *nhopi* (marsh prepared from pumpkin and cattle melon) and *umxhanxa* (made up of *mashamba* and maize).

Some granaries are built on whalebacks/*dwalas* (*ruware*). The purpose of doing that is the same as that for building on stone pillars, to avoid moisture. The additional advantage of granaries that are built on rock expanses as is found in Nyanga North under Chief Katerere and in Mutoko, in Mashonaland East, is that it is very difficult for such granaries to catch fire. They are also built on these rocks to protect them from termites. It is unfortunate that some people have started using cement and bricks to build granaries. Evidence on the ground shows that granaries made from these modern materials do not appear to help much because the crops that are stored in these modern granaries are attacked by grain borers and are affected by moisture because most of these granaries are not built on stone pillars or rock expanses as their predecessors.

When building granaries, indigenous communities do not just use clay and timber. They also use other plants as well as cow dung. Such a practice helps to ensure that the harvests last longer than one season, with a minimum of five years if it is for small grains. Cow dung is used as a mosquito repellent in most communities where mosquitoes are prevalent (Mapara, 2009). Its use in granaries is therefore significant in that it helps in repelling borers and weevils that may attack the harvest. Cow dung is also good at preventing water absorption. Again, crops will be protected from moisture. In addition to granaries, some people, especially in Nyanga, in Chief Tangwena's area, use the leaves of the *mujerenjere* tree (*albizia gumifera*) as a means of protecting their crops from grain borers. Among the Hwesa, and Budya (Nyanga North and Mutoko), granaries are also completely sealed and then thatched. The thatch is to protect them from rains while the sealing is to protect the grain from fires. The granary is only opened when necessary and with the permission of the head of the family. The participation of men in the setting and building of granaries shows that the very

act of ensuring food security at family level was not the task of one person but that of all family members. There was nothing like one person being the breadwinner in a family. Every one contributed. Before seeds were sown and grown in order to be harvested, and granaries were built for purposes of storage, there was need for the preparation of land. Before the crops could be grown suitable land had to be found and preparations on it had to be done so that crops were not tended on a zero-tillage basis as is happening in some cases today. Several activities were done in an effort to ensure that the crop grown would not be sown in vain in terms of land preparation and land use patterns.

Land preparation and land use in the indigenous way

Proper use of land is always pivotal in maximising the benefits that accrue from it. Eastern Zimbabwe is highly populated and well watered. What it also has are mountain slopes that make agricultural practices there necessarily innovative and unusual. The result is that the local people settled and did agriculture in this area between the fifteenth and twentieth centuries AD (Mupira, 2003, np; Mupira, 2011:4). Although debates have come up concerning the use of terraces in pre-colonial Nyanga for agricultural purposes, there are others like Kritzinger who are of the opinion that the terraces that characterise most of Nyanga's landscape have nothing to do with agriculture, but gold mining and processing. She brings to the fore evidence that suggests that despite previous arguments on the idea that the terraces were for agricultural purposes, they were actually for mining. She laments the fact that while the general assumption which appears to have caught the attention of many is that the terraces were for agricultural purposes, and observes that scholars like Stocklmayer make the sweeping statement (1978:4) that Zimbabwe's terraced region was "the Granary of Central Africa." She points out that such a label is unfortunate given the fact that earlier on Wild (cited in Summers 1958:178) had warned and cautioned that '[t]he terraces on dolerite have a rather poor grass cover and little depth of soil (2-3 in. at most [5-7.5cm]) … The terraces on the steep-sided granite hills … look most unattractive from a cultivation point of view.'

While debates rage on about whether or not the terraces were for agricultural practices or not, more evidence from further south in Chimanimani points to a related practice of terracing as terraces near Biriiri High School show. It is also interesting to note that the same terraces are still being used in both Nyanga and Chimanimani for the prevention of soil erosion. Whether they have been used for other purposes in the pre-colonial past does not really matter. What is important is that the indigenous communities found in those areas then

and up to this day cherish their importance as is realised in their continued use. In Nyanga, areas such as Matema and Tombo I stand out prominently as major users of terraces for crop cultivation today. Another area in Nyanga where some terraces are still being used, though on a smaller scale is a place called Nyadowa, Guta's Village.

Most people in Zimbabwe are aware of the practice of *chitemene* as it is called in Zambia, or slash and burn popularised in the book *Lands and People of Central Africa* (Kadzombe and Michie, 1981). This practice is not only peculiar to Zambia. It is also practised in some parts of Zimbabwe even up to this day in the area of Chief Tangwena in Nyanga for *njera/uphoko* (finger millet). In other areas of the country, especially where urban agriculture is concerned, a version of this is also practiced. Farmers burn the previous season's maize stalk. The act of burning underscores the importance of ashes as a fertiliser. While in urban areas the field is continuously used and slash and burn is used in combination with chemical fertilisers, in the rural areas that has been referred to the field used over two seasons and then left fallow for some period. The reason for at least two seasons has to do with high levels of leaching that are prevalent in the area. Farmers usually come back to such a field after about five years.

Intercropping or polyculture, a practice where more than one crop is grown in a given field is still very prevalent among most indigenous farmers in Zimbabwe, whether they are urban- based or rural-based. According to Guttmann-Bond (2010:261) 'Many rely on planting nitrogen-fixing species together with crops such as wheat and maize, which demand high levels of nitrogen, but there are different permutations.' This practice was so important even in the Americas where maize originated to the extent that:

At least half the early colonists' and explorers' accounts describe the system of intercropping with maize, beans and squash, known to the American Indians as the Three Sisters (Doolittle, 2000:41). The maize grows first and provides a stalk for the beans to grow on. The beans are nitrogen fixers, taking nitrogen from the atmosphere and making it available in the soil for the maize (with the help of friendly nitrogen-fixing bacteria). The squashes have large leaves which cover the ground, reducing erosion by protecting the soil from rain splash (the destructive impact of the raindrops) and providing shade, thereby reducing evaporation from the soil and discouraging weeds. In addition, slightly toxic chemicals from the squash leaves are washed by rainfall into the soil, preventing weed growth but not harming the maize and beans (Doolittle, 2000:144) (Guttmann-Bond, 2010:261).

These words that Guttmann-Bond makes are a key element to the appreciation of indigenous agricultural practices. The manner of planting has hardly changed over time. It is only that in Zimbabwe all crops are planted together. The purpose that the same crops played in the Americas is the same role they continue to play here. In fact, the continued practice of polyculture is an indication that indigenous knowledge is not static but takes what it considers to be most appropriate in the environment of people who adopt it. In addition to the seeds that are planted with maize and finger millet, sorghum and pearl millet, some plants that have nitrogen-fixing elements like cowpeas (*nyemba/indumba*) are also planted as part of the practice.

Farmers in almost all parts of Zimbabwe, whether rural or urban use the method of dry planting, known as *kupandira* in areas such as Nyadowa and Kambudzi in Nyanga. Dry planting is a method that has become even more important in this day and age of climate change where farmers are not sure how long the season would last. The idea of *kupandira* is therefore meant to capitalise on the very first rains. It is interesting to point out that in the late 1970s to the early 1980s, before climate change really became the issue that it has become today, some elders had already started declaring: *mvura haichanayi sezvayaiita kare* rendered in Ndebele as, *izulu kalisani njngekadeni* which means rains no longer fall in the manner they used to in the past. This statement is an eye opener into the value of indigenous farming practices, that if properly studied can go a long way in ensuring that today's communities continue on a path of sustainable agriculture. In addition to the *kupandira* practice, there is also the use of *marembero*. This is an indigenous form of flood irrigation, but usually on a small scale. It is done at family level where a family realises that it has access to a water source. It then constructs a canal that leads into its field or fields. This practice is again prevalent in areas in Nyanga such as Nyadowa and Nyatsanga. Farmers who use the *marembero* method usually plant rice and yams but on a very small basis. The crop is in most cases meant to be a bridging one that links the last major harvest with the expected one that is planted in the actual farming season that is forthcoming.

Even though intercropping is recognized as being important in managing issues like soil fertility and erosion, these alone are not adequate to ensure that harvests are at levels that can sustain families. Pests of all kinds, including baboons and birds as well as those in the plant domain have been a major worry for most farmers, whether they are using modern methods or indigenous approaches. Among indigenous farmers, it is interesting to note that those who are abandoning the planting of small grains, especially sorghum and

millet, cite cases of birds being a problem. The authors of this paper would like to point out that such farmers are not being honest because those who plant maize also suffer from the impact of baboons and other birds that destroy the maize crop as soon as it germinates. The same pests, baboons and some birds, attack and destroy the same crops when they mature.

In an effort to minimise the impact of pests, some of which were mentioned above, the simultaneous sowing of crops including pearl millet in order to share the load of pests like quail birds was practised. On the basis of what the research gathered, it is clear that this practice is still very much prevalent in Buhera in Manicaland Province. This practice has its roots in indigenous ways of combating agricultural pests and is still being done because of the realisation that there is no fool proof way of dealing with pests. This realisation is also confirmed by modern scientists like Altieri, Nicholls and Fritz (2005:1) who state:

> Agricultural pests – insects, weeds, nematodes and disease pathogens – blemish, damage or destroy more than 30 percent of crops worldwide. This annual loss has remained constant since the 1940s, when most farmers and ranchers began using agrichemicals to control pests. Agrichemical methods of protecting crops are costly to the farmer, potentially harmful to the environment and, despite widespread use, have not proved 100-percent effective. Problems persist due to pest resistance and the uncanny ability of pests to overcome single-tactic control strategies.

The words of the above scientists clearly highlight the reality that despite agrichemicals being applauded as the best possible solution to agricultural pests, the real beneficiaries have been the chemical companies and the environment has in actual fact been left in a worse situation. In such a situation, indigenous practices are far much better. The farmers do acknowledge that pests attack their crops and through simultaneous planting, they share the load of pests. Some of these pests come with the organic manure that the farmers use. Unfortunately for them, they cannot do without them in most cases, although where there is slash and burn, most are destroyed by fire.

As discussed in the foregoing paragraph, the use of animal/organic fertilisers (manure) *musakwanyi* which is a collection of dry leaves of some trees e.g. wild loquat as part of the compost added to the cattle kraal/pen so that

volumes of manure increase is very prevalent among most rural farmers. This is especially useful for those with small cattle herds. The use of tree leaves is also in some cases enhanced by the use of maize stalk as cattle feed. The maize stalks are harvested and stored on a raised platform over the cattle kraal but given during evenings so as to entice the cattle to come back to the kraal in the evenings. This act is undertaken because during autumn and winter cattle in Zimbabwe are not herded except in areas where there are irrigation schemes like Nyamaropa in Nyanga and Esigodini in Matabeleland South Province.

Managing crops and keeping weeds at a minimum is one way of ensuring a good harvest. As already pointed out, the indigenous people of Zimbabwe practise intercropping. This helps to reduce weed spread and even some types of pests. There are however some plants that the indigenous people do not entirely remove from their fields. These they harvest and use as seasonal vegetables. Examples of such plants whose presence in fields is kept at a minimum are *nyevhe* also known as *runi*, certain types of okra called *nyonje* and another called *bupwe*. These are not seen as a threat to crops because they do not spread as does the others. The very act of vegetable harvesting is significant because for most rural and even some urban farmers' money is not always available and most people do not have refrigerators. Even when, as in urban areas, people have refrigerators, the electricity supply is erratic. They, therefore, harvest and boil certain types of vegetables that they dry and stock for periods when vegetables will be out of season or when they will be difficult to come by. This work is in most cases done by women. This shows that land use among indigenous farmers is multi-layered. It is not something that is only meant for one crop and neither is it only meant for crops and vegetables that they would have planted. The land is a source of all foods and vegetables.

Zimbabwe has largely been afflicted by the growing of cash crops, especially tobacco whose production is detrimental to the bio-physical environment. Sacchetto notes that tobacco-growing is regularly shown as one of the major causes of deforestation in the world, in most cases due to deforestation for crop expansion as well as for the harvesting of firewood to fire drying halls for curing tobacco (2012:2). There is a need to emphasise the importance of growing food crops as opposed to cash crops as most indigenous farmers were doing prior to the land reform programme. In fact, the centrality of growing food crops which have always been the epicentre of indigenous agricultural practices is best summed up in a Facebook post between two friends on 24 March 2015. One of them says:

> I would suggest opportunities and capacities of people to make food: knowledge of growing food, knowledge of the variety of food, the availability of water resource, fertile/ productive arable land, physically healthy people to produce the food, mentally healthy people to produce the food, educationally/ experientially capacitated people to think of alternatives that enable them to be resilient in the advent of adversities in physical conditions such as too much rain, floods and droughts. I think the way the term is used these days makes it an oxymoron because some just look at availability of food and ignore the other necessary attributes for there to be security in availability of food.

This post was chosen because it reinforces the issue of indigenous foods, an area that one of the friends had asked about and was in need of input. Such words of wisdom have an echo of knowledge of the indigenous way of doing agriculture. It was and is still being done so as to ensure food security and thereby sustain livelihoods.

Conclusion

This paper through the use of a qualitative research design has argued on the importance of relying on indigenous methods of seed identification and preservation. The paper also points out that indigenous seeds are key to food security. It also notes that women are key to seed preservation and identification as well as being the major pillars in rural food security. The paper also observes that unlike so-called modern farmers who use herbicides and pesticides in their agricultural activities, indigenous farmers physically weed their crops and retain certain types of weeds as seasonal vegetables. These vegetables are rich in nutrients, and some of them have medicinal values. The paper also asserts that chemical fertilisers are detrimental to the environment, and that their continued use has not seen crop yields rise, but with the passage of time the yields have gone down significantly. It therefore argues for the use of organic fertilisers which are natural and friendly to the environment.

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CHAPTER 3: GENDERED DIMENSIONS OF NATURAL RESOURCE CONTROL WITHIN THE COMMUNITY SHARE OWNERSHIP TRUSTS IN ZIMBABWE

Manase Kudzai Chiweshe

Abstract

In 2010 the government of Zimbabwe embarked on an ambitious programme meant to ensure that communities benefit from resource extraction in their areas. The government initiated Community Share Ownership Trusts (CSOTs) as a means of ensuring community empowerment. Contrary to the stated aims of the Governmaent of Zimbabwe, critiques such as Mutondoro et al (2012) argue that there was a more seditious political objective. This chapter, however, questions how men and women are involved in the control of resources within the CSOTs and shows that there are many challenges facing CSOTs such as the lack of accountability and consultation of local people in decision making. This is more so for women who are represented by one person in the committees. Local elites in particular traditional chiefs and political leaders have benefitted at the expense of communities (Mutondoro et al 2012). The paper shows that there are also many social projects initiated through CSOTs which include building and rehabilitating clinics, roads, schools and boreholes. Women's interests have however remained at the periphery with the everyday experiences of rural women at times far removed from the rhetoric and plans of policy makers. The policy framework guiding empowerment, indigenisation and creation of CSOTs in Zimbabwe has largely ignored the various international agreements on gender such as the SADC Protocol to which the government is a signatory. The paper concludes that without concerted political will women will remain at the periphery of community resource management frameworks in Africa.

Introduction

This paper provides a synopsis of the gendered dimensions of natural resource control in Zimbabwe. Government policies on the management and control of natural resources are often based on the dominant socio-cultural systems of gender (Nemarundwe 2003). This chapter, however, avoids universalising all women as disadvantaged and rather provides a nuanced analysis of how patriarchy, power and politics interplay in rural communities to privilege a few. Through a grounded analysis of emergent community-based institutional

arrangements for natural resource management, this paper highlights how women are largely sidelined from decision-making processes. The chapter focuses on community share ownership trusts introduced in Zimbabwe in 2010 and notes how the role of women within these institutional arrangements is shaped by already existent inequalities. It utilises gender analysis to highlight where women are placed within decision-making structures. The paper also uses gender analysis as a framework to guide the connections between women and resource extraction in Zimbabwe.

Historically, Zimbabwe has largely favoured a centralist approach to resource management with some attempts at grassroots involvement through the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) project. This was a community-based natural resource management system premised on participatory methods. This notwithstanding, power remained with state institutions at rural district level. Government through agencies such as rural district councils, the Department of Parks and the Environmental Management, Agency (EMA) has continued to oversee the management of natural resources. Women have, however, faced cultural and historical impediments in participating or benefiting from resource extraction and consumption. Through this analysis, the study attempts to show how previous and current natural resource management regimes have disregarded women. In Zimbabwe, women constitute 52% of the population and yet remain outside the control of key resources.[6] One of the goals of the 2004 National Gender Policy there is to increase the level of women's participation in the main stream economy to 50% in all sectors. Thus, there is a need for a gender analysis exercise to evaluate where women are situated in terms of natural resource management. In this case gender analysis entails understanding the nature and representation of both women and men in resource-governance structures and decision- making processes. This has implications for women's access to, control and sustainable use of natural resources. Agarwal (1997) argues that women need to be equally represented in any community resource management structures and committees as the presence of women in these structures is important in bringing about change in their favour. Women's participation thus remains important in ensuring that their voices are heard.

[6] https://www.newsday.co.zw/2016/03/09/women-leadership-positions-remain/

Overview of Zimbabwe's mineral endowment

The mining sector in Zimbabwe is now recognised as a growing global industry being a major contributor to national income as well as the sector with the highest contribution of foreign exchange earnings amounting to 7% to the Gross Domestic Product (GDP) in 2012. The then Minister of Finance, Tendai Biti, in his National Budget Statement for 2011-12 reported that the mining sector in Zimbabwe had, by December 2010, contributed about 65% of the total national exports for the country and had surpassed other sectors such as agriculture and manufacturing. Mining has provided a means of livelihood to the majority of unemployed people in both rural and urban areas of Zimbabwe. The sector accounts for over 50% of total export earnings, employs in excess of 55 000 people thereby creating a livelihood for a quarter of a million Zimbabweans (Ministry of Finance 2012). According to the then Vice President, Joyce Mujuru, mining was forecast to grow by 16.7% ahead of the agriculture, manufacturing and tourism sectors, and she made the assertion that with its current ranking of being the 7th largest producer of diamonds in the world, Zimbabwe was likely to see an increased translation of revenues from diamonds into additional resources for the country's national development (PRFT 2012). According to the then Prime Minister of the Government of National Unity (GNU) in Zimbabwe, Morgan Tsvangirayi (The Prime Minister, Sept Volume 2011) the mining sector in Zimbabwe could attract between $6 billion and $16 billion in exploration and mine development investment during the 2011-2018 period (Zimbabwe Chamber of Mines 2012). The mining sector accounts for 65% of exports, up from **50%** in 2009 with exports projected at US$1.2 billion in 2010 and a nominal GDP estimate of US$6 billion. Thus, estimates suggest that mining accounts for about **20%** of nominal GDP.

Mining often provides local communities with jobs, which may enable those in subsistence to join the cash economy. Others who already have paid work may find themselves better off, since in many countries mining pays relatively higher wages. Mining jobs are, however, dominated by men, which leave women outside this economic activity. Communities can receive compensation and substantial flows of revenue when a large mine is established. Such revenue as the communities then receive can act as an important catalyst for change and growth. In areas previously peripheral to the cash economy, these monetary flows can transform the economic and social basis of communities. These benefits are, however, minimal. Mtisi, Dhliwayo and Makore (2012) argue that the minerals benefit a few politically and economically connected

individuals, a few state institutions and foreign nations to feed their insatiable markets with raw materials at the expense of all Zimbabweans. Women are largely excluded from such benefits. Alleged human rights abuses within the extractive industry include the violation of the right to a clean environment, arbitrary detention and torture, loss of land and livelihoods without negotiation and without adequate compensation, forced resettlement, the destruction of ritually or culturally significant sites without compensation or compensation and labour rights violations. Human rights abuses are, therefore, often synonymous with adverse social impacts.

Background to Community Share Ownership Trusts (CSOTs)

In 2010 the Zimbabwean government introduced community share ownership trusts to ensure that local populations benefit from their own resources. Section 14(b) of Statutory Instrument 21 of 2010 provides for the establishment of Community Share Ownership Trusts (CSOTS) which shall hold shares in qualifying businesses on behalf of their respective communities. The thrust of the scheme is to ensure that communities benefit from the exploitation of natural resources within their areas. Community Share Ownership Trusts have been launched in Mhondoro/Ngezi, Zvishavane, Shurugwi, Gwanda Marange, Mashonaland Central and Hwange. The indigenisation laws also stipulate that 51 percent of shares in any business with an asset value of or above US$500 000 in Zimbabwe should be owned by the locals. Most mining companies in Zimbabwe which are into extraction of gold, diamonds and platinum are affected by the provisions of the Indigenisation and Empowerment laws.

The direct results of various indigenisation and economic empowerment initiatives are expected to transform the lives of the previously marginalised rural folk. In accordance with Section 14(b)(1) of SI 21/2010, the definition of a community shall be residents of a Rural District Council established in terms of the Rural District Councils Act [Chapter 29:13]. Accordingly, this implies that there shall be one Community Share Ownership Trust per District. This definition, however, masks the different power relations and assumes equal access for all within the community. Communities are contested and often things done in the name of the 'people' rarely benefit them. In this paper there is a need to question how this idea of community is based on partriarchal norms which promote male privilege. This is not to say all males benefit and all females do not. The fact is that the prevalent patterns of control and decision-making generally promote male management of resources.

The community share trusts are, so far, riddled with challenges and controversies based on the problems involved in the control of money and decisions. There are many issues to look at when analysing the current debates around CSOTs in Zimbabwe. There is a need to understand the political economy of the extractive industries in which multinational companies have for years run roughshod over local communities. It is also necessary to understand that the advent of CSOTs will not change that. Rather than seeing communities as partners, mining companies see themselves as benefactors who sign a cheque to be in line with the law. CSOTs thus can be viewed as a noble initiative to combat this control of foreign mining companies. The Movement for Democratic Change however, in a statement noted that:

> The Community Share Ownership Scheme in its current form is tantamount to theft by Zanu PF where companies are arm-twisted into supporting an illegal scheme that has no credence in a normal country. Zanu PF is on a crusade to fleece companies in order to fund its election war chest. The recent revelation of corruption in Manicaland where the Zanu PF provincial leaders extorted over US$700 000 from mining firms is just a tip of the iceberg[7].

The *Zimbabwean Independent* newspaper of 19 November 2012 reported a story in which senior ZANU PF officials in Manicaland were fighting over the composition of the Zimunya/Marange Community Share Ownership Trust. The report quotes the then Minister of State for Presidential Affairs, Dydmus Mutasa, accusing party heavyweights, Chris Mushohwe and Zanu (PF) Provincial Chairman Mike Madiro of misleading the party when they formed the trust: "You are selfish persons who masterminded the formation of the Zimunya/Marange Ownership Trust at the expense of other districts in Manicaland. We want a provincial ownership trust as opposed to a district trust." There are various civil society groups that have emerged and become involved in mineral and natural resource use. One such group, the Zimbabwe Natural Resource Dialogue Forum argued that there was rampant looting and lack of community consultation in issues surrounding the Marange/Zimunya Community Share-ownership Trust though they had no evidence to support these claims. What this shows is the widespread debate and disagreements

[7] http://www.swradioafrica.com/mdc-t-community-share-ownership-scheme-politicised/

around the control of natural resources in Zimbabwe. What is clear, however, is the fact that the thoughts and experiences of local communities are rarely articulated in these debates.

The *Herald* newspaper of Thursday 17 January 2014 reported that the Zvishavane Community Share Ownership Trust has so far built two schools, two clinics and sunk boreholes in the area from the US$3 million disbursed so far from the US$10 million that Mimosa Mining Company injected in the Trust. The Tongogara Community Share Ownership Trust has implemented a number of projects that include the construction of a dam, a mortuary, classrooms, teachers' houses and boreholes. In Gwanda the Community Share Ownership Trust is inviting tenders for the completion of construction work at a number of clinics as well as for the rehabilitation of irrigation schemes. This will directly impact on the health of rural women. Chiefs in Mhondoro-Ngezi complain bitterly about the nature of negotiations in which the government left them on their own to negotiate with educated lawyers. Box 1 is an excerpt of a newspaper report outlining the thoughts of the chiefs.

Box 1: Chiefs in Mhondoro complain

The chiefs are irked by what they described as dereliction of duty by the Ministry of Youth Development, Indigenisation and Empowerment which they say has left them at the mercy of sophisticated and business-savvy Zimplats officials as they negotiate terms of the trust. "The institution of chiefs in Zimbabwe has largely remained feudal and backward characterised by leadership of elderly, generally uneducated and unsophisticated villagers. Except in a few instances where the chiefs are young and educated tertiary education graduates, the majority of us are not educated. "We are therefore, to a large extent, totally unprepared for the new phenomenon of community trusts which entails participating in management of large organisations and issues that are associated with the same. We expected the Ministry of Youth Development, Indigenisation and Empowerment to provide us or allow us to have legal representation during these meetings where we discuss formation of the trust. We expected the responsible minister, Cde Saviour Kasukuwere, and his officials to be actively involved in this, but no, all they are interested in is nominating their representatives in this trust," fumed Chief Nherera. Chief Mashayamombe questioned why Government allowed Zimplats and their lawyers to drive the process while they (chiefs) have become passive actors who are just invited to sign papers whose contents they do not understand. "Zimplats has legal representation that has drawn up the deed of trust. The Ministry of Youth Development, Indigenisation and Empowerment has its legal

officials and it's only the community represented by the chiefs that does not have legal advice on such highly legal matters. Zimplats has not been a willing entity in terms of giving back shares to the community in which they are mining. They had to be arm-twisted to agree to this; ironically they are now in the forefront of its formation. They are alienating the chiefs from their communities and at the same time sidelining the same communities they purport to want to serve."

Source: Sunday Mail 7 April 2012

Matonhodze (2012) writing in the *Newsday*, asks a pertinent question around the definition of community within the framework of CSOTs. He notes:

> Community Share Trust for whose community? In the three trusts so far established none of the eighteen Ministers, save for Ignatious Chombo, come from the concerned areas – begging the question: which constituencies will those Ministers be working for, the constituencies that voted for them, or, will they now be so benevolent as to work for their newly assigned mineral-rich constituencies? Why should Ministers from a different area, or anyone else for that matter, be seconded to a *Community* Share Trust of a community to which they do not belong?

CSOTs in Zimbabwe can be criticised and analysed from numerous standpoints. What is pertinent, however, is how we can ensure that local communities are developed and transformed by the existence of these trusts. CSOTs have had a social impact in some areas where the following has been achieved: CSOTs: provision, operation and maintenance of schools and educational facilities and amenities connected therewith, scholarships, hospitals, clinics and dispensaries; provision and maintenance of dipping tanks; provision, development and maintenance of water and sanitation facilities and; gully reclamation and other operations related to soil conservation and prevention of erosion. Education seems to be an important focus of the CSOT as many schools are being renovated, improved and constructed. Yet there are no programmes that focus specifically on girl children. There are very little projects focusing on entrepreneurial activities and promotion of innovation among rural youths.

Women and resource control in Zimbabwe

Resource extraction, use and consumption

Women only occupy a small fraction of the extractive industries in Zimbabwe. Kahari (2012) argues that women only own an estimated twenty percent of the mining concessions. The industry is dominated by foreign-owned companies but recently government has started to acquire a fifty-one percent take in foreign owned companies through an indigenisation programme. The fees for exploration and ground rentals are prohibitively high for the majority of women to get involved. For example, the registration charges for platinum and diamond claims are US$2.5 million and US$5 million, respectively. Many women are, however, joining artisanal mining and gold panning. Most of these operations are, however, illegal. Many people, especially in sub-Saharan Africa depend on natural resources for their livelihoods (food, shelter, fodder, fuel for lighting and heating, carving, medicine and spiritual value and culture.) Resources are part of the everyday life of African people, yet they do not know the most profitable resources. The term 'resources' includes a myriad of precious and essential commodities such as land, water and minerals. The focus of this chapter is on how women are involved in the various institutional structures developed for community participation. Resources in Africa have generally provided little benefit for rural communities and the poor. In Zimbabwe diamonds were expected to change the lives of the majority yet there is so much secrecy around how these resources are being utilised. With centralised government controlling resources there is little room for people to participate. Elite capture of natural resources has meant that the vast majority have been left out. There is great controversy about where the revenue generated from diamonds is going leading to the sad conclusion that this will be another victim of the resource curse in Africa.

CBNRM and Community Share Trusts: Participation of women

Community institutions influence women's and men's access to and control over natural resources and their participation in decision-making processes. Nemarundwe (2001) notes that if CBNRM programmes such as CAMPFIRE in Zimbabwe had more of co-option of local villagers in state structures through both law and use of force in extension. CAMPFIRE was an external imposition which replaced and competed with already existing institutions at the grassroots. The project was seen as successful as it ensured participation of locals yet in partriarchal communities it is curious how women were integrated into the various committees and processes. CBNRM initiatives have often been based on

idyllic images of "community" assuming homogeneity and fixity in an otherwise complex and dynamic world (Nemarundwe 2001). Communities are gendered, aged, classed and politicised to the extent that they are highly differentiated entities. Kahari (2012) argues that it is disconcerting to note that there is no quota set aside for women and no target nor timeline in the implementation of gender equality in extractive industries in Zimbabwe. Kunaka (2011) shows that the South African mining charter seeks to facilitate the sustainable transformation and development of its mining industry with a target of 26% black ownership of the country's mining assets by 2014. The charter also requires that mining companies ensure that 10% of their employees at all levels be women by 2007. Zimbabwe's current indigenisation and community share scheme as well as employee and management schemes are not aligned to the SADC protocol which calls for affirmative action measures for women in order to eliminate historical barriers that disadvantaged them. This has meant that in the long run these indigenisation policies will entrench gender inequalities in rural communities.

In Zimbabwe, Section 14(b) of Statutory Instrument 21 of 2010 provides for the establishment of Community Share Ownership Trusts (CSOTs) which shall hold shares in qualifying businesses on behalf of their respective communities. The thrust of the scheme is to ensure that communities benefit from the exploitation of natural resources within their areas. Community Share Ownership Trusts have been launched in Mhondoro/Ngezi, Zvishavane, Shurugwi, Gwanda and Marange, Mashonaland Central and Hwange. The beneficiaries are rarely consulted in the establishment of the trusts. Women and youths get one representative each in a process which is driven by men. According to the Zimbabwe Women Resource Centre Network, the fact that inequalities between men and women exist due to a long history of male dominance, women might not benefit as much as men when it comes to sharing earnings from the trusts.

Experiences in Mhondoro-Ngezi highlight how CSOTs remain influenced by the dominant patriarchal system. Women have one representative out of 15 members in a CSOT. Indigenisation and Economic Empowerment Act (14/2007) provides that on behalf of any one or more of the following groups of indigenous Zimbabweans:

a. Women;
b. Young persons under a prescribed age: and
c. Disabled persons as detailed in the Disabled n Persons Act

It is mere window dressing meant to appear as if gender representation is an important part of this process. In reality women's interests and concerns are not considered. Projects are decided by male elites and rarely do they speak to what women or ordinary community members want. What is clear is that the CSOTs were not created to achieve gender equity. Gender equity issues emerged as a side issue. Thus, there has been very little political will to use them to promote equity. The CSOTs are chaired by traditional chiefs who are the bastion of cultural practices many of which are detrimental to women's rights (Padare 2014, Kambarami 2006). Through various policies the government has tried to promote women's economic empowerment as a key strategy for achieving long term economic development and poverty reduction goals including those expressed in the Sustainable Development Goals. A good example of this is the National Gender Policy (2004) whose aim is to promote, implement and monitor gender equity. Its goal seeks to increase the level of women's participation in the main stream economy to 50% in all sectors, ensuring that they control an equal share of the economy and equally benefit from all economic opportunities presented to them. Yet within CSOTs this 50% quota does not exist. Women are sidelined and do not have much of a chance to ensure that their interests are served within CSOTs. Kahari (2012:24) argues that:

> The Community Share scheme does not address CEDAW[8] convention that requires State parties to take all appropriate measures to eliminate discrimination against women in rural areas and to ensure that they participate and benefit from rural development. It is silent on how women will participate in the decision-making process or consultation as far as developmental projects are concerned as they are impacted more environmentally, socially and economically by the presence of extractive industries.

The situation in Mhondoro-Ngezi highlights this serious lack of participation by women who mainly complain that they are not consulted on their needs. The voices of women are usually absent in discussions around the use of resources or prioritisation of projects. The fact that traditional chiefs head these institutional frames limits the participation of women especially female youths. Young

[8] Convention on the Elimination of all Forms of Discrimination Against Women

women are neither involved nor consulted within this framework of CSOT. Resource management and decision-making have remained a male prerogative even at community level.

Towards a gendered framework of resource management

This paper provokes debate and provides ideas on how to increase gender equity in natural resource extraction and consumption. Increasing the participation of women will require a nuanced understanding of local practices and customs. Cultural contexts are important in inclusion and exclusion of women from resource management. The assumption by many is that increasing the number of women in committees and institutions will automatically lead to equal representation. A feminine presence in natural resource governance is not the same as a feminist one. Whilst it is important to increase the number of women, the real challenge is institutionalising gender equity as a government. It is easier to increase the number of women, and when that happens people mistake this to mean equity. A framework for gender equity requires a strategic rather than a numerical representation of women. This will include removal of partriarchal norms and practices which entrench women's subordinate position. Proper advocacy and gender sensitisation of traditional leaders will be crucial. The framework should be built on the understanding that women are not a monolithic group but are located in multiple and diverse relationships of subordination. Given this scenario, the needs of younger and older women or of poor and rich women are not similar. The proper representation of interests can be achieved through a democratic system that looks beyond numbers to issues.

Conclusion

The discussion above provides a gendered analysis of community share ownership trust in Zimbabwe. It shows how rural women in Zimbabwe have largely been sidelined from institutional mechanisms of resource control. CSOTs remain dominated by male elites with traditional leaders playing a pivotal role. Chiefs are the bastion of partriarchal virtues yet they are made chairpersons of CSOTs. Zimbabwe's experiences in this respect highlight how patriarchal practices have entrenched women's exclusion from decision-making over key natural resources. Women's interests have remained at the periphery with the everyday experiences of rural women at times being far removed from the rhetoric and plans of policy makers.

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CHAPTER 4: SMALL SCALE AGRICULTURE, FOOD SECURITY AND GOVERNANCE IN SOUTHERN AFRICA

Patience Mutopo and Webster Whande

Introduction

The end of apartheid in 1994 heralded a new phase of life in southern Africa. The destabilisation of frontline states supporting anti-apartheid activities was supplanted by regional integration efforts firmly on the SADC agenda. The discourse on and practice of governance embraces concepts of constitutionalism, participation, the rule of law, accountability, transparency and equity. In addition, the holding of regular multiparty elections is further evidence of a deepening of democracy (Economic Commission for Africa 2006). While these changes suggest uniformity of governance approaches, in reality, the region remains diverse and with varying extents of governance practice. As a result, the implementation of governance measures across the region has remained patchy.

Despite the embracing of various components of governance, it is our key contention that political governance - here understood to mean institutions, structures, processes and practices - poses threats but can also provide amenable conditions to sustaining small scale agriculture and achieving food security in Southern Africa. This assessment is an affirmation the Economic Commission for Africa's (ECA) 2006 observation that the interface between political governance and human development determines the organisation and distribution of production inputs. Not only is political governance related to the distribution of production inputs, it is also crucial to the conditions under which populations are energised to achieve their productive potentials. An assessment of the democratic typologies in southern Africa reveals key differences in political governance, with implications for how productive inputs are accessed and also the conditions under which individual small scale farmers can meet their food security. Consequently, political governance has implications for small scale agriculture and food security in two main ways. Firstly, political governance impacts on small scale agriculture and food security in terms of the provision of production inputs to farmers distributed across predominantly rural areas with poor infrastructure. Secondly, political governance affects small scale agriculture and food security through the creation of conditions under which small scale farmers can meet their own requirements.

It is important to note that southern Africa is not a homogenous grouping when it comes to governance conditions. This has implications for the exercise of political governance both in terms of provision of production inputs and creating conditions under which citizens can meet their food security requirements. The role of the regional grouping in promoting conditions that are conducive to successful agriculture is similarly impacted on by these differences in governance conditions in the member states. The Southern Africa Development Community (SADC) approaches to food security should be viewed from this perspective and questions raised as to whether a technical approach to food security is the right way to go when governance constraints and enablers can play a critical role also.

This chapter explores the link between governance, small-scale agriculture and food security in southern Africa. Firstly, it maps the political governance conditions in the Southern Africa region. This is followed by a discussion of the importance of small scale agriculture in food security in general and more specifically in southern Africa. Policy commitments and governance approaches in place in the SADC region, and their relation to small scale agriculture and food security are explored in the context of governance typologies and the importance of small scale agriculture. A secondary objective of the Chapter is to map the food security and livelihood initiatives that different stakeholders –particularly SADC - in Southern Africa are implementing to enhance small holder farming, food security and governance in the region.

Political Governance Typologies in southern Africa and Implications for Small Scale Farming and Food Security

Smallholder agricultural development and food security can no longer be divorced from issues of political governance. In developmental terms, democratic institutions in the rest of Sub-Saharan Africa have been found to be crucial for enhancing state performance in development processes (Alence 2004), and southern Africa displays varying uptake levels of democratic processes. Food insecurity is related to the secondary role accorded to agriculture through relevant institutions, processes and structures. A proxy often used for this secondary role is mainly in terms of public sector support and investment in rural areas where the major share of small scale agriculture is undertaken. However, a "new" political economy approach evaluates the role and interaction between various interest groups in society, and the state or government is considered a special interest group in its own right with no supposition that government necessarily always acts in the interest of the majority of its citizens (Food and

Agricultural Organisation Report 2009). Different governance regimes currently characterise the SADC region and we evaluate them here in relation to the actions of the state in relation to small scale agriculture and the interests of the citizens.

The SADC states have different governance paradigms and their ability to support food security is impacted on by social and political stability. Complex situations such as the multiple, multi- layered crises in Zimbabwe due to its fast track land reform has led to a decline in agricultural production in some crops for instance tea and sugar cane but has also led to the boost in production of crops such as maize and cotton (Moyo 2009). The 27-year civil conflict in Angola and the 12-year civil conflict in the Democratic Republic of the Congo, led to the collapse of small holder farming as most farmers fled their homes due to the intensification of the war, leading to a rise in the number of the food insecure (Lambrechts and Barry 2003). Angola and Zimbabwe serve as evidence of how political governance can jeopardise small holder farming and affect food reserves of the nation. Zimbabwe serves as evidence of how political governance jeopardises smallholder farmers as evidenced by the fact that the farmers in the communal and new fast track farms do not have access to loans for their faming activities due to the harsh macro-economic environment currently being experienced in the country and the agricultural policies that have not changed since the advent of the new smallholder farmers in the new farming zones.

Three democratic regimes can be identified in southern Africa. They range from democratic to undemocratic systems and pseudo-democracies having long impacted on the region. They are directly linked to political governance in the sense that they determine in whose interests the states act. Their impact on small scale agriculture is linked to the strength of their institutions. Undemocratic regimes are characterised by authoritarian rule, weak political, economic, environmental and social institutions. Access to land and farming support is limited as most of the countries are in conflict situations, which affect all tenets of governance. Policies take a top-down approach without any participation by the citizens. Policy differences materialize and the result is policy inaction and arbitrary policy imposition by Presidents. This arbitrariness often leads to policy centralism that is the forerunner of an autocratic regime. Zimbabwe is the best case of an undemocratic regime in Southern Africa, with heavily polarised political and economic space. One party dominates the constitutional process and the party or government willy-nilly makes constitutional amendments that are backed by the party sympathisers, in as much as they are detrimental to the livelihoods of the people. This is evidenced by the fact that the Zimbabwean

constitution from the independence period 1980 until 2012 was pro-political rights and negates the right to food and livelihoods which are moulded within the ambit of economic and social rights which equate to the right to food secure communities (Masunungure and Bratton 2009).

Presidential centralism has characterised food and land policy issues with mostly the president making policies on behalf of the nation without consultation (Masunungure and Bratton 2009). Lack of such democratic principles has affected the national food basket and the operation of smallholder farmers who are continuously faced with shortages of inputs, lack formal title to land and do not have policy participation space in the policy agenda setting process, which is elite and politically driven, further affecting democratic governance and smallholder farming in a country that has been affected by severe successive droughts during the last ten years. However, in 2013 the legalisation of the right to food security and nutrition was added into the new constitution adding a new lens of viewing the issues of food governance from the economic, social and cultural angles. It is too early to really judge whether the right to food as codified in the new Zimbabwean constitution brings a democratic right to access and affordability of food.

While democratic regimes have open political, economic and social spaces, the history of southern Africa and the unfinished land reform render their work difficult due to the nature of the public governance space. The governance space is affected by the current regional economic instability as evidenced by the current events in South Africa, Malawi, Zambia and Zimbabwe, threatening food security. The right to participate in public life is protected in the constitution. Functional institutions are designed in a clear non-politicized environment and can be scrutinised by the public. South Africa provides the best example of this, yet it hardly has any small-scale agriculture as its food security is heavily reliant on commercial agriculture. South Africa is the best prototype of a democratic state in Africa in as much as it has little scope for smallholder farming with commercial farming dominating agriculture, this is where the principle of political philosophy, the government that governs the least is the best, applies in the whole of Southern Africa, (Mutopo 2014). The Constitution is the most human-rights- friendly in Southern Africa and the citizens have the right to political, economic and social rights that also trickle to agriculture and promotion of black economic empowerment in South Africa, as a result the country`s repeated attempts to enhance the policy and legislative framework for smallholder farmers, helping avert food insecurity situations. This has made South Africa the bread basket of the region. Political governance structures in

South Africa have led to democratic space which has enabled critical debates on agriculture in an open space unlike most SADC states; this has facilitated a better food security and land reform regime in South Africa despite its historical roots.

Finally, countries with so called democratic institutions, a vibrant civil society and questionable political space, but in which, however, governance is highly centralised and controlled by a small minority, preside over what can be termed pseudo-democracies. Malawi is typically a pseudo democratic state without real democratic dispensation but rather the culmination of a mixed regime management style composed of democratic and undemocratic trends. This has negatively affected food security and the initiation of sound policies on smallholder farming. This is despite the fact that the country is seen as the best prototype of a government focusing on boosting smallholder farming. The political and historical roots of Malawi have affected democratic governance because the policies in the previous Banda regime were not completely phased out, and only rather piecemeal changes were made. Thus, the country remains the poorest in the region and food insecure. Pseudo democratic states are characterised by semi-democratic constitutions that are half backed which give rights to citizens but do not apply them in full and the president is somehow the supreme authority with tremendous powers over decision making, which affects smallholder farming and food securitisation policies. Policies are difficult to really examine as they are mainly structural and because thye emanate from the governing perception of what the public problem is.

The importance of small scale agriculture in ensuring food security

The number of hungry people worldwide is increasing. After dropping for much of the last decade, the ranks of the hungry rose again in 2009. Prior to the food price crisis in 2008, more than 850 million people globally were undernourished (IDRC 2011). The Food and Agriculture Organisation of the United Nations (FAO) warned that already as of May 2009, over 1 billion people were undernourished (FAO Report on Global World Food Crises 2009). This is the context from which an assessment of the importance of small scale agriculture in ensuring food security should be approached. The hunger and malnutrition is often explained in terms of inadequate food production, with recommendations to increase production by small scale farmers. The World Bank estimates that under current conditions, global food production would have to double by 2030 to meet the increasing numbers of hungry people. This is despite the fact that global food production has actually increased over the last 4 decades (Pasteur 2009). Food production, it appears, is only part of the problem. Food security is,

thus, as much a function of effective and efficient distribution of food as it is of ensuring small scale farmers produce enough for their consumption.

An assessment of the composition of the poor and hungry indicates that they are mainly small scale farmers, including livestock keepers, crop farmers and those dependent on natural resources such as forests and fisheries for their livelihoods. Roughly half of the 1 billion hungry in 2009 were smallholder farmers, 22 % are rural landless, 20 % are the urban poor, and 8 % are populations that depend mainly on natural resources, such as fishers, herders, and forest dwellers (Scherr, Wallace and Buck 2010). Considering that global food production has increased over the last four decades, but has not reached these small-scale farmers, it is of paramount importance that their food production is improved to ensure food security. The sheer numbers of households dependent on small scale agriculture for their livelihoods makes this an important aspect of food security in the developing world, particularly in Sub-Saharan Africa (SSA) and Asia. According to Pasteur (2009), two billion small scale farmers are rural dwellers, 230 million of them are in Sub-Saharan Africa (SSA). The majority lives in abject poverty and is undernourished, with limited options for livelihood diversification. It is in these rural areas that the need to improve food security is most critical, which in part can be attained through improved small scale agriculture.

Despite constituting 60-80% of farmers in SSA, until recently according to the Comprehensive Africa Agricultural Development Programme (CAADP), small scale farmers received little policy and governance support from their governments and are often constrained by events such as climate change and conflicts. They face both natural and institutional constraints in achieving food self-sufficiency. They depend on rain-fed agriculture, itself highly vulnerable to climate change and variability risks. Direct funding to agricultural development has dropped over the last few years, with international support geared towards the privatisation of agricultural development, reaching a minor 10-15% of small scale farmers (Pasteur 2009). While African countries committed to increasing agricultural development through increased funding to up to 10% of national budgetary allocation, there is little evidence that this is being met. To achieve food security, policy and governance regimes, including the provision of adequate financing for agricultural development, need to be supportive of small scale farmers who feed about 70% of the regional population. This could involve the setting up of an innovative enabling climate-resilient cropping system policy that will fund the smallholder farmers.

The challenges facing Southern Africa in ensuring food security are varied. They include, but are not limited to: insecure tenure arrangements over land for small-scale rural farmers, poorly coordinated sub-national, national and regional governance policies and institutions. Mushita and Munzara (2008) further note that in addition to climatic factors, HIV and AIDS, reduced investments in agriculture, stagnant national economies and unfavourable policy environments have contributed to food insecurity. Already, food production per person remains stagnant at early 1990s levels (de Wit, 2010) while, inversely, food imports are playing a bigger role in the region. Real incomes and jobs in the cities have also dwindled, raising questions on the potential of food imports, let alone purchase, as a strategy for food security. With the projected changes in climate in the region, these problems are set to worsen if responses are not clearly articulated and implemented.

The centrality of small scale agriculture in southern Africa

Key social, environmental, economic and political changes have occurred in Southern Africa over the last two decades. At the centre of the small-scale agriculture debate in Southern Africa is the strategic relevance of rain-fed agriculture in ensuring food security. The region is expected to be one of the most impacted from climate change and the prevalence of HIV and AIDS is particularly high. Predictions are that the western parts of the region will experience increased drying while the east will be subjected to flooding (Davies and Midgley, 2010). Both have implications for small scale agriculture and food security. Income and job opportunities, particularly in the mines, have dwindled (Kanyenze, 2004), raising questions on the sustainability of food imports as a strategy for food security. Achieving food security needs a multi-pronged approach that looks at boosting local food production and facilitating affordable food importation. In the face of dwindling salaries and job opportunities in the urban areas, rural land and other natural resources continue to play a critical role in food security and livelihoods for many.

Increased political, economic and social constraints are a major policy concern, especially from a vulnerability perspective. While our conceptualisation of political governance is based on two angles, these constraints largely relate to the conditions under which populations can unleash their energies to meet food security demands. The constraints are evident in terms of the multiplier effects of climate change and HIV and AIDS on individual and collective abilities to practise small scale agriculture. A responsive governance structure that meets the productive inputs requirements of their populations and also creates conditions

that are conducive to dealing with multiple stressors stand a chance of putting small scale agriculture at the centre of people's livelihoods even in the face of social, political and economic constraints.

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996). The SADC region, in particular, is experiencing food insecurity. Using total cereal production as a proxy for food security, the region's total cereal production has stagnated since 1990. The actual levels of production in 1990 and 2006 were 22,062,000 and 23,607,000 metric tons, respectively (Richards et al 2010). Over the same time period, the region's population increased from 152 million to 249 million, implying that per capita food consumption from domestic production declined substantially from 145kgs in 1990 to about 95kgs in 2006.[9] This means a sixty-three percent (63%) growth in population and only a seven percent (7%) growth in cereal production (Aliber, 2009). With a growing world population and increased affluence leading to demand for more and higher quality foods, and given environmental problems such as soil degradation, water scarcity, biodiversity loss and climate change, new and innovative solutions are required to improve food security. This broad overview of food production and population growth should not mask the local realities in the respective countries, and the central role of small scale agriculture in food security. While the regional population in urban areas has continued to grow, it should be noted that the majority of people still live in rural areas where they depend on small-scale farming for family food consumption and income generation. The implications of rural-urban migration on food security are not clear, but increased levels of urban poverty, coupled with a changing global economic system should be a basis for understanding the long-term implications for food security.

Southern Africa Policy Commitments to Agriculture and Food Security

In the past food security debates, have focused on issues of secure land tenure for small scale farmers. While this remains a critical area of research and policy dialogue, other areas of concern that appear more urgent have appeared. Increasingly, urgent concerns include whether or not small scale farmers will be able to cope with a changing climate which threatens the less suitable staple

[9]It is important to note that the population changed? from 1990-current levels is largely explained by the increasing membership of the Democratic Republic of the Congo (DRC).

crops such as maize. It is against this background that there is renewed commitment to addressing food security in Africa, in particular through improved governance of small scale agriculture and provision of farm inputs and crops that are resilient to climate change. Within SADC and for its member states, three distinct levels of policy commitments can be discerned. These are commitments to policy formulation at the continental level, at regional SADC level and at national level.

At the continental level, the African heads of State and Government, through the Maputo Declaration of 2003, committed to agricultural development on the continent. This is through increasing funding for agricultural development to 10% of national budget allocations to enable acceleration of growth to 6% per year. Despite this commitment, by the end of 2010, only 22 countries had signed the CAADP Compacts required to start programmes of work and enable assessments of the commitments and uniform governance parameters. Of these, only one SADC member country, Tanzania, had signed the compact (Bissi, 2010). Without the Compacts, it is difficult to assess whether member states are investing in food security or other areas of agriculture such as privatisation. Irrespective of the slow pace of signing onto compacts and committing the stipulated 10% budget requirements, the CAADP presents an opportunity for regional countries to set targets for agricultural development. Links to governance issues have to be looked at in combination with the African Peer Review Mechanism (APRM), whose areas of focus include democracy and political governance.

In addition to commitments to the CAADP conceptualised at continental level, the Southern Africa heads of state and government further committed to strengthening agricultural development through the SADC's Regional Indicative Strategic Development Plan (SADC-RISDP) of 2003. The RISDP, however, does not necessarily link the issue of agriculture to political governance questions. It spells out the need to achieve food security through improved food availability, improving access to food and improved nutrition. Of particular importance in governance terms is how these programme objectives are going to be met by member states at national level where different governance regimes are in place and driven by varying state interests in relation to their populations. Poor policy implementation is recognised as a key challenge to supporting small scale agriculture (Chibonga, 2010), and is likely to be affected by the different political governance systems in place at a national level irrespective of the goals and objectives contained in the RISDP.

While national CAADP Compact agreements have been slow in the SADC, it is important to note the efforts, largely through the Common Market for Eastern and Southern Africa (COMESA) to develop regional compacts that will incorporate both SADC and the East African Community (EAC). Such an approach can contribute to the harmonisation of agricultural investment plans in the region. SADC has moved from a historical approach of apportioning responsibility for food security to individual countries to exploring options for ensuring food security through coordinated responses. The secretariat is central to the coordination efforts first among the different units dealing in one way or another with food security issues and among member countries. The Heads of State and Government meeting in Tanzania in 2004 committed member states to 'promote agriculture as a pillar in national and regional development strategies and programmes' (*SADC Today*, 2 June 2004). Further coordination and harmonisation within SADC is being approached from an issues perspective, discussed in Box 2.

Box 2: Reform Support Facility, Crop Development and Food Reserve Facility

The last ten years have highlighted the importance of tackling land reform proactively to avoid disruptive farm occupations as was the case in Zimbabwe. On the premise that land reforms can disrupt economic development and food security situations beyond national boundaries, SADC has established a Regional Land Reform Support Facility tasked with the mobilisation of technical and financial resources to develop and implement pro-poor land reform policies and programmes (SADC FANR information leaflet 2010). How effective is this facility? Has it worked and what are the stumbling blocks to its full implementation? Responsible for coordinating, monitoring and facilitation crop development, the Crop Development Unit can contribute to regional food security. A key aspect of food security is the provision of seed. With the threat of climate change and, in particular, disasters such as floods and droughts that hamper household and small scale farmers' seed banks, the establishment of a regional Seed Security Network to improve access and availability of seed can provide alternative options (SADC Crop Development Unit, 2012). However, the free movement of seed within the region is hampered by national regulations and policies. A key requirement for the successful functioning of the seed network, and its contribution to food security, is the harmonisation of policies and regulations while still addressing the concerns of countries unwilling to shift to genetically modified food crops.

SADC has prioritised the setting up of a disaster preparedness strategy based on three components. The three components are the early warning component, systems for monitoring vulnerabilities and the food reserve facility itself. Important as such efforts might be, a regional food reserve facility might still not ensure food security for the majority of rural dwellers due to poor infrastructure for distribution and potential pilfering of the reserves by corrupt elites. Like the other initiatives above, there is a lack of clarity on how national governance dynamics are included in the regional facility. In countries where food, particularly in times of disasters is politicised, it's not clear how a regional food reserve facility will be used to reach the most vulnerable, irrespective of political affiliation.

Adopted from the SADC Land Reform Facility, 2011

At national level, investments in agriculture have been patchy. A 2007 survey found that 50% of the countries contributed less than 5% of their national budgets to agriculture (Mwape, 2009). Very few countries, as a result, were near the funding requirement of 10%. They include the Comoros, Ethiopia, Madagascar, Malawi, Mali, Niger, Senegal and Zimbabwe. Zimbabwe is, of course, a surprise inclusion in this list but further interrogation of the political governance indicates a potentially skewed input provision on a party affiliation basis (SW Radio, 2010; Zimbabwe Peace Project, 2006). While the country might have contributed to agricultural investment, it does not appear this was uniformly distributed.

Governance challenges and prospects for moving from policy commitment to implementation

A number of challenges and prospects affect the movement from policy commitment to implementation. They range from the policy-making regime in place in the respective countries, the political governance system in place, the policy-making approach and the ability of a state to provide resources for small scale agriculture. These points are elaborated on below.

Political governance implications for the policy-making process

The policy-making regimes that exist in the Southern African region are different and often conflicting due to the different political governance systems in place. Policy-making is here understood as the purposive course of action that an actor adopts in order to deal with specific or complex problems (Anderson, 2010). The different political systems in the SADC are marked by policy prescriptions that

are mainly a combination of different policy and decision-making models. Many governments tend to borrow from decision-making models such as bounded rationality, meaning policy makers or planners only pick one alternative among different possibilities. In Southern Africa, however, a variety of factors impact on policy- making. As a result, agricultural policy-making is dominated by what is commonly referred to as mixed scanning where policy-making borrows from different policy models. A weighting of the pros and cons of a decision guide on how the final approach is arrived at, is crucial in food governance. In the SADC, the complexity of land and governance issues are the agenda-setting issues, considered together with investment demands. This has allowed SADC governments to craft policies that are meant to deal with historical, colonial and economic factors that dominate the policy and legislative-making processes. Contradictory as some of the policies might be, mixed scanning in the SADC region has been done to create favourable policy environments that would not hurt agricultural production, but would, instead, encourage large scale commercial farming which is largely white driven particularly in Namibia, South Africa, Malawi, Zambia and Mozambique. This changed in Zimbabwe in 2000 when the country embarked on a policy to redress historical injustices but also largely motivated by an undemocratic political governance space. Not only has this impacted on large scale farming, in some cases it has negatively impacted on small scale agriculture.

Policy radicalisation under undemocratic political governance

Radical policy making emerged in Zimbabwe during the land reform 2000-2008 coupled with presidential centralism led to large transfers of land to some smallholder farmers creating an opportunity of livelihood enhancement and also envisaging the achievement of greater production to feed the nation. Zimbabwe's situation is further aggravated by the fact that the constitution guarantees the right to food but with the political and social upheavals the realisation of the right to food security becomes compromised as some people are not able to access the food basket at household level. The radical policy environment in Zimbabwe was coupled with undemocratic political governance that affected agricultural production hence supporting the assertion that undemocratic regimes are hunger prone and characterised by food insecurity (Sen, 2001). The complexity of the policy direction taken by Zimbabwe is that the country has been bedevilled by successive years of food insecurity and is relying on food imports from Malawi, South Africa and Zambia.

A key reflection of the political governance issues in relation to policy making is the inclusion of the right to food in national constitutions. While some SADC countries include the right to food in their constitutions, there is little linkage of this to governments' obligation and mandate to protect, promote, fulfil and provide a favourable environment for the realisation of these rights in as much as these rights add quality to the right to life, which makes it difficult for the poor and smallholder farmers to take legal action. There is a lack of clear policy goals in agriculture, governance and livelihoods on the part of the governments. States tend to see food security as referring to the national grain basket and therefore do not feel obliged to address the issue of local levels of food self-sufficiency and the democratic rights of smallholder farmers to produce food to feed the country. In a region where infrastructure development is poor, emphasis on the national food basket has serious negative consequences for rural farmers in various corners of the country.

South Africa has a policy arena in agriculture which is largely white driven and this has hampered the effective enhancement of smallholder farming, food security and livelihoods in the rural provinces of South Africa as policy action is largely influenced by the South African Commercial Farmers Union. In as much as there has been a reaction from civic groups like the Nkuzi Development Association in terms of land restitution and land redistribution to the black majority this has largely been taken by the government with circumspection. This policy stance is a result of South Africa's mixed scanning policy approach which has prioritised macro-economic stability. But it is doubtful if this has serious implications for food security for the rural poor.

Political Governance by catching onto policy trends

With the current bio fuel frenzy in Southern Africa, Mozambique, Tanzania and Zimbabwe have ceded large tracts of land to foreign investors in a bid to secure foreign currency. This has had the effect of creating complex policy and legislative scenarios since the benefits of such foreign land acquisitions for local populations are questionable. South Africa is also acquiring land within the region in Mozambique, Malawi and Tanzania in order to boost its bio fuel production and food security capacity (Makura-Paradza, 2010). Smallholder farmers are losing their right to land, livelihoods and food security since they are not part of the negotiating team as policies and laws are made by the ruling elite, excluding the rural dwellers (Matondi and Mutopo, 2011). The governments lack effective policy paradigms that can lead to the smallholder farmers benefiting. For instance, in Zimbabwe in Chisumbanje, the bio fuel company that is

currently developing the area, has also invested irrigation equipment for the surrounding communal farmers creating a win- win policy environment meant to enhance smallholder farming and improve rural livelihoods. Competition between bio-fuels and food, as an end-use of the same crop (e.g. maize, sugarcane) or as alternative land uses (e.g. oil palm versus food crops), may increase the pressure on world food prices over the next few years. In Tanzania, the Swedish company SEKAB has been criticised for displacing smallholder farmers to the impoverished lands that have altered their livelihoods as persistent calls for food aid to the communities in Bagamoyo are increasing (Sulle and Nelson, 2009). Local people are often forced to either endure enclosure or move to more isolated, marginal locations. Rather than looking at short-term and spatially specific implications of land grabbing, we should focus on the foreignisation of space in relation to its implications for sustainable and equitable development (Zoomers, 2010).

Smallholder farmers face the threat of eviction from their land as policy prescriptions with regard to large scale investment do not give them a voice. Hence the need for a Southern African country-coordinated and shared smallholder farmers` protocol on land outsourcing deals and the livelihoods of rural communities. Biotechnology and food security policies are also an important conduit for governance and smallholder farmers' livelihoods in SADC. Zimbabwe repeatedly refused agricultural seed from donors because it cited concerns about genetically modified organisms affecting soil properties as well as they're not being suitable for most communal areas. Politicisation of smallholder farming and maintaining indigenous seed bank policies, have led to maintaining a political base as peasants are the driving wheel of most SADC voters hence the resisting of agrotechnology policies that could benefit smallholders' farmers in some countries in SADC.

Private and Public Investments in Agriculture

Resources earmarked to build infrastructure and support agricultural markets in remote areas have dwindled. Where national governments have put in place infrastructure to address food security issues, this is often affected by the political governance system in place. For instance, in Malawi and Zimbabwe, the national strategic grain reserves have sometimes been mismanaged as evidenced by the food shortages in Zimbabwe in 2007 until 2008, (Moyo, 2009). Reports suggest this was largely as a failure of the political governance system as political elites in both countries looted grain reserves to the detriment of food security for the majority (Marchione, 2009). In line with a political governance system premised

on provisioning productive resources and creating conditions that are conducive for citizens to meet their own food security needs, public investments fall far short of private inputs. This has implications for small scale agriculture as it is most reliant on public funding. Evidence from South Africa, Namibia, Zambia, Malawi and Mozambique indicates that large-scale commercial farmers have the political and financial resources to acquire adequate support from agricultural organisations such as research, extension, credit and marketing. It is, therefore, important for the SADC region to dwell on empirical situations about public sector agricultural institutions and their ability to generate rapid technical change for smallholder farmers.

A third key factor is when governance is not driven by national realities, and is, instead, responsive to external factors. For instance, Mozambique, Zambia and Malawi are donor driven in terms of agriculture. This then influences the crops that smallholder farmers have to grow, which have to be mainly cash crops such as cotton and rice and not maize the national staple crops. Potential incomes from these cash crops are hampered by the reality that most rural areas are poorly serviced in terms of infrastructure. The effect of that is the high transportation costs incurred when trying to access markets. This leads to hunger as farmers tend to prioritize cash crops at the expense of food. In addition, the grower `s contracts entered into between smallholder growers and various Non-Governmental Organisations involved in smallholder farming such as CARE International tend to also exacerbate the situation. An illustrative example of the implications of this is to look at value chains in southern Africa, discussed in the Box 3.

Box 3 : ***Value Chain Development in Southern Africa and Implications for food Security***

The commodity marketing chain in Southern Africa is a contested arena that has seen the interplay between economics, politics and trade policies. Since Southern African economies depend on agricultural trade in commodities they have seen the emergence of 'political' crops such as maize, tobacco and cotton particularly in South Africa, Zimbabwe, Zambia and Tanzania. The commodity chain of these crops has largely been political and various types of interest group politics are at play in determining the producer prices. For instance, with regard to cotton, maize and tobacco, most smallholder farmers' groups (Zimbabwe Farmers Union) do not have a strong say in determining market prices but the commercial farmers determine the prices mostly of tobacco. Accordingly, the prices of maize and cotton are generally low because most commercial farmers prefer growing tobacco which fetches a higher market price. In Zimbabwe, this has forced some communal farmers to move from maize farming to tobacco farming. This has led to the quick depletion of national and local maize banks, hence the repeated hunger reports in Zimbabwe and reliance on food aid from donor organisations, as maize is the staple food, hence a threat on rural and urban livelihoods. Smallholder farmers are also becoming a part of the nonfood crops that pay something that could lead to the dearth of food-based agricultural commodities and could plunge the region into food importation in the coming years. In as much as much as policies on the pricing of agricultural commodities exist on paper the policy implementation is complicated with high level political and governance issues that are difficult to discern. Marketing chains have developed in communal areas that are not codified some are underground e.g. beef markets in Zimbabwe during land reform, marketing of maize and farmers preferring private buyers than the government since the government offers low prices as compared to private buyers, (Scoones, Marongwe et al., 2010). Cotton-growing has seen farmers entering into outgrower schemes with private companies who supply them with farming implements and transport. The smallholder farmers feel that this is a better deal since the cotton is collected from their homes and all they have to do is to work the land with the assurance that they will get all the support that they need. While the above are valuable insights and information, in revising the chapter, more thought is needed around the organisation of the discussion paper and how it constantly brings to the fore the governance challenges of the sector.

Composed by the authors from different field notes collections, 2010

Challenges and Opportunities in harmonising policies and protocols in the SADC region

For much of the 20th Century, southern Africa has been involved in some form of conflict and regional destabilisation, including the wars for liberation, dissident cold war-related and apartheid supported wars. Recent wars and social and political strife in the DRC, Angola and the low level governance conflict in Madagascar and Zimbabwe have all contributed to a lower focus on agricultural issues. National in nature but with regional implications, such political turbulence and conflicts do not leave room for coherent regional policy making as most of the productive time and resources are spent on policy actions to deal with preventive diplomacy and peace keeping initiatives. Two units that have received global coverage are both related to conflict situations – the SADC Tribunal and the Organ on Politics, Defence and Security. To create conditions where agricultural policies can be harmonised at a regional level, units such as the SADC Parliamentary Forum and the Food, Agriculture and Natural Resources (FANR) need to constitute units that can deliberate on and bind member states to observe adopted policy positions. In essence, given the long periods of "relative stability", why could Southern African governments not be more coherent from an implementation point of view? Is this something that could be explored and does this in part explain the poor policy agenda around small-scale farmers?

Regional political and economic imbalances, perceived or real, continue to act as a stumbling block for harmonised regional policies. For instance, politically South Africa has been blamed for taking a reactionary policy stance during SADC policy making meetings as it is seen to be more concerned with assuming economic regional power status and supremacy. This is despite the fact that South Africa is currently faced with the land issue and inequality between the blacks and whites which is a potential source of conflict if viewed in the context of land conflicts in Zimbabwe. An unresolved historical legacy of racial inequalities continues to inform regional policy development and uncertainty in investments in agricultural development. South Africa and Namibia land reform initiatives remain unresolved while at a regional SADC level there remains no clear land reform policy. In Zimbabwe, while a chaotic land reform from 2000 led to the transfer of land to the Africans, land occupations remain an uncertain policy option that can result in food security. Land reform, as a result, remains one of the key policy issues related to food security that requires urgent attention if small-scale agriculture is to be consolidated. The importance of land for food

security is crucial especially if viewed from the perspective that more than 60% of the population in the region resides in rural areas where their livelihoods are "attained through direct production from the land" (ZERO Regional Environment Organisation and Moyo, undated).

The marginalisation of predominantly small-scale farmers to land that is not conducive to agricultural production remains a key issue on the political agenda of these states. The SADC countries underwent liberation struggles in countries such as Malawi, Mozambique, Zambia and Zimbabwe. It has now become more of a policy condition to refer to these liberation struggles as a permanent feature of governance and as a result important questions of the daily realities of smallholders' farmers, commodity chain development and livelihoods are not really put on the agenda, killing the creation of sound effective governance regimes in the region. Policies relating to climate change, economic and political governance have not been effected by the SADC countries even though specialist units such as SADC Water, FANR and the SADC Parliamentary Forum have started incorporating climate change issues in their programmes of work. Lack of a coordinated or harmonised approach continues to replicate the "silo" syndrome of initiatives being approached from a sectoral perspective. This is due to the fact that climate-related consequences with regard to the effects on food security have not been seriously considered by the governments. Thus, there are no legal remedies put in place to deal with climate-change-related food hunger. Recurrent droughts and floods have led to most smallholder farmers' agricultural activities being impeded as they rely on rain-fed agriculture, and governments have not taken these physical threats as an important source of formulating new policies and creating a new agenda setting paradigm to deal with these global changes. The policy changes of SADC countries are slow and tend to be outplayed by political aggrandisement at the expense of democratic notions of governance.

The region can also build from historical precedents in terms of policies. The natural resources sector, particularly, provides some lessons on policy coordination. Natural Resources in the SADC have long been the central aspect of regional dialogue. From the 1990s, regional dialogue on Community-Based Natural Resources Management resulted in many countries effecting governance changes aimed at devolving authority over land and natural resources to local communities (Arntzen, Setlhogile and Barnes, 2007). While the initial focus of Community Based Natural Resource Management (CBNRM) initiatives were on wildlife resources, in recent years this has broadened, with analysts noting that the diversity of natural resources in rural areas is already subject to some form of

local management and contributing to local livelihoods. Despite the potential to bring in revenues through a variety of natural resources, the regional CBNRM programmes through the SADC secretariat appear to have dropped the community focus. The governance dimension of devolving authority to local communities is also now impacted on by a wave of Transfrontier Conservation Initiatives which has seen considerable financial resources diverted from CBNRM.

Strategies and Innovations to reduce food insecurity in Southern Africa

We proffer a set of suggestions that we think could help in guiding the framing of a democratic food regime in Southern Africa. These strategies and innovations are based on our personal experiences of working on land, food security and smallholder farming in the region. However, we tabulate our policy suggestions so that they are clearer and more easily comprehendable to a broader audience.

National- Policy -Level Actions

1. Move from political commitment to action: governments should put into practice their political commitments into policy practices so that the citizenry benefits.
2. Reform policies and create an enabling environment: Much has been learned about policies to reduce hunger and increase food insecurity, and there have been significant "innovations" in policy processes and content. Examples include:

- Decentralization of many policies to the district level to facilitate locally-tailored policies
- Systematic stakeholder consultations to determine policy priorities to facilitate regional smallholder agricultural market developments;
- Civic mobilisation to advocate for policy action;
- Establishing a "right to food";
- Public-private partnerships to mobilize and finance food security initiatives.

Community-Level Actions

1. Increase the agricultural productivity of food-insecure farmers;
2. Improve nutrition for the chronically hungry and vulnerable;
3. Reduce the vulnerability of the acutely hungry through productive safety nets

4. Increase incomes and make markets work for the poor, current markets favour the well- established farmers and disadvantage smallholder farmers.
5. Restore and conserve the natural resources essential for food security

Non-agricultural interventions (4 and 5) are absolutely critical and include such initiatives as maternal and infant-feeding centres, clean water to avoid diarrhea and disease, food-for-work programmes, nutrition education, micronutrient supplementation, and food subsidies. But these issues are affected by the different ways in which different policy frameworks are adopted and implemented. Technical and institutional innovations over the years have included:

Smallholder Productivity

- Improved germplasm for an ever-broader group of crops, grasses, trees, etc.
- Improved soil management, with more effective fertilizers and organic management
- Development of agroforestry systems
- Improved water management, including rainwater harvesting at field, farm, and landscape scales;
- Farm diversification to supply micronutrients through gardens, fruit trees, domestication of wild foods and medicines;
- Horticulture

Market Access

- Capacity-building for smallholder farmer groups to access and get higher value from markets and link to supply chains into exports and national systems;
- Mobile phones and other electronic communications applied to agricultural markets;
- New agricultural input distribution channels to facilitate smallholder access.

Natural Resource Restoration and Access:

- Micro-watershed development, practice, and organization;
- Low-cost methods of land/resource health assessment for targeting interventions;

- Tools to facilitate community-based natural resource management;
- Rotational grazing management for rangeland restoration;
- Zero-grazing, fallow banks, and fallow reserves;
- Rainwater harvest at plot, field, and sub-catchment scales.

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CHAPTER 5: EXPERIENCES OF WOMEN UNDER MARKET-ORIENTED CONSERVATION APPROACHES: A CASE STUDY OF THE HONDE VALLEY WOMEN IN CRAFTS AND HONEY PRODUCTION

Anne Madzara and Manase Kudzai Chiweshe

Abstract

The women and environment linkages proffered by eco-feminists make women an important point of reference in conservation space. Indications are that despite the various initiatives meant to motivate sustainable use, Zimbabwe's conservation status continues to deteriorate thereby putting women in a precarious position. Women suffer from loss of livelihood sources, and conservation interventions have further entrenched patriarchy. How women's space is altered within the context of market-oriented conservation approaches has not been a subject of much research and this has motivated this study. The chapter investigates how women in honey and bamboo weaving enterprises experience market-oriented conservation. This study relied on qualitative information gathered through focused group discussions with women and interviews with chiefs and conservationists. The chapter reveals largely negative perceptions about market-oriented conservation and concludes that market-orientated conservation enlarges the patriarchal space, favours the entrepreneurial, mostly men, and largely disenfranchises the poor and women.

Introduction

Issues relating to women, the environment and development constitute a major global concern today. In developing countries, Zimbabwe included, this is particularly so considering that women constitute the majority of the population that relies on natural resources (Dube, 2013). This makes women an important stakeholder in the conservation of natural resources. The lack of attention to the practical and strategic needs and interests of women and the lack of appropriate strategies to incorporate these in designing conservation programmes is likely to render conservation efforts unsuccessful. Agarwal (2000) suggests that the exclusion of gendered resource use and conservation-planning could lead to immediate failure or future unsustainability of natural resources management projects and ultimately failing to achieve conservation or development goals. This chapter is concerned with the gender relations that are brought about by

market-oriented conservation approaches. The chapter provides an analysis of the interplay between gender and the environment, in particular the participation of rural women in conservation activities in the context of market-oriented natural resources management. It uses field data from Honde Valley in Mutasa District, which has received significant support towards market-driven conservation programmes where bamboo crafts and honey production are being promoted as incentives for conservation. The conservation status of the catchment of the Pungwe River in Honde Valley continues to deteriorate despite the investment towards conservation activities and emphasis on market-oriented approaches. The study targeted women from community groups that are already engaged in conservation and enterprise activities in the three wards of Zindi, Mandeya and Chikomba.

Environmental issues in Zimbabwe

Zimbabwe has very strong environment legislation and policy framework and strategies that are anchored in a Constitution which guarantees rights to a clean environment and commits to sustainable management and use of natural resources by all. This makes conservation an important activity for all communities. Zimbabwe is signatory to a number of international conventions that advance the cause of the environment such as the Convention on Biodiversity (CBD), United Nations Convention on Combating Desertification (UNCCD) and the Convention on Wetlands. Zimbabwe has committed to the Millennium Development Goals (MDGs) among others. Despite this, the rate of deforestation has accelerated from 100,000ha in the 90s to 327,000ha or 1.9% per annum (the highest in Southern Africa) between 2000 and 2010 (FAO, 2011).

Over time the pressure on natural resources has increased resulting in reduced forest cover, forest degradation, and loss of soils, gulley-formation and siltation of rivers. The situation is exacerbated by the economic decline and land reform in the past decade, which Mawere (2013) has termed "a conservation crisis." Goredema et al. (2011) also allude to the fast track agrarian reform that has put hectares of forest areas under threat. Zimbabwe is losing forests at the rate of 1.5% per year. Murwira (2013) suggests agricultural expansion has caused most of the deforestation experienced in Zimbabwe's communal and resettled areas. Fuel wood demand is another factor. The annual wood fuel consumption of the country is estimated at 8.54 million m^3 (FAO, 2011). Wood energy accounts for over 80% of the primary energy needs in Zimbabwe's rural areas. The estimated average annual household (family of 5) fuel wood consumption in rural areas is about 5.6 tonnes although this varies depending on the availability

of forest and woodland resources. There is a growing reliance by rural and urban communities on wood energy for cooking and for processing tobacco and burning bricks. The land cover change analysis by Murwira (2013) shows an annual wood loss of 1.18% and Forestry Commission (2013) estimates a 330,000 hectares' loss of forests annually. Agriculture expansion, fuel wood harvesting, rural population growth, and fire are the main drivers of deforestation cited by the same sources. The afforestation programme which has been rolled out to rural areas is only replacing a mere 20% of the 330,000 hectares lost annually indicating that efforts in restoration is lagging behind.

The livelihoods of poor rural women and men depend on the condition of natural resources, particularly the livelihoods of people living on fragile lands. Matondi, Chiweshe and Mutopo (2012) argue that women conduct 86% of rural farming activities, which are reliant on the environment. The reliance of women on natural resources for food, income and energy, their limited access to productive resources, combined with their disadvantaged position in society increases their vulnerability to distress related to environmental degradation. As such many researchers acknowledge the role of the participation of women in the conservation of natural resources. As early as the 1940s social scientists have acknowledged the connection between women and nature that was later ascribed at world conferences in the 1970s. Subsequent studies including by Jiggins (1994), Rocheleau (1995), Nemarundwe (2003) and many others give evidence of the importance of women in the conservation of natural resources. Nugehalli and Prokopy (2009) suggest that increasing women's participation improves the success of conservation projects and there is a need to understand how they participate. Conservation practitioners, therefore, realise that it is imperative to make gender considerations in environment conservation strategies and have adopted the concept of gender mainstreaming.

The ideas behind commercialisation of natural resources management

The science and practice of conservation has evolved over time from simple restoration activities (tree planting, gulley reclamation and soil conservation) to benefit or market driven approaches through commercialising natural resources management. Grundy and Le Breton (1998) describe commercialisation as the establishment of a community enterprise around natural resources in an area recognising the need to find mechanisms to provide incentives for resources conservation. Sullivan (2010) refers to this as the financialisation of conservation and argues that this is a capitalist approach influenced by the World Bank and IMF's policy for poverty reduction, which places emphasis on market-driven

strategies. Market-driven conservation or commercialisation of natural resources management has been widely-promoted as an approach to rural development (Schreckenberg et al., 2006). Market or benefit-driven conservation is premised on the view that people will invest in conservation only if they benefit from them. As such, contemporary conservation approaches now emphasise more on enterprise development accompanied by value addition of natural resources and market linkages. The financial benefits accruing from such enterprises then serve as incentives for rural communities to invest in conservation activities. Neumann and Hirsch (2000) and Murphree (2000) support this market-driven conservation approach after observing that communities invest more time and effort when conservation activities are linked to an enterprise.

Even though the explicit aim of a market-oriented approach is for full community representation, ecological and financial benefits, it has been increasingly criticised for perpetuating male domination. Sullivan (2010) posits that commercialisation creates dependence on private provision – there is a tendency to privatise common pool resources; creates resource scarcity and resource capture particularly by men and degrades rather than conserves the environment. Across Africa market-driven conservation approaches have arguably further marginalised women instead of empowering them economically. Flintan (2011) in his research in the horn of Africa concludes that commercialisation and privatisation of pastoral assets affects men and women differently and most often further marginalises women. He also observes the tendency to privatise. It has been observed that women's involvement in conservation activities is declining under market-driven conservation systems. ACFODE (2012) notes that experience from most African and Asian countries indicate that rural men put land, water, plants, animals and fish to commercial use at the detriment of domestic users who are mostly women. Flintan (2006) suggests that conservation is a patriarchal space where methods and approaches for community representation and empowerment seem to perpetuate the dominant culture of men. This tendency increases under market driven conservation. Studies in Zimbabwe confirm these findings from elsewhere. According to Grundy and Le Breton (1998), Gandiwa et al (2014), Nemarundwe (2003) and many others, not all market-driven conservation has achieved conservation goals. They suggest that market-driven conservation activities have failed to achieve the desired benefits largely due to poor participation of local communities.

The new market-driven approaches to conservation redefine the space of rural women in the management of natural resources. Women traditionally

rely on natural resources for sustaining livelihoods and any change in the design of natural resources management sets new conditions for access, control and decision-making for them. Poverty, particularly among women who rely on natural resources, is also cited as one of the main causes of the continued degradation of the environment. This evolution has undoubtedly reconfigured gender relations in conservation. Accordingly, due to the marginalisation of women and the dominant control of men over valuable resources, the conservation status of most rural areas continues to deteriorate. Arya (2007) blames the failure of conservation activities on gender ideologies that base on wrong assumptions about how programmes will affect men and women. Given that men and women are impacted differently by the decline in conservation status, development agencies have to employ gender mainstreaming to incorporate gender considerations into planning, implementation, monitoring and delivering the benefits from conservation.

Mai et al. (2012) suggest that the implications of new approaches to conservation on women's rights to resources, access and decision-making are not yet well understood and warrant further research. The lack of focus on understanding women in situations where natural resources have been commoditised has tended to reproduce gender discrimination, reinforce male domination and exclude women from participation. Planners and policy makers need to understand the issues which directly or indirectly affect women's participation in natural resource management programmess. Underplaying the importance of women perspectives in the new paradigm of conservation programming is detrimental to conservation. This concept of commercialising conservation has not yet found a definitive name and different authors use different phrases for the commercialisation of natural resources. Because of this, the terms commercialisation of natural resources management, market-driven natural resources management and market- oriented conservation and market enterprise are used interchangeably in this study.

Rural communities in Zimbabwe are getting more connected to commercial markets and for that reason natural resources have become common commodities in urban markets of Zimbabwe. This includes indigenous foods such as *masawu, mazhanje*, mopani worms, and other products such as firewood, crafts and domestic utensils. Besides increasing connectivity to markets, Non-Governmental Organisations (NGOs) have been a significant force behind the commercialisation of natural resources in Zimbabwe. The approaches to conservation have evolved from traditional methods which mainly involve reclamation and maintenance activities such as tree planting, gulley reclamation,

field and rangeland management techniques to more market driven approaches. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) and other sustainable uses of natural resources programmes were formulated and developed along market-driven conservation approaches. Under the contemporary approach, conservation practitioners encourage local communities to commercialise natural resources so that they can derive incomes from them. The commercialisation of natural resources is viewed by some as a panacea for sustainable management and conservation of natural resources management by conservation practitioners in the region. According to SAFIRE (2003), benefit-driven natural resources management is expected to generate incentives for investment into conservation. Most conservation programmes in the country, such as CAMPFIRE, and in the region, are premised on this principle.

Zimbabwe Environmental Policy framework on conservation and gender

The environmental legal framework comprises various pieces of national legislation, key of which are the Environmental Management Act (Chapter 20:27) No. 13 of 2002, the Parks and Wildlife Act (1975) and the Forestry Act Chapter 19:05 and the Communal Land Forest Produce Act; Chapter 19:04. The legal framework is void of gender considerations as confirmed in a recent study by Nemarundwe (2005), Mataure (2008) and Nabane (1998). Although researchers point to the weakness of conservation programmes in addressing gender issues and women's marginalisation, gender equality and women's empowerment aspects still seem to occupy marginal spaces in environment legislation in Zimbabwe. The Acts are gender neutral. Gender-neutral legislation does not necessarily mean that the law will be equally applied to men and women. He suggests that instead, because of women's unequal standing in society, while there will be apparent equality in terms of the written law, i.e., a "*de jure (i.e., legal or formal) equality"*, there will, in fact, be *"de facto (i.e., substantive or actual) discrimination.* On the contrary, Environment, Forestry, Climate Change, Biodiversity the policy and strategy frameworks, perhaps because they are relatively new compared to the Acts, are very clear in their commitment to gender equality and they particularly recognise the role of women in environment protection. The National Environment Policy (2003), the National Climate Change Strategy (2014), the National Biodiversity Strategy and Action Plan (2013) all promote gender equality. The Draft National Environmental Policy recognises the link between forest degradation in communal areas and the suffering of women. It states that:

> Many of the woodlands and forests in communal areas are fragmented and degraded as increasing population pressures result in ongoing clearance for agriculture and harvesting for firewood, poles and other products. An estimated 75000 hectares are converted annually to arable land, with much of the fuel wood coming from felled trees. Some communal lands no longer have much natural woodland left, so that women often have to walk many kilometers to gather wood (Section 4.7)

In addition, the Draft Policy also recognises that:

> In Zimbabwe's rural areas, women are at the forefront of environmental use and management, both through their involvement in agricultural production and through harvesting natural resources…Experiences from other developing countries show that women are better environmental managers than men. As such they need to be more actively involved in local and national level initiatives to draw up and implement environmental policies, strategies and action plans (Section 5.4)

A recent positive development is the 2013 Constitution of Zimbabwe, which is unambiguous in its commitment to gender equality and equity and rights to resources and benefits by men and women. This provides an opportunity to review current legislation, which needs to be matched with policy. Before the Constitution of Zimbabwe which brought in overarching commitment to gender equality and the need to align all acts, policies and strategies to the constitution, gender mainstreaming into national environment management conservation agenda was clearly driven by the regional and international agreements especially given the fact that most environment-related Acts are silent on gender yet the strategies formulated in the last two decades are committed to gender equality. The Millennium Development Goals (MDGs) and the Rio Conventions have served as key platforms for mainstreaming gender into national conservation strategies.

The 2013 Constitution provides renewed interest around a nationally driven process for mainstreaming gender equality in legislation, policies and strategies. The National Gender Policy 2013-2017 also makes a special provision for mainstreaming gender in environment, natural resources management and

climate change. Community Based Natural Resources Management (CBNRM) programming featuring the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) have been criticized for their marginal attention to gender equality considerations and in particular paying attention to women's engagement in the programmes. CAMPFIRE is a flagship market driven conservation approach. As discussed in detail in the next section, performance reviews of CAMPFIRE and CBNRM by, Gandiwa et. al. (2014), Mataure (2008) expose the tendency of these programmes to further marginalize women. There are apparent gaps between provisions in the environment legislation, policy and practice in Zimbabwe, a disconnection with a potential for negative conservation outcomes.

Conceptual framework

The connectedness between women, the environment and development is a key concept in this study. Gender-environment relations have valuable ramifications in regard to the understanding of nature between men and women, the management and distribution of resources and responsibilities and the day-to-day life and well-being of people. Taking into consideration how different conservation approaches reconfigure women's space and hence their connectedness to the environment is crucial. According to Tiondi (2001), the concept of Women, Environment and Development (WED) emerged in the 1970s from Esther Boserup who wrote a book entitled *Woman's Role in Economic Development*. At the First World Conference on Women held in Mexico in 1975, Vandana Shiva introduced the issue of women and the environment (Schultz et al., 2001). The World Bank's further support to this notion was in its recognition of women's essential role in the management of natural resources. This stimulated policy planners and managers to design natural resource and environmental management programmes with the specific role of women in mind. Whereas women were previously neglected or ignored, there was increasing attention paid to the impact of women on the natural environment and, in return, the effects the environment has on the health and well being of women. The importance of gender analysis and mainstreaming in conservation initiatives is paramount.

Research Methodology

Given the interpretive paradigm adopted in this study and the nature of the research focus, a case study design was considered the most appropriate approach. The case study design allows for more possibilities of using multiple

data collection methods to gather information from various entities. In this case interviews and focus group discussions were used to triangulate the findings. Case study allows direct observation of the field in its natural setting, which is particularly suitable in a women and environment type of study. It also allows for comprehensive information to be gathered which forms the basis of formulating recommendations for enhancing the participation of women in market driven conservation. Within this case study a qualitative methodology approach was utilised. Qualitative research allows close researcher involvement to gain an insider's view of the responses come from the women. Given the research objectives of establishing how the new approaches to conservation programming have reconfigured the space of women in natural resources management, the qualitative method best allowed the women's views on this issues to be explored. Because the study is about how women interact with the environment, some subtleties and complexities are important.

The study adopted purposive sampling for the wards because there was a need to target women from the wards that are actively engaged in market-driven conservation and involved in both honey and bamboo crafts production. Six wards in Honde Valley which are participating in market driven conservation. These include Wards 1, 3, 4, 5, 6 and 7 in which 17 villages are actively involved in honey and bamboo crafts production and related conservation activities. From these wards nine enterprise groups and their producer communities are producing products being sold on the market and are operating nurseries of indigenous tree seedlings used for reforestation. The study utilised twenty-four in-depth interviews, eight key informant interviews and eight focus group discussions with people involved in the groups and producer communities.

Findings and discussion

Sources of Livelihoods for Households in Honde Valley

The key informant interviews and focused group discussions revealed that households in Honde Valley have a wide range of activities to sustain their livelihoods. All three wards exhibited similar livelihood trends. All respondents agreed that agriculture is the main source of livelihood and that it is providing households with food and income. The second livelihood activity is bamboo weaving. Women are mostly involved in agriculture and related marketing activities whilst men are mostly involved in weaving crafts and marketing. Respondents indicated that in the last three years, more and more women have taken on bamboo weaving due to the donor-supported conservation enterprise projects originally initiated through crafts making. Other livelihood activities

include small livestock farming and piece jobs. Food production is the main occupation of most households and mostly involves the women. Most of the households in the three wards rely on dry land cropping as a source of staple food. Household food production is attained through extensive dry land cropping and small livestock (goats, and chickens) farming. The terrain is generally slopy in most areas, hence the scarcity of land for cropping is a constraint forcing many households to grow crops on slopes. Maize is the most commonly-grown staple food. Other crops such as rapoko, groundnuts, beans and pumpkins are also grown under dry land farming. The chiefs indicated that production levels were meeting household food needs for most of the households.

A few households, depend on other options such a food aid, remittances and casual labour to address the food deficit. Respondents ranked the major sources of income in order of importance and indicated who are mostly active between men and women as follows: 1) Agriculture is the most common means of raising household income. This is, however, seasonal, women and men are involved although men concentrate more on one most lucrative cash crop – bananas. These are now produced by many households on a commercial scale. Women produce the rest (yams, sugarcane, vegetables, mangoes, sweet potatoes and avocadoes which are sold at the local markets). 2) Weaving bamboo to make crafts - mostly by men; women are involved as assistants to men. More and more women are taking interest. 3) Honey production involves both men and women - mostly its men owning the bee hives. 4) Selling indigenous chickens and goats (rarely) – mostly involving women. 5) Remittances: These are, however, erratic and mostly earned during holidays. Not all families receive remittances. Both men and women benefit from remittances. 5) Seasonal casual labour in tea plantations; this in no longer very popular; many women and young men do piece jobs in other peoples' fields. 6) Carving wood products – hard wood is harvested and processed by men. 7) Trading goods imported from Mozambique – involves both men and women, more young men and women are active in this than the older people. This list shows that the main sources of income are agriculture and the sale of forest products. Although men and women are both involved, the men are in the more lucrative income-generating activities. Households also rely on cash crops for additional income. Most households in Ward 3 (Zindi), Ward 1 (Chikomba) and Ward 5 (Muparutsa), in that order, practise small scale irrigated gardening. Water is collected in small weirs then diverted into furrows or pipes into the gardens. Winter gardening is used to produce vegetables for food and mostly for sale. Cash crops including yams,

sweet potatoes and sugar cane are grown almost throughout the year. Stream bank cultivation is also common in most areas, particularly for yams commonly referred to as *madhumbe*, for bananas and for sugar cane. A range of fruits such as bananas, avocadoes, mangoes and pineapples also do well in Honde Valley providing most households with a source of income.

Rearing small livestock is a not a common livelihood practice in most households in Honde Valley due to the slopy terrain. Cattle are kept by very few better-off households, particularly by those households settled on low-lying areas whilst indigenous chickens and goats are kept by the more vulnerable households who usually do not own cattle. Cattle are kept for draught power, as a status symbol and for cash income. Goats are kept in small herds of an average of four per household, for cash income and to a certain extent food security, whilst chickens are kept for food security and to a lesser extent, cash income. Chicken ownership and management is traditionally the prerogative of women. Two products, bamboo and honey, are the two main forest resources that provide a source of income to households in the three wards (Box 4). Respondents indicated that these are relatively new sources of income as traditionally most households relied on cash. The two sources of income have become increasingly more common among households in the valley in the last four years. The livelihood regime of people in Honde has implications on the conservation status of the area. Drought challenges are likely to reduce agricultural production and to force people to rely more on forest resources for their livelihoods. The indiications on the ground are that the conservation status of the valley is deteriorating and most of the dynamics are explained by the prevailing livelihood systems.

Box 4: Market-oriented conservation using crafts and honey enterprise

In Honde, conservation programming is centred on promoting honey-production and the weaving of bamboo crafts. These were introduced on the assumption that locals, especially women, would realise increased value out of bamboo and trees and, therefore, protect them. A honey-processing plant has been established at Hauna Growth Point where honey producers deliver their unprocessed combs for honey extraction. The craft sector has been transformed, through extensive product development support, from a commons market type of business (i.e. with products sold at common market places like *Mbare musika*) to a high end curiousity shop business.

Conservation Status of Honde Valley

Observations around the landscape of Honde Valley confirmed that the area is generally still enjoying a better conservation status than other areas in Mutasa district. However, given the increase in land pressure, unemployment and poverty the threat to its conservation status is high. According to the respondents the conservation status of Honde Valley is declining. Although the rate of forest area loss in Honde Valley could not be estimated most respondents indicated that forest cover is declining and major rivers such as the Pungwe are silting. The respondents identified a number of environmental problems experienced in the Honde Valley. These included soil erosion, deforestation, (the deforested areas are also being invaded by *Lantana camara,* an invasive alien species which has become a common occurrence in the valley), siltation of major rivers, increasing forest fires, depletion of bamboo, encroachment into the protected area ecosystem in Nyanga National Park and degradation of important bird areas.

Most respondents attributed the degradation status to increases in land pressure, climate induced drought, the failure by local authorities and environment agencies to engage local communities and inability to sustain community participation. They indicated that women and the youth constitute the majority of populations in the three wards and most agreed that women have become negligent in their responsibility towards the environment. One woman said, '*These days' women are no longer taking good care of their environment as they used to do. We are opening new fields haphazardly on slopes and in river courses all for the love of income and we are cutting very young trees for firewood.*' This statement asserts the position of women as role players and also shows that women themselves acknowledge they have a responsibility over the environment and natural resources. Rural capitalist approaches and attitudes seem to be transforming the roles and responsibilities.

Perceptions on Market Driven Conservation Initiatives

Women's perception was elicited by obtaining their views and satisfaction with performance of the market-oriented conservation with regard to several aspects of management of forests, which provide bamboo and honey. The respondents were specifically asked to assess the performance of market-oriented conservation with regard to the forests closest to their homestead. Assessment of performance was with respect to conservation success; level of women's participation in decision-making and extraction; frequency of conflicts over resources; conservation incentives coming through and whether or not the

enterprises were viable alternative income sources for the women. The findings show that women have mixed perceptions on market oriented conservation approaches. The women in the sample acknowledged the potential of the approach to deliver both financial and ecological benefits but they put a caveat saying, 'It is not working well as forests continue to be degraded by increased harvesting. Women's participation is limited and there is a tendency to privatise, but although incentives and benefits are apparent, they are largely enjoyed by men.'

Traditional authorities represent an influential and powerful force in rural communities and as one of the main bodies responsible for administering conservation and resource-use activities, there is considerable potential for them to facilitate natural-resource- based enterprises and to ensure that there is equal participation and that the benefits equitably accrue to all households, to men and to women. However, for these authorities to effectively oversee conservation enterprises and foster their efficacy towards ecological benefits and the economic development of the communities it is vital that they have evolved sufficiently from their traditional and protectionist ideologies. They should be able to translate the new conservation realities into benefits, thereby fostering lasting partnerships and commitment with local communities. During interviews the traditional leaders lamented that they had been excluded from the broader discussion on conservation enterprise and its practice, thereby making particular reference to the new honey and crafts enterprises. One of the chiefs commented, '*Conservation of natural resources is now about markets, it is about commodities and I seem to see that we, traditional leaders, are perceived as having no role in 'business' matters.'* Cousins and Hornby (2001) assert that legislation pertaining to restitution and community ownership has 'two curious gaps: it ignores "traditional" authority and customary law, and it makes no reference to local government; these lacunae could facilitate deeply divisive contestation over authority.' The research is of the view that traditional authority and their involvement in commercialisation of natural resources is still relevant particularly for managing access.

On whether market-oriented conservation is a good approach all three traditional leaders expressed the opinion that it was a good conservation approach because households could financially benefit from the resources they have been managing for years. They, however, felt that this approach was more driven by outsiders than the communities and that NGOs had no idea of how these resources are managed. This confirms the finding above that traditional leaders have not been engaged. The implication is that there is no one to keep under check the issues of access and control of common pool resources being

commercialised. The absence of traditional leaders means that there is no authority to protect the vulnerable who in the main are women. Continued welfare interventions targeting the poor women can be guaranteed by involving traditional authority.

One traditional leader indicated that it was taboo to sell forest products and even for Rural District Councils to charge levies for harvesting bamboo for example. On whether enterprise, orientated conservation had contributed to conservation success/promotion of environmental improvement activities all three chiefs agreed that its potential was limited because, as they said in their own words, *'suddenly everyone is harvesting bamboo for weaving baskets and there has been a lot of pressure on the bamboo forests.'* They indicated that some of the bamboo forests were harvested very young before they could produce shoots or seed. Traditional leaders also observed that this year (2014) most of the bamboo clusters had died down and we would need to wait one more season for them to reshoot. This phenomenon they attributed to indiscriminate, inconsiderate and "disrespectful" harvesting by weavers. They viewed honey production as having better prospects of conservation success and for promoting environmental improvement activities. They said this was because setting up beehives in a forest stops people from cutting trees and forces honey producers to prevent fires.

On whether the market oriented conservation approaches fostered participation-by women in decision making and in enforcement of rules, there was consensus among chiefs that women were being included in planning processes facilitated by NGOs. One chief was of the view that the inclusion of women was because every development agency was being implored by Government and donors to mainstream gender and that he believed most of what they saw as involving women was "window dressing." They argued that, in the absence of NGOs women were elbowed out by men as they made all the decisions on where to harvest bamboo, how to harvest and where and when to place beehives and harvest honey.

According to the chiefs, market-oriented conservation had led to an increase in conflicts over access to forests within households and within and between communities. Households now had a tendency to bar external users coming to harvest bamboo in forests close to their fields, although these were common pools. The chiefs indicated that previously bamboo forests bordering people's fields were common property. The chiefs also observed that grazing was now restricted to fewer areas and transboundary forests (between wards) were subject to regular conflict over access. The tendency has been that, once a tree or a cluster of trees have been identified as a hanger for bee hives by one person,

household or enterprise group, that tree or forest becomes exclusive to the honey farmers.

Interviews with a representative from one conservation NGO and enterprise facilitators sought to define their role and to establish their perceptions on market oriented conservation and women's development. The respondents defined their role in market-oriented conservation programming as that of facilitating community organisation to increase their participation in markets as producers and processors. Despite the increasing emphasis of gender mainstreaming in conservation in Zimbabwe, respondents did not identify gender mainstreaming as their role. This implies that gender equality sits at the periphery of their priorities and may explain why in this case study, women feel disenfranchised under market -oriented conservation. Regarding perceptions over market-driven conservation, the NGO representative believes that this approach *'can be widely promoted as an approach to rural development in areas where economically valuable forest resources exist. He expressed the view that women are the majority in rural areas, and therefore, are obvious beneficiaries of the programmes.'* The notion that women constitute the majority and are obvious beneficiaries implies that all the NGOs' interventions are based on the assumption that women exist in numbers and will participate and benefit. There is a risk that no deliberate effort is taken to design interventions to target women.

NGOs seem to be preoccupied with market interventions at the expense of other processes to elicit equity and equality in participation, access, control and benefits. The respondents emphasised that providing technologies for processing, training in business and product development and general improvements to transport and communication infrastructure that can facilitate market access and linkages were the most critical interventions. They went on to indicate that as facilitators, they assume that resources will be freely available but acknowledged that it does not end up being the case as the weak and non-entrepreneurs lose access. The respondents had to be probed further to ascribe importance to attending to women's needs. As an afterthought one of the facilitators pointed out, "We believe that for us to achieve our objectives, we need to pursue opportunities for greater involvement of women in forest enterprise activities, particularly paying attention to the constraints of women's traditional domestic duties." The researcher as the "window dressing" which traditional leaders had alluded to viewed this. Based on this incident, the researcher concluded that gender mainstreaming was a peripheral issue to facilitators in market driven conservation.

Defining Women's Space in Market Oriented Conservation

Guided by the Moser Gender Analysis tools, the women who participated in focus group discussion defined women's space in market-oriented conservation highlighting how this space has changed after adopting market oriented conservation approaches. Women's space in conservation is defined by the roles, needs, control, access and benefits and constraints. Findings on each of these aspects are presented below.

a) Women's triple roles

The discussions took women through the analysis of their reproductive, productive and community work and the findings are presented in Table 1.

Table 1: Triple roles of women

Discussion Questions Triple Roles	**Women's Responses**	
	Before: How do women define their roles before market driven conservation programming was introduced?	**Currently:** How do women define their roles under market driven conservation?
Reproductive Role	Family care (cooking, washing, health and nutrition support, firewood, cleaning) supervision of children homework, housekeeping	Roles have remained the same i.e. Family care (cooking, washing, health and nutrition support, firewood, cleaning) supervision of children homework. More time constraints.
Productive Role	Production of vegetables, bananas, yams, avocados, sugarcane, and mangoes sold at local market and chicken raring. Men mostly compete with women in the production of bananas.	Production of vegetables, bananas, yams, avocados, sugarcane, and mangoes sold at local markets and chicken raring. Activities increased to include weaving and honey production, marketing trips outside Honde, attending business training workshops. Single women are weighed down more by increased tasks

		compared to married women (See Box 5).
Community Work	Repairs of roads, gullies, schools' projects, attending funerals, attending to the sick,	Repairs of roads, gullies, schools projects, attending funerals, attending to the sick including nursery management, tree planting, fire guards, security duties, resource planning meetings, inventorying, hosting visitors to the project.

The findings of the study show that women maintain the same productive, reproductive and community roles that they were involved in before market-driven conservation. However, market-oriented conservation adds on new roles to women. As women seek to pursue conservation enterprise opportunities new productive and community work becomes necessary. This includes activities in the honey and crafts value chains that have clear labour divisions between men and women.

Single women indicated their experiences were different. Their submissions show that they find participating in all value chains difficult as other tasks require a man's hand (Box 5). They therefore end up dropping out of the business and pursuing other productive activities that they can do on their own. Women also get to be involved in any related community-based resource management activities such as tree nurseries management, maintenance of fireguards around apiculture forests and propagation of bamboo. This implies women's time is stretched and that they may end up relegating some of their community roles. One woman referring to how labour is naturally divided between men and women explained, *'Under this approach women's workload is heavier. Related to enterprise activities we* risk *being slaves and subordinates of men'.*

Box 5: The experience of single women

Maria is a single woman from Ward 3 who has three school-going children. Her husband passed away in 2013. Immediately after her husband passed away, Maria withdrew from participating in bamboo enterprise activities although she continued working with others in doing related community work such as nursery management. Asked why she stopped participating Maria answered, *'There are tasks that I cannot undertake as a woman. Because of the scarcity of bamboo close to hour homesteads, one has to travel more than 12 km towards the border with Mozambique to collect bamboo.* My husband used to take the crafts to the market whilst I remained behind to take care of the kids". Men are the ones who travel to Mbare and other markets to sell crafts and Maria cannot cope within that male-dominated space. Women are involved in activities that also involve their husbands.

b) Women's Practical and Strategic Needs

Women also analysed and discussed how their needs (practical and strategic needs) were redefined as a result of market-oriented conservation. The findings are presented in Table 2.

Table 2: Women's practical and strategic needs

Discussion Questions What are the needs of women?	**Women's Responses**	
	Before: How do women define their needs before market driven conservation programming was introduced?	**Currently:** How do women define their needs under market driven conservation?
Practical needs	Access to clean water, water of gardening, access to fuel wood, health education and early childhood learning facilities, space to grow crops and establish gardens,	Social networks, energy saving stoves, domestic helper, efficient agriculture production mechanisms, combined labour for weeding (nhumwe). Efficient systems for doing domestic chores to save on time e.g. gum plots for firewood, piped water to the homestead, fenced gardens, fertilisers and seed availability, foot bridges across

		rivers.
Strategic needs	Irrigation, water delivery system to gardens, market shelter, transport to markets, financial and marketing skills, basic storage facilities, capital/loans or grants	More needs including tools for harvesting bamboo, suits for harvesting honey, market shelters for selling goods, storage space in the home, camera and cell phone, exposure to markets, skills for business, networks, associations or women's clubs,

The study reveals that women's practical needs remain core even as women participate in conservation enterprise. As they pursue conservation enterprise opportunities new practical needs emerge. These needs relate particularly to the new need for technologies and other mechanisms that make their productive role easier so that they can pursue the new reproductive activities. Efficient water delivery to the household and irrigated gardens, wood serving stoves and woodlots, intensive agriculture mechanisms become more important. Strategic needs are redefined under market-oriented conservation. Needs for better mechanisms to access markets, technologies for processing, more storage space, communication, information, skills, savings clubs and business associations (women feel the need to belong to an association with other women, more than men do) are some of the specific needs that emerge from the women. This finding implies that development facilitators ought to understand these new needs and to directly address them. Failure to address them may result in women dropping out of the enterprise to continue with the usual roles.

c) Control of Access

Access to productive and strategic resources is considered key to meeting basic needs and to meeting the needs of the enterprise. Table 3 outlines the findings from the discussion on how women's access to land, education, technologies, labour and forest resources has been redefined.

Table 3: Women's control of productive and strategic resources

Discussion Questions Control, access and decision making?	**Women's Responses**	
	Before: Who controlled access and made decisions before market-driven conservation programming was introduced?	**Currently:** Who is controlling access and making decisions under market driven conservation?
Land	Traditional leaders control access to communal land. Men control access and use of land belonging to the household except for single headed households.	Same as before. Men decide where to put bee hives
Forest Resources	Forest products generally were open access to all men and women. General by laws set by chiefs guided harvesting but were not strictly monitored. Women had free access to all forest resources for firewood, fruits, brooms etc.	Access to forest resources now limited. Looks like there is now some form of privatisation of certain forest areas by groups. Access into honey plots restricted by the enterprise group, mostly men. Bamboo forests close to fields are now protected by harvesters of bamboo– access is restricted.
Labour	Women decide on labour in the households and on selected cash crops.	Women decide on labour in the households and on selected cash crops. On forest enterprises and related conservation men decide on labour. Both men and women work on bamboo and honey production but women are allocated the less important work such as stripping and

		processing bamboo, carrying buckets of honey to the processing plant, cleaning bottles, managing nurseries. Men do most of the weaving and marketing.
Equipment/technology	Women manage the purchase and use of domestic equipment and the small farm equipment. Men control larger farm equipment.	In addition women now own personal equipment for harvesting bamboo – such as knives, hark saws, pangas, gloves and protective clothing similar to equipment owned by men. Women have no access to sophisticated equipment such as for honey pressing and stripping bamboo is located at the central processing point at Hauna away from women. Women end up being just primary processors
Education	Women have equal access to education and training as women	Women have equal access to education and training opportunities as men. Women have attended training in enterprise development, weaving and honey processing. Time to attend training is limited for women, cannot go for long period away attending training.
Markets	Women have access to local roadside markets.	Women have less access to markets outside Honde Valley. Mostly controlled by men who can afford to spend days away from home. It is men who decide on prices of products, where to sell and when to go out and sell. Women have limited market information.

The findings show that, whilst access to land has not changed as a result of participating in conservation enterprise, there have been a lot of dynamics regarding access to the other strategic resources. The results show that men tend to control access once natural resources are commoditised. They have more control over bee hive sites, can out-compete women by travelling far afield to get bamboo and markets and have better access to processing technology located in the growth point far away from the villages. Forest sites also tend to be privatised thereby closing off women from accessing their basic needs such as firewood, fencing material and sometimes even water. Approaches to training and information dissemination determine the extent to which women gain access to education and skills. Women indicate they cannot spend too many days at a training workshop.

d) Benefits from Resource Use

The findings on how women benefit from natural resource use are presented in Table 4.

Table 4: Women's benefits from resource use

Discussion Questions Who benefits from resource use? In what ways?	**Women's Responses**	
	Before: How did women benefit from forest resources before market driven conservation programming was introduced?	**Currently:** How do women benefit from forest resources under market driven conservation?
Benefits from forest products	Benefits accrue to household for sustaining livelihoods - firewood, fruits, grass, fodder for small livestock, edible insects from bamboo *(mhuchi),* garden and chicken run fencing materials, yard brooms Benefits not valued	Increase use of forest products, honey, bamboo strips, dyes from roots and hardwood bark,
Financial benefits	None	Income from forest enterprises accrue mostly to men and to a few entrepreneurial women – mostly single women.

Both men and women benefit from forest products. The findings, however, reveal that when it comes to enterprises, men tend to benefit more than women financially. The findings suggest that that men and women benefit disproportionately. Women tend to depend on relatively low value or 'inferior' goods and services from the forests for providing for the family. In the case of bamboo, women use it for making enclosures in which they feed small livestock, for making chicken nests, for enriching the soil and grow them as wind shields. Men get interested in the same bamboo once it has a higher commercial value, thereby often crowding out the women in the process.

e) Constraints in Access

The general constraints faced by women were identified during the focus group discussion shown in Table 5. The main constraint highlighted is labour, which restricts women from pursuing enterprise opportunities. Free time availability determines how women get engaged. The honey-processing plant is located away from the honey producers. This naturally excludes women who do not have time to travel to the growth point.

Table 5: Constraints faced by women in accessing resources and benefits

Discussion Questions	**Women's Responses**	
	Before: How do women experience constraints before market driven conservation programming was introduced?	**Currently:** How do women experiences constraints now under market driven conservation?
Constraints in access?	Domestic chores and community work restrain women from exploring enterprise opportunities Poor capacity to produce enough food – women have to work extra hard to make sure household is food secure	Depletion of forest resources: women have to travel longer distances and naturally men travel further than women Technology is too sophisticated for the women Processing plant located at Hauna growth point far way from villages Women use their "free time" which they seldom

		have, to participate in enterprise activities.

Conclusion

This study confirms the patriarchal tendencies of conservation and provides evidence that even under market-oriented approaches which are normally designed to benefit the resource users, reinforces patriarchy. This finding supports conclusions from studies by Gandiwa et al. (2014), Neumann and Hirsch (2000) and Flintan (2006) who establish the theory of male dominant culture – patriarchy in conservation. These researchers share the view that conservation is a patriarchal space where, through various gender interactions, the domineering nature of men over women is further reinforced. The new market-oriented conservation in particular has a tendency of disenfranchising women and making them subordinate to men. In this case study it is revealed how women invest time in low value activities such as fire management, tree nursery establishment and the processing of bamboo strips while men take up the more lucrative activities such as processing and marketing. The study also reveals how women are left out because of their inability to travel far from their homesteads to fetch bamboos. Traditionally, women tend to rely on freely available natural resources facilitated by proximity, with no direct competition and incurring minimal opportunity costs. A change in the design of natural resources management sets new conditions for access, control over resources for women. A market-driven approach alters proximity of strategic resources to women in a number of ways. Lucrative markets for value-added products cease to be local, processing plants are centralised to benefit from economies of scale. Forest resources close to homesteads are over-harvested and entrepreneurs have to travel far afield to harvest resources and sometimes formal training is conducted in venues outside the villages. This particularly affects single women. Women are often involved in activities that also involve their husbands so that they complement each other in the value chain and reduce the labour that would probably have weighed down on the women. Women's involvement in enterprises tends to be restricted to those activities that do not require travelling away from the community.

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CHAPTER 6: SUSTAINABLE DEVELOPMENT AND THE CREATION OF TERMINOLOGY FOR THE AGRICULTURAL SCIENCES IN AFRICAN LANGUAGES

Nomalanga Mpofu-Hamadziripi and Courage Bangira

Abstract

Language issues are often divorced from the discourse of science, technology and sustainable development, yet these discourses take place through the medium of language. The thesis of this chapter is that indigenous languages can be placed right at the centre of development issues and can be empowered to play key roles in developmental issues. Zimbabwe's economy is agro-based and the majority of people derive livelihoods directly or indirectly from agriculture. As a result, major technological advances (for example irrigation, mechanisation), and research in agriculture (for example fertilisers, seed hybrids, agro-chemicals) have been made resulting in higher agricultural productivity. Agricultural research information, however, is still predominantly available in English, a language which the local farmers have little or no command of and this has impacted knowledge transfer and development in the local communities. Therefore, it is imperative that science and technology is made available to the local communities in the indigenous languages. This chapter argues that indigenous languages need to be developed into technical and scientific languages in their own right. This process will lead to the development of technical terminology in Zimbabwean languages other than English and ultimately to technology transfer and sustainability.

Introduction

Zimbabwe's economy is agro-based and the majority of people derive livelihoods directly or indirectly from agriculture. Since the Green Revolution, which started in Asia in the 1960s following years of famine in India, major technological advances (e.g., irrigation, mechanisation), and research in agriculture (e.g., fertilisers, seed hybrids, agro-chemicals) have been made resulting in higher agricultural productivity. Mutsvangwa-Sammie and Manzungu (2013) cite the link between the agricultural revolution in Asia and Zimbabwe in the following way: "There are thus many efforts aimed at promoting agricultural innovations by national governments, public and private research institutions. By and large the interventions are modelled on the Green Revolution, which succeeded in Asia,

South America and Europe. The Green Revolution is based on growing high yielding crop varieties. Mlambo and McCarter (1999) note the success story of the Green Revolution in Asia as a result of the deliberate selection of desirable genes in crops. In Africa in general and Zimbabwe in particular, Mlambo and McCarter note that problems of food insecurity could be averted by the adoption of genetic engineering in agriculture. Alumina and Rusike (2005) expound the success of the Green Revolution in Zimbabwe through the development and introduction of the hybrid seed maize in Zimbabwe.

Research in agriculture over the last 50 years is well-documented (Alumina and Rusike, 2005; Makuza, 2005; Nyamangara and Mpofu, 1996; Namasasu, 1988; Svubure, Mpepereki and Makonese, 2010; Matondi, Masama, Mpofu and Muronzi, 2007; Vincent and Thomas, 1961; AGRITEX, 1982; Grant, 1967). This research has not generally been made available to indigenous people in their languages. The majority of indigenous farmers in Zimbabwe who contribute more than 70% to the total agricultural production have little access to these documents. The situation is exacerbated by the lack of books written in the indigenous languages (e.g. Shona, Ndebele, Kalanga, Changana and Tonga) spoken by indigenous farmers around the country. Although Zimbabwe has the highest literacy rate in Africa (*The African Economist*, 2013), the majority of the local smallholder farmers are more comfortable using and understanding local languages as compared to English. Furthermore, the indigenous farmers perform their daily tasks in the indigenous languages. It is, therefore, imperative that science and technology are made accessible to them in a language (a mother tongue) they understand better. The success of China and Japan, for instance, is modelled on the translation of technical knowledge into indigenous languages that an ordinary factory worker could understand and enhance production and innovation. Limited access to agricultural information such as value addition, markets and new technologies for the smallholder farmers has contributed to increased poverty and lack of development in their areas. It is thus proposed that the development of a people's language can lead to the creation of opportunities to address the challenges faced by local communities.

Colonial history has been unjust to Africa's development, particularly in the realm of indigenous languages, because African languages were relegated to the status of 'inferior' languages that are incapable of naming and describing scientific, technical, legal and economic issues (Webb, 2013; Huyssteen, 1999; Prah, 2000; Brock-Utne, 2000, 2003). Two fallacies concerning African languages that this chapter attempts to dispel are:

i. Most African languages have not developed the scientific terminology needed in the 21st century industrialised society;
ii. Scientific concepts cannot be expressed in African languages.

The fallacies cited are a result of the attitudes with which African languages are regarded, even by their speakers. African languages are perceived as being incapable of being used for science and technology as well as for serious academic debate. Further, even the research and teaching of African languages is conducted in English, for example, the work of Fortune (1980) and Doke (2005) for Shona. Such work entrenches the view that African languages are ill-equipped to be used in their own research and teaching.

Brock-Utne (2000:11) argues that "any language can be a language of science and technology. If one wants to bring science and technology to the people, it has to be done in a language the people understand and communicate well in." In other words, all languages have the capacity to be developed for technical, scientific and academic purposes. Fafunwa (1990) and Bodomo (1996) claim that there seems to be a correlation between underdevelopment and the use of a foreign language or the non-use of local languages. As Fafunwa (1990:103) states:

> We impart knowledge and skills almost exclusively in these foreign languages, while the majority of our people, farmers and craftsmen perform their daily tasks in (indigenous languages) … The question is: why not help them to improve their social, economic, and political activities via their mother tongue?

Hence, little or negligible development of a people's language translates to a lack of development in their local communities. Yet one can argue that conveying information to people in a language they understand is likely to yield more benefits in the future because the people would have confidence in their languages and thus be able to implement developmental initiatives communicated to them. These developmental initiatives become ineffective when language barriers prevent access to basic information.

One of the United Nations' Sustainable Development Goals (SDGs) adopted in 2015 and to be achieved by 2030 is the eradication of poverty and hunger. The website Global Issues (www.globalissues.com) states that the poorest people are also typically the marginalised from society who have no

representation or voice in public and political debates. The lack of a voice can partly be attributed to limited access to information in one's language. It is estimated that 65% of Zimbabwe's population is rural-based (ZIMSTAT, 2012). It is this rural populace that is most affected by poverty, hunger (from poor harvests and/or pests), disease, infant mortality, etc. Hence one can argue that these malaises can be significantly reduced if information pertaining to poverty reduction, suitable agricultural practices and health issues are communicated in a medium people understand well. People are thereby empowered to participate in the discourse on these issues. One can further argue that the rural populace can improve their livelihoods if it is able to access information on crop and animal production technologies such as new seed hybrids, drought resistant crops, soil and fertiliser types, crop production enhancement, livestock diseases and treatments, livestock improvement, and post-harvest storage. This is also important for the rural populace in that it facilitates access to markets for their produce through using their languages in negotiation, transaction and other marketing issues.

Mother tongue education proponents argue that there is little development and innovations in science and technology in Africa because children are taught in a language that they are not fully conversant with. This has had a negative effect on creative thinking (Desai 2012; Nomlomo 2007; Dlodlo 1999). Therefore, it becomes a struggle for these children to learn new concepts of science and technology in a foreign language. Further, concern has been raised over the paucity of students pursuing mathematics and science subjects at Advanced Level (Form 5) in Zimbabwe hence the Ministry of Higher and Tertiary Education, Science and Technology Development's move to promote science, technology, engineering and mathematics (STEM) education. This can be attributed largely to the medium of instruction in Zimbabwe's education system. Students may not have grasped the concepts and can, therefore, not relate them to their daily livelihoods. Therefore, science and mathematics become "foreign" subjects. Yet the very same subjects could be simplified if taught in the mother tongue.

The medium of instruction in Zimbabwe is English, yet the majority of learners and their teachers lack proficiency in the language. It can even be maintained that the "educated" do not possess the proficiency of English required to be technologically and scientifically creative. Furthermore, beneficiation for the local communities would be realised if indigenous languages are used as the medium of instruction. Studies on mother tongue education (Brock-Utne, 2000; Nomlomo, 2007, 2009) show that when there is a mismatch

between the medium of instruction and the mother tongue, there is a barrier which inhibits the learner from grasping most concepts. It is a proven fact in studies on mother tongue education that if a concept is explained to someone in their mother tongue, there is close to greater percentage in understanding, retention and application as opposed to the concept being explained in a second or third language (Nomlomo 2007, 2009; Desai 2012; Brock-Utne 2000, 2003). In this regard, it would undoubtedly be beneficial for local communities that indigenous languages are developed to the same level as English and other ex-colonial languages. The use of African languages in specialized fields such as agriculture, mining, climate change, sustainable development, rural industrialisation, ICT as well as in science and technology has remained marginal. Therefore, it is crucial to make information on these and other areas accessible in local languages for local consumption.

Language and Agricultural Development: The Nexus

Agricultural production in Zimbabwe increased by 100% between 1980 and 2000 due to technological advancement by means of the use of herbicides, pesticides, hybrid seed as well as water and soil conservation techniques such as irrigation (ZimVac, May 2013). Regrettably, agricultural research and documentation are still conducted in English in a context where the majority of rural farmers in Zimbabwe do not have a good command of English. As a result, there is no correlation between language and development in development discourse. For instance, some farmers often use the wrong type of agro-chemicals or dosage because of the communication medium. The Herald newspaper (28 October 2014) carried a story titled "Health and Safety on Farms" which reported on some of these issues on farms in Zimbabwe. In some cases, there is a failure to interpret symbols and labels on agro-chemicals, for example, the red and purple triangles which are used as universal notations in agrochemical use. Language thus presents a major barrier to scientific and technological transfer in Zimbabwe. It is imperative that a concept referred to as language-based development be initiated for local communities. Language-based development ensures that a people's language continues to evolve to capacitate it to meet developmental needs. (www.sil.org).

In short, we are referring to knowledge and information packaged in African languages. Language in Africa and in Zimbabwe in particular, has not been mainstreamed into the development discourse, something that should be a given since language is the primary vehicle of information. Lessons on this can be drawn from developed countries where the mother tongue as medium of

instruction and as official languages. Cases in point are Norway (Norwegian), Japan (Japanese), Germany (German), Russia (Russian) and Great Britain (English). The pivotal role of the mother tongue and the development nexus cannot be underestimated. In these countries, the mother tongue enjoys national and official status. The mother tongue is also the medium of instruction in schools. Consequent upo these trends, these economies have developed because they realised that language is a fundamental tool of communication and subsequently of development. Mpofu-Hamadziripi and Masuku (2014) impress upon the fact that no country or economy has developed while it relegates its indigenous languages to a secondary status. Further, Prah (2000:71) observes that, "No society in the world has developed in a sustained and democratic fashion on the basis of a borrowed or colonial language …" In this regard, it would be futile to pursue research and technological advancement if there is no information transfer to the grassroots. African languages, and indeed other languages as well, cannot be separated from the dialogue of sustainable development. Taken in context, for smallholder farmers to be able to sustain their livelihoods, developmental initiatives and transfer ought to be communicated to them in a language that they understand. Information that is packaged in the farmer's mother tongue can be understood, shared and applied to tackle issues in their daily existence. The use of African languages in science and technology for sustainable development will achieve the following:

i. Knowledge-building in science and technology;
ii. Science and technology development;
iii. Increased self-reliance in people by providing them with knowledge and imparting skills in the mother tongue;
iv. Poverty reduction and transformation of societal and developmental issues by providing knowledge of science and technology to the people in their own language;
v. General economic development of individuals and communities through knowledge transfer.

The leading sectors of Zimbabwe's economy (e.g., agriculture and mining) are led by small-scale players who would benefit immensely if information were made available to them in their language. These individuals, if empowered and capacitated through their languages, can also impart the said skills to their peers. Sustainable development is not merely a developmental or socio-economic

phenomenon. Rather, it is interrelated to a people's language and culture. Mapara and Mpofu-Hamadziripi (2014:170) opine that:

> Cultural heritage and other knowledge forms are passed down inter-generationally through language and related activities. In fact, knowledge as awareness as well as a comprehension of facts as true or not, and information gained through experience are all imparted through language.

Local companies dealing in agricultural inputs and chemicals could start by making concerted efforts to translate information into indigenous languages to make it accessible and comprehensible to the local people. Access to information on technology can enhance agricultural development through increasing productivity. Roy-Campbell (2005:3) observes that, "African countries receive knowledge, know-how, technology, books, etc. from other countries, particularly the West, but are not seen to contribute anything of 'recognised value' to the global knowledge pool".

The major factor contributing to the sad picture depicted by Roy-Campbell is language. Indigenous languages should, therefore, be empowered to play an important role in sustainable agricultural development. Sustainability can be promoted in agriculture by imparting scientific agricultural information to the local people in their mother tongues. This should enable the transfer of knowledge to their day-to-day experiences. To show how this might work, the sections that follow illustrate the use of scientific agricultural information for technological development in agriculture using indigenous languages and how this could promote sustainable development. Illustrations are given in land use for agricultural purposes, herbicide and pesticide uses, weed management, pests, livestock and poultry diseases, grains, soil and water conservation technology, as well as plant and animal breeding.

Land use for Agricultural Purposes

Soil texture (i.e. proportion of sand, silt and clay of soil) can be used to make inferences on land use in local languages. The following are some examples in Shona:

Table 6: Different soil types and agricultural use

Soil type	Translation	Agricultural use
shapa	sandy soil	grazing land; tobacco farming
chidhaka	black clay soil with shrink swell properties	cotton and sugar cane growing
katondo	red clay soil	maize;
Rondo	low active clay soil	pottery but marginally/unsuitable for cultivation
rusekenya	deep sandy soils	infertile soils
gokoro/ chibvurwi	saline and sodic soil	soils with high concentration of salts often used as salt licks for cattle;marginally/unsuitable for cultivation

Language and Herbicides/Pesticides Use

In the earlier sections, we alluded to the case of the misuse of herbicides and pesticides on farms in Zimbabwe. The authors are convinced that if the agro-chemicals were to be labelled in local languages it would be easier for the farmers to read and comprehend what the chemical is and what it is used for. A few examples will suffice:

Table 7: Herbicide/Pesticide terms adapted into Shona

Shona adapted word	Trade name	Use
Parakwati	Paraquat	herbicide used on various crops except tobacco
Atirazini	Atrazine	herbicide used on maize
Roga	Rogor	pesticide for aphids
Bhasagirani	Basagran	herbicide for maize, beans
Durango	Durango DMA 4S	herbicide for maize
Giramozoni	Gramoxone	herbicide for various crops

There are some documented (University of Zimbabwe-DFID-CPP) herbicides used by farmers in Zimbabwe, for example, servian (used to kill sedges),

bentazone (used to control broadleaf weeds such as *mowa - Amaranthus hybridus*), glyphosate (used to kill grasses such as *nzai*, *rusikira* and *pfende – Cyperus esculentus*), roundup and gramoxone. Further research needs to be conducted to explore how the smallholder farmers refer to each of the various types of herbicides, fungicides and insecticides that they use. Should the results indicate that there are no readily available terms for these products in local languages, it then becomes imperative for terminology development in this area to be done as a way of developing and empowering indigenous languages.

Indigenous Words for Weeds

Agriculture has been the mainstay of the lives of the indigenous peoples for centuries, hence indigenous people have terms for such phenomena as weeds as indicated in the examples below. What is perhaps needed is that information on the management of these weeds be made available to communities in their languages.

Table 8: Indigenous terms for weeds

Indigenous term	Translation	Scientific name
pfene/pfende	yellow nutsedge	Cyperus esculentus
Tsine	black jack	Bidens pilosa
tsangadzi	star grass/couch grass	Cynodon Dactylon
dambatamba	crawling weed	Comelia Africana
mugupa	Lantana	Lantana camara
zhombwe	leguminous herb/shrublet	Neorautaneniaamboensis
nzai	perennial grass commonly found in vleis	
rusikira	perennial grass commonly found in vleis	
chinzungu	Mexican clover	Richardiascabra
jekacheka	Blister sedge	Carex vesicaria

Grains

The examples in Table 9 illustrate that there are several terms for referring to grains in Shona depending on the geographical area that the term is used in. For instance, *chibhubhani* in the first example is also known as *gopani* in other Shona varieties. Grains have been grown for centuries in Shona communities hence the rich repertoire of terms. Table 9 gives the various names of some cereals according to geographical location.

Table 9: Indigenous terms for grains

Indigenous term	Translation	Scientific name
chibhubhani/gopani	open-pollinated maize variety	Zeamais varieties
gangara	red sorghum	Sorghum bicolor varieties
chibhedlani	sorghum variety	Sorghum bicolor varieties
chihumani	sorghum variety	Sorghum bicolor varieties
mukadziusaende	short season maize variety	Zeamais varieties

Soil and water conservation technology

Soil and water conservation technology is informed by indigenous and experiential knowledge as the examples in Table 10 below illustrate.

Table 10: Indigenous terms for soil and water conservation technology

Technique	Translation
kondiwa/gandiwa	contour
kurima mbeu dzakasiyana pandima imwe chete	polyculture/intercropping
chinjiri	terracing
Makombi	infiltration pits
kupindura munda	early (winter) ploughing

Plant/Animal Breeding

The examples presented in Table 11 show that even new technologies used in agriculture in the spheres of plant and animal breeding can be articulated in the local languages by inference to already known traditional techniques such as *kuuchika* (fertilisation/strengthening of seed).

Table 11: Indigenous terms for plant and animal breeding

Indigenous term	Translation
kuuchika mbeu	plant breeding
kuuchika mhuka	animal breeding
Chibereko	uterus
Kuteerwa	on heat
kuita zamu	gravid

The examples in Table 11 show that there is room for the creation of more terms in this area of agriculture to cater for the new technologies that are being used such as artificial insemination.

Pests/Parasites

What we have said about weeds in the previous section is similarly applicable to pests. As the examples show, terms exist in Shona of names of pests and parasites that affect crops, livestock and poultry. Table 12 gives the names of parasites that affect crops, livestock and pests.

Table 12: Indigenous terms for parasites

Indigenous term	Translation	Scientific name
Mhunduru	Armyworm	Spodopteraexempta
chipfukuto	Weevil	Sitophilus zeamais
mhashu	Locust	Locust sp.
gandari	caterpillar	Gonanisamaia
chishambwe	Tick	Boophilus sp.
Inda	Aphid	Aphis sp.
Jekecha	Mite	
Nhata	Flea	

Livestock and poultry diseases

The examples in Table 13 demonstrate that the terminology for some concepts in agriculture form part of the indigenous languages' repertoire.

Table 13: Livestock and poultry diseases

Indigenous term	Translation
Tungundu	anthrax
Chikwekwe	tick-borne disease

Chibhubhubhu	Newcastle disease
mateya	rickets
mahwanda	foot and mouth disease

The livestock diseases *tungundu* (anthrax) and *chikwekwe* (tick-borne disease) are in turn associated with their diagnosis and treatment. For instance, *chibhubhubhu* (Newcastle) is treated using teramycine or aloe (*gavakava*). Use of these and other terms and in some cases, their creation thereof is a possible avenue for the transfer of knowledge to local farmers, a process that contributes to sustainable development and sustainable livelihoods. For African communities to become contributors and not merely receivers or passive participants in the global economy, it is of paramount importance that information is packaged in a language that the people are familiar with and identify with. Transmitting information to people in a language they understand is likely to yield more benefits in the future because people have confidence in their languages and are thus able to implement developmental initiatives communicated to them (cf. Magwa and Mutasa 2007). These developmental initiatives become ineffective when language barriers prevent access to basic information. The ensuing section discusses the processes of the development of scientific terminology, the prerequisite for information transfer and the subsequent localisation of knowledge.

Scientific Terminology Development

Terminology is that vocabulary belonging to a specific subject field (Sager 1990; Kageura 2002; Cabré 1999). Terminology development, then, is an activity concerned with the collection, description, processing and presentation of terms belonging to specialised areas (Sager 1990:2). Based upon the ensuing, terminology can thus be said to belong to a specialised field of study and in that way is differentiated from ordinary terms that are found in a language. Developments in science and technology demand that new terms or neologisms for these concepts be created to name the new creations. Sager (1990:79) states that "for all sciences and technologies new terms are regularly required for new objects, parts of objects and new processes." These terms in languages are created through two different processes, namely, primary terminology development and secondary terminology development (Sager 1990:80).

Primary terminology development

Primary terminology development is monolingual and it entails term creation that is motivated by inventions in a particular society. This type of terminology development occurs within a particular language. For instance, through compounding in a noun like *vhenekeratsvimborume* (evening star) which is a complex noun made up of the imperative verb *vhenekera* (provide light for) and the noun *tsvimborume* (bachelor/widower). In this example, the compound noun *vhenekeratsvimborume* which literally refers to the evening star providing light for bachelors or widowers who may be out late at night because there is no wife to go home to was created within the language to name a phenomenon as a result of how it is conceptualised. Another method of primary terminology development is semantic expansion whereby a term may be given another meaning in addition to the already existing meaning. For example, the term *kupfeka* (to be dressed) also refers to the membership and permission to wear the prescribed uniform of an association or guild in churches. In English, the term mouse originally referred to a rodent but its denotation has been semantically expanded to the field of computing to refer to a hand-held device which controls the movement of a cursor on a computer (Oxford Dictionary of Current English 3rd edition).

Secondary terminology development

The other process of terminology development is referred to as secondary terminology development and it occurs when new objects and concepts are transferred from one linguistic community to another. According to Sager (1990), this process is as a result of knowledge transfer from one linguistic community to another. Unlike primary terminology development, secondary terminology development can be bilingual or multilingual. The various processes of secondary terminology development were outlined by Sager (1990). The next section gives examples of secondary terminology development in Shona.

Borrowing and adaptation

This refers to the process of adopting a term from another language and adapting the said term to suit the morphological and phonological structures of the receiving language. The Shona examples in Table 14 highlight the adoption and adaptation of words borrowed from English and Portuguese:

Table 14: Adoption and adaptation of agricultural terminology

Term	**Translation**
hekita	Hectare
Parakwati	Paraquat
Kombaini	combine harvester
Kudhisika	to disc
Fetiraiza	Fertilizer
irigesheni	Irrigation
dhirihora	drying hall
kombositi	Compost
Riji	Ridge
Irigeta	Irrigate
Purazi	farm <*prazo* – Portuguese
chikochikari	scotch cart

As a result of language and cultural contact, Shona has borrowed predominantly from English, Afrikaans and Portuguese, as the preceding examples in Table 9 illustrate. The terms above are referred to as loanwords, which according to Mpofu-Hamadziripi, Ngunga, Mberi and Matambirofa (2013) are brought into a language to fill in a terminological gap in instances where an indigenous term does not exist to name or refer to a new thing or concept.

Loan Translation

Loan translations are words borrowed from another language and subsequently translated into another language. The examples in Table 15 are words and concepts borrowed from English and translated into Shona:

Table 15: Loan translations

Term	**Translation**
Rima	plough, cultivate
Badza	Hoe
Gejo	Plough
Mushonga	medicine, pesticide, herbicide
Kudyara *Kusima*	to sow to plant

Diridza	water/irrigate

Coining

Coined words, also referred to as neologisms, are words that are created in a language to address a terminological gap for new concepts that would have come in from another language through the contact between two different peoples and cultures. The examples in Table 16 illustrate the terms coined in agriculture to name new concepts in Shona:

Table 16: Coinages

Term	**Translation**
huku dzemazai	layers
huku dzenyama	broilers
mushonga wemasora	herbicide
mushonga weumhutu	insecticide

Sager (1990:83) reiterates that language development should be a precondition to economic and social development. Language development, therefore, becomes the first and necessary step for scientific and technological development, particularly for developing economies. Without a concerted and conscious effort to develop local languages, all facets of development (scientific, technological, industrial, and economic) remain confined to ex-colonial languages which are in fact a barrier to the grassroots to whom such development should be of benefit. There is a mutual relationship between language, knowledge and the economy of a country as evidence suggests that strong economies have well-developed languages.

A community-based approach to sustainable development recognises the pivotal role played by language in the dissemination of information to local communities. In this case there is a need for the empowerment of Zimbabwe's indigenous languages through the development of various, relevant terminologies. This means recognising both the linguistic and communicative aspects of a language and thereby developing a framework for terminology development for that language. Such a framework would include, but would not be limited to:

- Language planning and policy formulation

- Actual terminology development in indigenous languages
- Standardisation and dissemination

Language planning and policy formulation

Language planning refers to the various ways of influencing the way a language is used. Wiley (1996:104) states that language planning and policy must consider the social, economic, political, and educational contexts within which a language will be used. Status planning is an ancillary process to language planning and it involves mapping out the functions that a language will play within the society. Language planning and policy formulation are interrelated processes in that the planning of how a language will be used and its status in society are instrumental in the formulation of policies pertaining to that language. Policy formulation, for instance, will address such issues as the inclusion or exclusion of a language in the education system, the place of that language in the wider socio-economic spheres and the official status of the language among other issues. Suffice to say, policy decisions are government decisions, hence it is government officials who decide the official status of languages as well as its place in the education curriculum. Haugen (1957, 1966) used a four-pronged model to describe language planning as follows: selection of a norm, codification, implementation and elaboration. Chimhundu (2010:114) states that there has yet to be a policy framework as well as a responsible body for the implementation of such a policy in Zimbabwe. What we have now are uncoordinated attempts of developing the language but with no one overseeing the development and standardisation of the language.

Actual terminology development in indigenous languages

The development of terminology would be the ancillary process after the planning and policy stages. The foregoing discussion has already examined the rationale for terminology development in African languages as well as the various processes of development. Perhaps what can be pointed out here is that the actual development of terminology is determined by the language planning and policy processes. Louwrens (1997) states that any effort to expand the scientific terminology of an African language rests on the tacit assumption that, in future, the language will become a language of learning. There have been concerted efforts to develop terminology in Zimbabwe's indigenous languages by the African Languages Research Institute at the University of Zimbabwe, perhaps also based on the assumption that someday these languages will become media of instruction in the education system. Notable are the terminological

dictionaries of music in Shona and Ndebele, *Duramazwi reMimhanzi* and *Isichazamazwi sezoMculo* and a biomedical terms dictionary in Shona with an English index, *Duramazwi reUrapi neUtano* (2004). The musical terms dictionaries sought to standardise the various terms used in the teaching of music in schools, colleges and universities in Zimbabwe. The biomedical terms dictionary, on the other hand, had among its purposes that of "educating" the young generation doctors of the terms and nuances used in the medical fraternity, thereby seeking to standardise and harmonise these terms. These efforts can be replicated in the other specialist areas such as agriculture, technology, etc. Louwrens (1997) articulates the challenges of developing scientific terminology in African languages amidst the attitudes of scholars as well as the lack of serious efforts by policy-makers to grant the languages a place in education and thereby ultimately empowering the languages for them to be used in all spheres of life.

Standardisation and dissemination

Language standardisation is the natural development of a standard language in a speech community or a conscious attempt by a speech community to develop a standard language (Crystal 1997 cited in Mpofu and Mheta 2010:159). In this chapter, we refer to standardisation as the process of seeking the acceptance by specialists of the plethora of terms created. In other words, the terminology that is created needs acceptance by the users of the language, hence standardisation entails the dissemination and testing of the terminology to the wider community of users. If the terminology created is agricultural terminology, then it follows that it will be tested on all people in the agricultural sector, including smallholder farmers, extension workers, academics, and other relevant stakeholders. The terminology that is created has to go back to appropriate users so that the users can buy-in to the processes involved. The users are the ultimate owners of the terminology and from past experience, the users at grassroots level are the ones who will provide honest and reliable feedback on the acceptability or otherwise of the terminology. For instance, the terminological dictionaries cited above used what were referred to as Reference Working Groups (RWGs) which comprised experts in the two specialised areas, namely, music and biomedicine. The consultations and feedback of these RWGs formed the bed of the publications that were produced. The users of the language at grassroots bring us to the issue of indigenous knowledge and its importance in terminology development.

Indigenous knowledge systems and terminology development

A local people's indigenous knowledge system is a major asset for terminology development. This is so in that when terminologists create or coin terms, they rely on the terms or knowledge of the local people. The starting point for any terminology development is, therefore, to capture the terms used by the local people for naming. This ensures acceptance and subsequent standardisation of the terms by the local people. It would be futile to create or coin terms that are not or will not be used by the users of the language. This is why terms such as *dzimudzangara* and *simbiutare* to refer to the television and the bicycle, respectively, were shortlived in the Shona lexicon because the speakers of the language do not use those terms but were merely coinages that proved to be transitory (Mpofu 1995) Further, from the indigenous knowledge of the Shona people, *chirenje* (terracing) is used to curb soil erosion. Also, cow dung (*ndove*) is spread on granary floors to ward off weevils (*zvipfukuto)*; seed for the next harvest is preserved by smoking it, and the process is referred to as *kuchengetedza mbeu yakasvika* (selecting and preserving the best seed for the next cropping season); planting different types of crops on the same piece of land improves soil fertility and reduces pests and diseases. In addition, ash (*dota*) is a good source for potassium in soils. Farmers have a wealth of traditional knowledge and techniques for farming, conservation agriculture, grain preservation, and pesticides that have been used and passed on from generation to generation.

Nyahangare, Mvumi and Mutibvu (2015), Maroyi (2012) and Gumbochuma, Hamandishe, Nyahangare, Imbayarwo-Chikosi and Ncube (2013) document ethnoveterinary medicine in some rural areas of Zimbabwe. For example, *zumbani* (*Lippia javanica*), is used to control ticks, fleas and lice in livestock and poultry, the fruits of the *nhundurwa (Solanum incanum L.*) can also be used to control ticks while ectoparasites are controlled by the leaves of the *muvengahonye* tree (*Psydrax livida* [*Hiern]*) and *gavakava* (*Aloechabaudii*) Diarrhoea in animals and poultry is treated with the bark of the *muchakata* tree (*Parinari curatellifolia).* The research by these scholars is evidence that there is a wealth of knowledge on traditional veterinary techniques used by farmers. Such research also proves that this knowledge can be transferred and integrated into scientific and technological discourse. More of this knowledge needs to be researched into, collated and disseminated for the sustainability of local communities and for future generations. An International Fund for Agricultural Development (1978: 2003) paper highlights that "…strengthening cultural identity and promoting sustainable economic development are mutually reinforcing, rather than mutually exclusive, objectives." Further, Dhewa (2010:1) observes that Africans possess a

wealth of knowledge pertaining to agriculture, forestry, medicines and medical practices which is contained in the indigenous languages and cultures of the people, and if harnessed, this knowledge can make an immense contribution to modern science. Dhewa laments the fact that this local knowledge remains on the sidelines as a result of the marginalisation of African languages and cultures to the extent that this knowledge remains localised.

Conclusion

There is a need to develop terminology for the agricultural sector (agronomy, animal production, horticulture, etc.) to enable the smallholder farmers to be able to access information in their languages on new developments and technologies. The involvement of smallholder farmers is paramount to the success of any research undertaken because these same farmers are the custodians of traditional and indigenous knowledge, from which researchers can benefit immensely. The integration of science and technology with communication sciences or languages can add a lot more value to innovations in research and technology. What is perhaps needed is a policy shift by African governments to invest resources in the intellectualisation of local languages through translation and terminology development activities so that local knowledge is mainstreamed into science, technology and development.

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CHAPTER 7: MUSICAL ART AND SUSTAINABLE DEVELOPMENT: THE CASE OF OLIVER MTUKUDZI'S ALBUM, *SARAWOGA*.

Shadreck Nembaware

Abstract

This chapter explores the educational and aesthetic elements in the lyrics of *Sarawoga*, the 2012 music album of the Kora award-winning Zimbabwean musician, Oliver Mtukudzi. The chapter submits that music is a veritable way of transferring skills from one generation to another, thereby serving as an indisputable support to the agenda of sustainable development. The music tracks under study are arguably anthropological windows providing existential lessons couched in Indigenous Knowledge Systems (IKS) passed from one generation to another sustainably. A loaded carrier of African proverbial wisdom, Mtukudzi's music performs the didactic role of moralising, conscientising, instructing, warning, admonishing and equipping its audience. With its decidedly adventurous fusion of multiple tastes, sub-genres, modes and varieties, the music projects a rich cultural universe that is at once self-regulatory and purposively instructional. Fostering the agenda of sustainable development, the net effect of Mtukudzi's music is a nuanced model of edutainment, where the songs are both aesthetically pleasant and educationally potent in disseminating lifelong lessons sustainably. The riddles, proverbs, axioms and truisms of the Shona community are foregrounded as the accessories for the merits of Africa's culture which has sustainably endured the test of time. The art forms of such a cultural sphere characteristically manifest the schooling, tutoring, grooming and mentoring functions that negotiate the complex pathways of human and social development. Such is the matrix against which Mtukudzi's music furnishes its audience with a type of 'pedagogy' (Freire; 1970; Moyana; 1989) – a purpose-driven educational philosophy that possesses both idea-generating and liberating functions. The chapter submits that Mtukudzi's songs belong to a body of art at the centre of Africa's fine-tuning curriculum with home-grown instructional models that fare sustainably in the puzzle of emergent global currents.

Introduction

On the back sleeve of the album, *Sarawoga*, one reads the heart-rending words, 'Rest in peace my son.' Dedicated to his late son, Sam Mtukudzi, who died in a tragic road accident in 2010, Oliver Mtukudzi's album, which is the singer's first

release since the sad loss, notably registers profound thoughts on a work that was initially meant to be a collaboration between father and son, had it not been for fate's lethal blow. 'Sarawoga' literally translates to 'Be Left Alone.' Significantly, the title also conjures up the mental health paradigm where 'being alone' could imply introspection and thinking through pathways into the healing sphere. Thus, elements of traditional continuity are projected as the bedrock for postmodern health care fundamentals, with cultural essence sustainably holding firm in the wake of emergent curative models. The album title, 'Sarawoga' is a mournful message by a father trying to come to terms with the painful reality of loss. Mtukudzi also launched a DVD entitled *Nzou neMhuru* (An Elephant and its calf), which profiles him and his late son working together in the music industry. With *Sarawoga*, the amazing fact is that despite its immediate meaning as a bereavement landmark, the album artistically distils life's commonplace day-to-day circumstances and packages them into invaluable vicissitudes drawn from the textbook of human experiential wisdom, hence its message is not distanced from the social realities of the audience community. The net effect is a riveting catalogue of life's great lessons from the rich perspective of an African worldview, whose merits can be passed on to posterity.

Cutting across an array of subjects including parent-child relationships, hospitality, the dignity of human labour, the ingenuity of applied knowledge, socio-political cohesion, peace building, survival skills and communal harmony, the collection of songs characteristically evokes a sense of the African community's warmth, exuberance and collective identity. Pienaar (2003:1) perceptively unpacks this definitive element of African life and essence, the profound Unhu/*Ubuntu* philosophy, potently encapsulated in the dictum 'I am, because we are.' Accordingly, community and group care are placed above the focus of the self. Resonating with this philosophy, Sarawoga's songs demonstrate that the survival of the African people is based on *Ubuntu*; communal or familial group care and a solid, collective unity. Running across the thread of songs in this album is the common understanding of a people's undeniable interdependence from an African society's perspective. Denoting a traditional African concept, the philosophy of *Unhu*/U*buntu* can be roughly interpreted as humanity towards others. This is because it embodies all those virtues that maintain harmony and the spirit of sharing among the members of a society. This customises the African concept of *Ubuntu* and brings it closer home to Zimbabwe as 'hunhuism.' Samkange (1980) submits that a key defining feature of this philosophy comes through in the assertion that to be human is to affirm one's humanity by recognising the humanity of others and, on that basis, to

establish respectful human relations with them. Mtukudzi's songs become decidedly educational as they demonstrate the practical applicability of this shared philosophy.

Mtukudzi's message is always given shape by metaphor drawn from simple everyday experiences which are easy for the audience to relate with. Projecting imagery, well-calculated snapshots and sweeping political statements, the singer's lyrics characteristically obtain from a rich source of vivid metaphor found in Shona, the majority indigenous language of Zimbabwe. His music finds its beginnings in traditional sounds, a more literary approach to expression with obvious aesthetic effects, yet which also manifests the full ambiguity and complexity of life. The place of metaphor in human language and life in general is aptly captured by Sweetser's (1990:145) observation that there is a pervasive metaphorical structuring of our mental world in direct relation to our physical world. Because of the multiple layers of meaning interwoven in the fabric of his music, Mtukudzi's songs generate endless metaphorical possibilities embedded in the fluidity of language. Such is the mark of the artist's mastery that his collage of mental images configures and projects the mysteries of human existence and aspirations.

Although depicting a decidedly Zimbabwean environment, Mtukudzi's music notably celebrates the interdependence of various cultural experiences. One gets a strong sense of the musician's efforts to locate the place of Zimbabwe in the complex puzzle of global cultures, showcasing commonalities and divergences evident in multicultural interactions. Such is the struggle for sustainable development to capture the future aspirations of the people and locate it in the global development agenda. Fitting squarely into the ethos of postmodern efforts at integration and egalitarianism, Mtukudzi's multicultural motif echoes Trotman's (2002:10) argument that multiculturalism highlights the neglected aspects of our social history and promotes respect for the dignity of the lives and voices of the forgotten. No wonder why in earlier albums, amidst the onslaught of a global human rights agenda, Mtukudzi revists traditions such as wife inheritance and asserts a social security dimension where he appraises the role of the "*Nhaka*"/Wife inheritance tradition as a social safety net that is very much needed in the face of the rising numbers of HIV and AIDS related deaths. He thus marries the new development agenda of social security as not alien to Zimbabwe but rather a modification of already existing traditions to suit the realities obtaining in that epoch. Usually accompanied by a mixed ensemble of young and veteran musicians, Mtukudzi consistently explores newer and subtler ways of drawing his listeners to greater thoughtfulness, and of enhancing his own

ability of expressing the universal in life's little things and titrating the old with the new. The musician's extensive tours around the globe have, for him, been a platform for showcasing immense talent, and also an occasion for self-discovery through an eventful learning curve.

Evidently, Oliver Mtukudzi's songs project a nuanced spectrum of complex circumstances that are true to human developmental experience. In the process, the music demonstrates life's existential lessons by unpacking the cultural nuggets wrapped in traditional Africa's proverbial wisdom. Because the wisdom celebrated is experiential, it forcefully registers on the audience's minds a sense of life's stubborn imperatives which sustainably hold their anchor despite the novelty of new cultural experiments. For Mtukudzi, the bedrock of such sterling prowess is the rich Shona language and its limitless possibilities. Mtukudzi's use of culture to spur humanity into the future is not only evident in Sarawoga but in earlier productions like "Mutserendende" where he acknowledges the changes in life today and helps humanity to adapt to changing cultures, but in a slow and sustainable way through taking bite-size reforms rather than executing a complete overhaul of a people's knowledge systems guised as development. He encapsulates the need for participatory development which celebrates the agency of beneficiaries in the development agenda rather than the reverse where the poor and underdeveloped are seen as subjects with limited influence over the course of the development path. He concludes "Mutserendede" by saying "*Kukwira gomo hupoterera*" which means to achieve growth, development and success you need to take a sustainable incremental approach. Mtukudzi evidently believes in the power of the local community's participation in their own development when he says, "Life is what you make it/*kurarama huite madiro*"

Theoretical Framework

The chapter employs the Afrocentric theory as the critical anchor for exploring the music of Oliver Mtukudzi. Sibanda (2008:36) cites Mtukudzi's remarkably telling submission, 'You don't get to sing a song when you have nothing to say.' As such, Mtukudzi subscribes to the understanding that art is only worth its name when it conveys a message or when it serves a recognisable purpose. Artists who are driven by an Africa-centred consciousness share in the common knowledge that for Africans, art is purposive or utilitarian in nature. In his very scathing collection of essays, *Morning Yet On Creation Day*, Achebe (1975:19) asserts that 'art for art's sake is just another piece of deodorised dog shit.' Bekerie (1994:131) defines Afrocentric theory as a philosophy that recognises the need to

look at Africa's cultures and history from their own centres and location, driven by the endeavour to validate, regenerate, create and perpetuate African life and living – whole and unhindered, informed by an African perspective or world outlook. This is the anchor of sustainable development; the more it is rooted in the past and present realities of its intended beneficiaries the more likely it is going to be adopted and consequently sustained. As Asante (1988:5) puts it, the theory posits that African peoples are active, primary and central agents in the making of their histories. In exploring the Music of Oliver Mtukudzi, it is rewarding to adopt an anthropological approach to the culture that fibres the content of the artist's production in order to establish the phenomenal and phenomenological merits of the message conveyed by his music.

In the process of historically situating the music of Oliver Mtukudzi using Afrocentric lenses, it is also important to observe the characteristically polemic nature of the theory as a counter-discourse to Eurocentric notions of Africa. A proponent of the doctrine of 'Art for art's sake,' Whistler (2006:29) argues, 'Art should be independent of all claptrap — it should stand alone and appeal to the artistic sense of eye or ear, without confounding this with emotions entirely foreign to it, as devotion, pity, love, patriotism and the like.' Contemporary post-colonial African thinkers debunk this notion as being a limited and Eurocentric view of art and creation. In "Black African Aesthetics", Senghor (1956:211) argues that "art is functional" and that "in black Africa, 'art for art's sake' does not exist. It is against this background that one could read Mtukudzi's fruitful efforts to ensure adequate expression in his music, making the messages he conveys accessible enough to be appreciated. In his epochal essay, 'Artist, the Ruler,' from a book of the same name, p'Bitek (1992:39) believes

> ...a thought system of a people is created by the most powerful, sensitive, and imaginative minds that society has produced...the supreme artists, the imaginative creators of their time, who form the consciousness of their time. They respond deeply and intuitively to what is happening [today], what has happened [yesterday] and what will happen [tomorrow].

Emerging from this argument is the fact that every artist worth their salt is saddled with a bundle of responsibilities as reflected in their service to society. Such is the background against which Oliver Mtukudzi uses his music as a carrier of topical lessons for his society. Exponents of the Afrocentric school of thought

consider it a fallacy to divorce an artist from his duty to serve society, a duty that of necessity subsumes the artist's individuality under the society's collective ethos. Oliver Mtukudzi's songs can be rewardingly explored and studied with the full knowledge of the artist's ideological inclinations to the cultural imperatives of his African roots. An Africa-centred consciousness is the philosophical window that can help Mtukudzi's audience access the conceptual merits of the artist's music and lyrics.

Literature Review

This chapter departs from an acknowledgement of the sterling work by a variety of researchers on Zimbabwean and African music, especially considering the role of music and other art modes in configuring the cultural essence of the African peoples. In his analysis of selected music perceived to be challenging the Zimbabwean state, Mano (2007) submits that popular music competes and rivals mainstream journalism in the ways it addresses political, social and economic realities in repressive contexts. Obtaining from this understanding is the role of music as a subtle and perceptive model of addressing forms of marginality and oppression in society. The study at hand (albeit focusing on one artist's music album as a case study) also foregrounds the resourcefulness of music as a vector for indigenous systems of knowledge for the Shona community in Zimbabwe and for how sustainable they are. Music in a sense provides the barometer against which activities taking place in the country are reviewed by society, its mouthpiece being the musician. The Musician is by all standards the functional equivalent of the monitoring and evaluation system, calibrating the success of a society's development plan. Following Oliver Mtukudzi's performance at a function to celebrate the appointment of Joyce Mujuru of the ZANU PF party to the office of Vice President of the Republic of Zimbabwe on 13 March 2005, Chirere and Mukandatsama (2009:111) put together a hard-hitting article that critically distils divergent views spawned by Mtukudzi's action, particularly in the context of acute political polarisation in Zimbabwe. The ensuing debate and simmering notions notwithstanding, the cited article demonstrates the potency of Zimbabwean music (Mtukudzi's songs included) as a generator and barometer of meaning at various levels.

Revealing the powerful, though subtle political impetus in Mtukudzi's music that critics have largely overlooked, Chikowero (2007:36) discusses how Mtukudzi's music, by addressing the dynamics of conflict resolution and good governance imperatives, attempts to put into perspective leadership and governance by spelling out the expectations of the ruled, suggesting models for

mutually beneficial power paradigms within Zimbabwean and African contextual frameworks. Interestingly, Mtukudzi's music is shown to transcend simplistic 'protest music' as it proffers pragmatic strategies for principled negotiation in the wake of dissenting political voices in Zimbabwe. Vambe (2000) discusses the peculiarities of Mtukudzi's contribution to post-independence popular culture in Zimbabwe, arguing that in the wake of musical efforts by various Zimbabwean artists celebrating independence, the state sought to control the extent to which singers could define the meaning of independence. Vambe's submission is that the plurality of the singers' responses and their refusal to conform to a single definition of the idea of independence showcases what is distinctively popular in their works. The key understanding here is that meaningful scholarly work on the contribution of artists to any distinct discourse can be achieved by paying due diligence and respect to the unique flair and approaches of each artist, avoiding a stifling routine of bundling the artists' works under a generic and often-assumed homogenous bracket.

When exploring the direct relationship between popular music and language curriculum in Africa, Makoni et. al. (2010) observe that the extensive use of urban vernaculars in popular music has led to its popularity, and if these urban vernaculars are used as part of mother tongue education, socio-cultural relations between the school and society might improve. Emerging from this argument is the view that urban vernaculars not only provide access to education for a large portion of the population but also consolidate identities whilst affirming cultural roots and still appreciating that societies are transient rather than stagnant. Accordingly, it would appear that through popular music, urban vernaculars come through as possible media for education to society. Oliver Mtukudzi's music engages listeners in a musical discourse grounded in the indigenous Shona concept of '*hunhu*.' Kyker (2011) submits that based on principles of mutual respect, self-restraint and tolerance, *hunhu* articulates a vision of identity predicated upon moral relationships between the self and others, expressed through the common formulation of 'being a person among others' (*kuva munhu pane vanhu*). As such, Mtukudzi's distinctive style of popular music explores how kinship relations are negotiated both in the confines of the domestic sphere as well as in the wider context of community and society. *Hunhuism*, if translated to the wider global community, can encapsulate the concepts of human rights better to an ordinary Zimbabwe than the reverse where human rights are pushed down the throats of unappreciating audience.

Allen (2004) argues that popular music in Africa has become a major site for thinking through politics. Apparently, in many ways and on different

registers, people engage their political circumstances through music. Allen's submissions draw out the context in which Mtukudzi subtly bemoans the social inequalities in a society where power and resources are distributed unevenly. It is the same context where much else is deeply contested, including foundational identities and basic human rights. In a riveting analysis of the political economy of Zimbabwe, Chitando and Madongonda (2015) provide an incisive reading of Oliver Mtukudzi's song 'Nhava izere mhepo,' translated (the hunting pouch is full of air) where the song constitutes a giant metaphor of the extreme material depravity in Zimbabwe. The country's economic woes are the causative factors for the mass exodus of its citizens to become economic refugees marooned in diasporan uncertainties of the first world. Notably, Mtukudzi's music assumes an overtly political accent which resonates with the populace's cry for better living conditions and a modicum of sanity in the wake of dehumanising abject poverty. Mtukudzi's art foregrounds music's potency as an instrument for the accomplishment of multiple social functions.

Chitando and Chitando (2008) perceptively explore the role of music in responding to the HIVandAIDS crisis in contemporary Zimbabwe, foregrounding the signal positioning of music as a heritage that accompanies the African from the cradle to the grave. The writers direct focus at music's utilitarian value in consoling the bereaved and cementing relationships. Interestingly, the place of music as a copying strategy in the wake of contemporary Africa's struggle to contain the scourge is fully appreciated in the context of modern man's appropriation of music's merits in traditional African society by transposing the values, ethos and aesthetics of a by-gone era to fit them into the framework of postmodern concerns. Considering music's important role in the promotion and sustenance of human livelihoods, Shoko (2007) provides a case study of the Karanga people, a Shona sub-group in Zimbabwe, in whose community music foregrounds a worldview where health and wellbeing are key pillars. The inexhaustible prolific vogue of critical material by researchers exploring the works of musicians in Africa, and specifically Oliver Mtukudzi, reflects the resourcefulness of musical art in the configuration of thought and in the shaping of society. This paper only attempts a single dimension, the lessons drawn from Mtukudzi's hit album, *Sarawoga*. At the same time, the chapter compliments the work of various scholars, and together with them also contributes to critical discourse.

Music and Sustainable Development: The Interface

Before diving into the discourse of the album *Sarawoga*, it is prudent to establish

the conceptual linkages that exist between music and sustainable development. It is important to highlight from the onset that although the concept of sustainability is multifaceted, the physical elements of sustainability such as the depletion of natural resources are at the forefront. That is the reason why the word sustainability itself has become synonymous with the drive for environmental protection. This stance is understandable since the elements are the more easily visible and tangible aspects of sustainability. This chapter, however, is more focused on cultural sustainability. It is important to spell out that there is more to sustainability beyond recycling, planting trees, nuclear non-proliferation and reducing the carbon footprint. Sustainability actually widens to encompass three pillars, namely the ecological, the social, and the economic pillars. It is in fact a holistic model inadvertently hijacked by the donor-driven development industry. In its unadulterated form, sustainability encompasses all spheres of life, including the natural and the man-made, the tangible and the intangible. Ogunrinade (2015:83) says, "Sustainable development, is about developing an ecologically aware, socially just, and economically responsible society"

This chapter acknowledges the fluidity of sustainability as a relatively new concept that dates back to only as far as the work of Brown (1981) who first mentioned it explicitly. The Brundtlandt Commission six years later attempted to give it the shape that has given the concept its present day configuration. The Commission defined it as development that meets the needs of the present generation without compromising the ability of future generations to meet theirs (WCSD 1987). In essence, it is about a win-win compromise between the needs of the present generation and the projected needs of future generations. Much has been said about the failure of donor-driven development agendas and foreign-spurred development agendas to capture the needs and aspirations of local communities in Africa, Asia and Latin America. Ogunrinade (2015:83) laments the situation saying:

> The so-called 'experts' should try to understand that the culture of people they intend to help and should take the social and cultural perceptions…rather than denigrate and relegate them to the background in development interventions.

Sustainable development is, therefore, cognisant of cooperation, meaningful stakeholder participation, commitment and ownership, long, medium and short term effects of current actions, common concerns, inter and intra generational

equity, justice, and moderate production and consumption habits. This requires appropriate communication, tacit knowledge and its transfer between and within generations, capacity and willingness to act based on the knowledge available (Ogunrinade 2015). This chapter views music as a conduit that plays the role of transferring this delicate mix from one generation to the other, in a simple, diplomatic, yet palatable way.

Sarawoga's songs as educational vectors for sustainable development

Mtukudzi's 2012 music album, *Sarawoga*, is arguably a manual of social instructions. It depicts the norms, values, taboos, visions, hopes and aspirations of African community in a way that showcases the beauty of the cultural universe it mirrors. With the diglossic relationship of the languages and dialects in Zimbabwe, the notable fabrics of the songs are the values and sensibilities of the Shona-speaking community (Chivhanga, 2008). The latter is apparently portrayed as a microcosm of African society at large. Although the pronunciation, alliteration, tonality and flair of the songs specifically obtain from the Korekore dialect of the wider Shona speech community, the audiences of the songs are kept alive to the bigger picture – the commonality of Africa's shared socio-cultural ideals.

The album's first song, 'Sarawoga,' which also gives the album its title, is a haunting accappella track, which resonates with the pain of a father's mourning voice at the loss of a dearly beloved but sadly departed only son. Literally translated to mean 'Left alone,' the song is decidedly more sombre than most of the other songs Mtukudzi has ever composed. It is a wail of pain in vocals and percussion as the singer comes to grips with the loss of his son who died in a car crash in 2010. The song has very few words and it repetitively revolves around the idea that one has been left alone. It becomes the anthem of bereavement demonstrating Mtukudzi's escape into his art as the only resourceful mode of coping with the ill-timed tragedy. Its lyrics are sharp, candid and matter-of-factly garnished with the funereal tone of a wailing man in his old age, driving home the crescendo of undiluted pain. Albergato-Muterspaw (2009) perceptively explores music therapy in grief treatment, highlighting that music can be effectively used in treatment to elicit a sense of community, culture and spirituality. In this regard, music's profound potential for self-expression leverages its connection to human emotion. Elsewhere, with Africa struggling with tribal wars and genocides, music has been known in places like Rwanda as a way to foster sustainable peace and dialogue. Development agents have even designed curricula around theatrical music performance as a way of encapsulating

healing memories. Considering that the death of Sam Mtukudzi comes at a time when he was working with his father on a couple of nascent audio and visual projects awaiting fruition, the audience senses the therapeutic effect of tears, with Mtukudzi's few words in the song 'Sarawoga' acting cathartically to help the man, if not to attain healing, then to embrace his fate in moments where life is robbed of all meaning. Art is apparently the only recourse when man is wading through absurd moments of human existence.

The next track, '*Huroi*,' literally translated, means 'Witchcraft,' is Mtukudzi's way of proffering some advice on the secret behind smooth marriages. In Sesotho, it is translated 'moloi' meaning 'Artist of the darkness who wishes or acts in a manner to cause misfortune or kill (spiritually planned and linked). Witchcraft is used here as an overarching metaphor for a cantankerous, heartless, rowdy, ungrateful and sour-natured husband who lacks the magic quality, 'gratitude,' which ordinarily lubricates the marital bond. The song enumerates practical examples of circumstances that great wives put up with, all in the name of undying love for their husbands. Such wives are nurturers, providers, companions and thoughtful helpmates. Mtukudzi makes a strong case around the fact that the wife is someone's daughter who leaves her own people in the name of love, hence for putting up with odds in life's endless struggles, she deserves the honour, gratitude, praise and compliment of a grateful, sweet-natured and civil husband. Chavhunduka (1980:134) notes that the Shona and Ndebele communities in Zimbabwe use the 'witchcraft' tag both literally and figuratively, with the latter frequently-used to denote wayward, unbecoming and unethical conduct in a person needing correction, reproof, restoration and disciplinary counselling. In Zimbabwe, although the highly controversial subject of witchcraft triggered a simmering legal tussle between the traditional courts and the formal courts pursuant to the legislature's enactment of the Witchcraft Suppression Act in 1999, Mtukudzi's track, '*Huroi*,' is quite a contextually relevant figurative take on society's use of shared virtues to reverse repulsive vices. When especially considered against the patriarchal backdrop of African society, the song '*Huroi*' is such a masterpiece in maternal valorisation – celebrating the invaluable beauty of womanhood. Mtukudzi motivates for the philosophy of partnership between a husband and a wife as the key to mutual peace-building, reciprocity and harmony in the domestic space. In *Huroi*, Mtukudzi adopts a simple and palatable way of tackling the huge and timely issues of domestic violence, gender-based violence and male involvement in social intercourse. The message of the song should be read in the context of the national discourse around gender-based violence. About 42% of women in

Zimbabwe have experienced physical, emotional or sexual violence (or both) at some point in their lives (The Zimbabwe Demographic and Health Survey of 2010-11*)*. This was the year Mtukudzi released the album, Sarawoga. It is thus a clear articulation drawn from lived realities.

'*Haidyoreke*' the third track, is a wisdom-inspired lesson on the cost and primacy of time as a cardinal factor in human life. Building on the expediency of time-consciousness, the song resonates with the proverbial adage 'time and tide wait for no man.' Equally compelling is the stubborn fact that once lost, time can never be regained, hence the need to meet and address life's challenges, processes, responsibilities and opportunities with some urgency. Interestingly, this great lesson of life is drawn from systems of cognition that African people are cognisant of, with time configured as a much-sought-after precious liquid which, once spilled, can never be recovered. One cannot ignore the silent thoughts occasioned by the track *'Haidyoreke,'* especially considering the pejorative use of the term 'African time' in obvious reference to the perceived cultural tendency in most parts of Africa toward a more relaxed attitude to time. Solomon and Schell (2009:174) argue that the appearance of a simple lack of punctuality or a lax attitude about time in Africa may instead reflect a different approach and method in managing tasks, events and interactions, with African cultures being often described as polychronic – which means people tend to manage more than one thing at a time rather than in a strict sequence. Mtukudzi thus addresses time-consciousness as a factor that ropes in multiple interpretations, yet the merits of efficiency and progress reign supreme. Stretching this into a wider developmental discourse, this can be seen as a clarion call to Africa to realise the need to catch up with others in the development trends and not lag behind.

The fourth track, '*Uneyerera*,' uses some poignant figurative expressions drawn from African agrarian experience as well as the wisdom of risk-taking, which is symbolised by the central metaphor of 'testing the waters.' The repetitive routine of the song draws attention to the two main motifs that shape the song. The first one is that although the critical decision-making moments of life entail taking risks, one ought to be shrewd enough to take calculated risks. Human intellect is implicitly cultivated and sharpened through life's experiences, so that when summoned to preside over tough options that catch humanity off-guard, one is expected to resourcefully tap into the merits of sound discretion. The second nugget of thought is encapsulated in the expression, '*Kanda gejo wakomutsa. Usakande dzisati, unosiya hwangwadza*,' an expression drawn from the realm of agriculture whose denotative meaning is that in life one ought to use

sound and sober judgement to avoid taking suicidal short-cuts. It comes through as a moral indictment against thoughtless impatience, fickle love for cheap convenience and impetuous deviation from the virtue of following through life's imperative processes step by step. The song demonstrates that cheating always comes back to haunt the culprit, hence the clarion call to play life's game by the set rules. The proverbial wisdom escorting this track is a succinct testimony to Nussbaum's (2000:37) submission that in Africa, many proverbs act as catalysts of knowledge, wisdom, philosophy, ethics and morals; they provoke further reflection and call for deeper thinking.

The fifth track, '*Watitsvata,*' translated 'You have done us proud,' is a celebratory song where a family proudly witnesses the crowning moment where their well-brought-up daughter gets into marriage. This song is a popular anthem for the family dance at most Zimbabwean weddings; it is built around the typical traditional ethics of good morals, manners, character building, purposeful resolve, and a focused life as the building blocks for a successful youth-hood that graduates into a respectful adulthood via marriage, the grand rite of passage. The song essentially highlights that when a daughter does well in life, she does so on behalf of her whole extended family, espousing her ambassadorial role as the carrier of her family's good name and reputation. It is interesting that Mutukudzi and Sam, his son, secretly composed this song as a surprise gift to Mutukudzi's daughter, Shamiso, on the occasion of her wedding day. Quite remarkably, in an illustration of the concept of Ubuntu, Mutukudzi's family life features in his music as a microcosm of Africa's shared values in matters of family life. 'Watitsvata' is a song of elation, jubilation and satisfaction where parents are literally disarmed by their child's star-studded greatness and success. In the wake of juvenile delinquency and immorality in a fast-paced amoral postmodern society, a well-behaved daughter who gets into marriage with her full decorum and manners is a rare find and a real cause for her parents' limitless pride.

'*Matitsika,*' the seven-minute long sixth track, is a pleasant easygoing Zimbabwean song about welcoming visitors, even unannounced ones, into one's home. It demonstrates the hospitality and warmth of African people and their environment, pretty much showcasing the pride of a well-travelled African son, Oliver Mtukudzi, cognisant of his continent's exceptionality. The song resonates with Leopold Sedar Senghor's black theology in his poem 'New York,' where he contrasts the cold individualism of Western societies versus the warm bond of brotherly group care characteristic of African cultural aesthetics conceptualised as natural African essence (Senghor 1993:27). Obtaining from the song is an obvious call to introspection for any African whose temperament may be at

variance with the continent's defining qualities of tolerance, accommodation and positive reception.

The seventh track, '*Muteuro*,' translated 'Prayer,' is Mtukudzi's Shona rendition of 'The Lord's Prayer.' It is a translation of the prayer of Jesus as recorded in the New Testament of the Christian bible. Interestingly, Mtukudzi gives the words the inflections necessary to demonstrate how the Shona community espouses the ethics of social control as enshrined in the prayer. Whilst African society has its own traditional religious values, Mtukudzi demonstrates that the continent welcomes values from other cultures in so far as they compliment Africa's norms and cherished ideals. The cool, soft and slow tempo of the song mirrors the seriousness with which Africans approach spiritual matters as they define the people's shared essence. Mbiti (1992), who posits that Africans are notoriously religious, submits that African Religion was very receptive to Christianity, which was consistent with African religious values; Jesus Christ was the new element. Mtukudzi showcases a fruitful fusion of two religious traditions, showing how values shared across cultures are the pillars of world morality.

'*Chiringa*,' the title of the eighth track, has no direct equivalent semantically in the English language, but basically it is a Shona word used to describe someone who is so directionless that they get easily swayed by momentary fascinations. The song is a scathing indictment against gullibility and the regrettable human tendency to lose focus in life due to distractions that 'pop up' along life's journey, thereby clouding one's bigger picture of life and their supreme purpose of existence. One who yields to the enticing detours on the path of life invariably stumbles and licks their wounds with great remorse.

The ninth track, 'Deaf Ear,' is a song that rallies humanity to the common cause of paying attention to the sensibilities of children in society. It is a song that touches the topical subject of children and minors as a key equality group in society. The song resonates with the children's rights principles as enunciated by Bandman (1999:67) who explains that interpretations of children's rights range from allowing children the capacity for autonomous action to the enforcement of children being physically, mentally and emotionally free from abuse. Mtukudzi enunciates the African ethic of collective identity when he highlights that one's child is not theirs alone as that child belongs to the entire community, demonstrating the essence of subsuming individuality under society's collectively shared ideals. Interestingly, Mtukudzi also mentions that children have a lot to teach the adults also, hence adults can only ignore children to their own detriment. Thus, the song debunks the myth of adulthood as the all-

knowing stage of life. It enlists the support of adults to the cause of minors and foregrounds the shared efforts between children and adults as the gateway to new frontiers of life's wisdom.

'*Mutemo Weko*,' the tenth track, is Mtukudzi's Shona rendition of the proverbial dictum, 'When in Rome, do as the Romans do.' The song is a great lesson of life, advising humanity on the need to learn new ideas from other people's cultures and to broaden one's knowledge base by integrating positive elements judiciously borrowed from other worldviews. The song emphasises the importance of alertness, astuteness and sensitivity as key assets in life, and advises that when one travels across the world, they need to respectfully observe other people's ways of life in order both to fit in pleasantly and to salvage an idea or two to strengthen what they already know. The song demonstrates the resourcefulness of cultural diversity in the context of Africa's cultural worth and the great latitude Africans have to sharpen their cultural resources through fruitful exposure to a variety of other rich cultures.

'*Mbodza*,' translated 'undercooked or badly cooked food/*sadza*,' is the album's eleventh track. The song is a metaphor of bad practices and habits that are presented metonymically as ill-cooked or half-baked human characters. One key example given is when adults engage in gossip and slander other people behind their backs, all in full view of and witnessed by innocent children who are inadvertently corrupted in the process. The song's message is that children are growing into ill-prepared personalities due to the lack of worthy role models in society. The vices and character defects in adults are sadly replicated in the impressionable characters of the young children. The song's key message is that people are accountable for their deeds and that what they do has a way of bouncing back to them at some point.

In the twelfth and final track, '*Rongadondo,*' literally translated, 'I made false plans,' Mtukudzi sings a sorrowful waltz for his late son, Sam, bemoaning the helplessness of humanity in making plans for a good life, oblivious of God's counter plans, and hence demonstrating that humanity is at the mercy of superhuman powers. In this song, Mtukudzi literally mentions how he thought he had reached a stage where life would be smooth, only to sustain an ill-timed blow as God's plans supersede his own, bringing him alive to the reality of human vulnerability.

Sarawoga is a packed volume that catalogues life's great lessons distilled from practical human experiences. In this album, Mtukudzi quite tellingly embraces his ambassadorial role as he navigates across experiences defining human life: childhood and aging, respect and hope, women's rights, community

and connection, morality, domestic violence, children's rights, multiculturalism, manners, decorum, etiquette and experientially acquired wisdom. The collection of songs has the authentic signature of Mtukudzi's unique guitar tune, and valorises the merits of Shona culture whilst also locating the place of that culture in the wider scheme of globally shared socio-moral ideals. Mtukudzi's collection of songs is distinct for its didactic strength and aesthetic appeal.

Hybrid forms and the configuration of culture

A fascinating mark of Mtukudzi's artistic prowess is his adventurous fusion of musical genres which he infuses into his signature Afropop style. Despite revealing a decidedly Zimbabwean character and flair in his music, he has extended the parameters of his artistic engagements to infuse borrowed forms into his music, giving his art a quasi-universal appeal. There is a sense in which his music places Zimbabwe on both the global and international cultural radar, without necessarily neglecting the immediate Zimbabwean consumers of his art. Mtukudzi uses music to demonstrate the fluidity of life in the wake of global currents roping various cultures into a multicultural vortex. Mtukudzi is known to have his own specific musical style, called after his nickname, 'Tuku.' Michael (2003) explains this as a mixture of the fast-beating *mbaqanga* rhythm and fast percussive dance rhythm *jiti*, blended with gentler *mbira* rhythms. Arguably, Mtukudzi's unique Tuku music becomes a statement of an inclusive nationalism in that it includes the *mbaqanga* style of Bulawayo, a predominantly Ndebele-speaking region of the Zimbabwean community. More interestingly, *mbaqanga* cannot be limited to the Ndebele community of Zimbabwe only, since it is also a popular musical style in the South African city of Johannesburg. Whilst carrying invaluable lessons to society, Mutukudzi's music demonstrates the fusion of shared cultures locally, regionally and internationally.

Mtukudzi's career spans the birth of his native Zimbabwe as well as the advent of both Afropop and the global craze with African roots music. His quicksilver guitar works, keen ear for melody, coupled with an evocative voice, have earned him intense adulation at home. His organic, savvy mix of traditional ways, pan-African influences, and cosmopolitan pop forms has widely come to be known as 'Tuku' Music. It has developed and patterned the brand 'Tuku' into a household name across Southern Africa, as well as across Europe and North America, thanks in part to major releases of his work in the 1990s and 2000s. In distilling various cultural influences, Mtukudzi's music demonstrates the immense value of life's experiences as they are shaped by continuous exchanges across spheres of class, gender, race, nation, generation and location. In his

epoch-making classic, *The Location of Culture*, Bhabha (1994:3) executes a rethinking of questions on identity, social agency and national affiliation, thereby providing a working (and adventurous) theory of cultural hybridity where he uses concepts such as mimicry, interstice and liminality to argue that cultural production is always more telling where it is most ambivalent. Mtukudzi's fusion of cultural experiences in his music resonates with this postmodern construct of hybridity and fusion as products of engaging cultural dialectics that yield intersections and overlaps across a variety of spheres, resulting in a paradigm where cultures, races and ethnic backgrounds have blended into a rich and colourful celebration of life.

Although Mtukudzi's early work falls squarely into the burgeoning rock- and funk-inspired Afropop of the era, Mtukudzi always felt it as a continuation of older, deeper roots. "Even when I played with electric equipment, I always adapted older tunes. I played guitar like I was playing a traditional instrument," explains Mtukudzi in a 2013 press release. Mtukudzi's music thus demonstrates the culturally rich art forms obtaining in Zimbabwe, especially in light of how they have assumed an adaptational mode by way of infusing borrowed traits from other cultural spheres. This explains why every year people from all over the world attend an Annual Zimbabwe Music Festival held in the Pacific Northwest of the United States. It is a platform for various peoples to share the experience of Zimbabwean music and culture. Traditionally, Zimbabwean music includes folk and pop styles. Much of the folk music is based around the well-known traditional instruments which are also popular in many other African countries: *mbira* (thumb piano), *ngoma* (drums) and *hosho* (rattles). Popular genres in Zimbabwe include indigenous Mbira music, Chimurenga music, Sungura music, Sungumba music, Zimbabwean hip-Hop, Zimbabwean Reggae (Dancehall music), Shangara, Jerusarema, Gospel Music, Mhande, Mbaqanga, Afro-Jazz and Rhumba. The ethnomusicologist, Berliner (1978) writes in detail on the rich culture of the Shona people as projected by their musical arts and other related presentational art forms in Zimbabwe and Africa as a whole.

It is also rewarding to read the conceptual base of Oliver Mtukudzi's music in the context of identity creation. In this regard, much perceptive overlaps are observable between the lyrics of the singer's music and the postmodern conceptualisations of the 'self,' the 'other,' and 'identitarian categories.' Documenting the diasporic audience reception of Mtukudzi's music, Kyker (2013:261) argues that transnational identities and subjectivities are not only shaped through live performance, but are also negotiated, articulated and produced through musical listening. Such a rich musical tradition breaks the

superficial cultural gaps occasioned by geographical boundaries. Notably, Mtukudzi's music does not only serve as a manifesto of socially-constructed ideas and lessons, but also proffers value-judgements, moral rectitude, advice and strategies in a manner that leaves ample scope for the interaction of cultures and traditions from various corners of the global village. By availing value-driven intersections between kinship, region, ethnicity, nation and culture, Mtukudzi's songs foreground the hybridity, fusion and coexistence which enable audiences to symbolically reposition themselves in light of shared cultural imperatives.

Conclusion

The UNICEF Goodwill Ambassador for the Southern Africa region, Oliver Mtukudzi is an artist whose music is part of Africa's mix of cultural resources for fostering the pertinent agenda of sustainable development. Fully cognisant of the social ills that stand in the developmental pathway, the music proffers subtle but perceptive recommendations in the direction of upward social mobility. Mtukudzi's *Sarawoga* is an album that displays the cutting-edge prowess of a highly-seasoned musician who has fully embraced his role as a contributor to society's developmental discourse. The lessons that *Sarawoga* carries are born out of life's tried and tested experiences, exposure to other worlds as well as the imperative dictates of common sense. The strength of the album is that whilst it showcases a typical Zimbabwean community and the aggregate of its cultural worth, it does not neglect to engage ideas legitimately borrowed from other cultural set-ups, thereby creating knowledge and wisdom models through skilful cultural synthesis. The net effect of such a cultural practice is to strategically position a self-contained community in such a way that it feeds into the larger confluence of global multicultural engagements. In devising value-churning models of instruction, society cannot turn a blind eye to the potency of culture as the sustainable matrix for emergent knowledge systems.

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CHAPTER 8: SUSTAINABILITY IN AFRICA: VIEWS FROM AFRICAN PHILOSOPHY AND WORLDVIEW

Sailos Taurayi Bvekerwa, Soul Shava and Nomalanga Mpofu-Hamadziripi

Abstract

This chapter asserts that Africa has the capacity to exploit her capabilities by drawing from her own knowledge resources, innovation and practices, to achieve sustainability. The sustainability discourse emerges from a growing concern that economic growth and development are outstripping the natural resources and damaging the natural environment on which it was dependent. This chapter discusses sustainability in relation to the African worldview, providing a historical reflection of sustainability in pre-colonial states in Africa and its possible applications in the present and in future. It is argued here that the sustainability practices of indigenous peoples are embedded in their culture and embodied in their livelihoods. Some of these practices are conveyed intergenerationally through proverbs in their languages, which serve as the medium of communication and transmission of some knowledge forms. This chapter is focused on specific Shona proverbs elaborated on their embedded sustainability meanings. The meanings relate to the aspects of teamwork and collaboration, perseverance/commitment, innovativeness, honour/uprightness, hard work, sharing/selflessness, caution and biodiversity conservation. These proverbs are buttressed by examples from elsewhere in sub-Saharan Africa. They reveal that sustainability is an integral aspect of the traditional livelihoods of the Shona people of Zimbabwe.

Introduction

This chapter argues that Africa had her own ways of managing and achieving sustainability prior to colonisation. The authors believe that if Africa were to claim a platform to manifest her capabilities, drawing from her own knowledge resources, innovation and practices, she could achieve sustainability. The argument in this discourse, tapping into the African worldview, is concretised using proverbs as a central feature within the African philosophy of life. The discourse also narrows towards a specifically Zimbabwean context. The sustainability discourse is emergent from a growing concern that economic growth and development are outstripping the natural resources and damaging the natural environment on which it is dependent. The concept of sustainable

development derives from the realisation of the need to balance economic development with environmental sustainability. Sustainability is, therefore, a critical issue in development. Sustainability, as a concept and in practice, is debated globally against North and South perspectives, with the North seemingly dominating (Mimiko 2012; Preece 2009).

The definition of sustainability, like many definitions, depends upon one's viewpoint. It is deliberated in more detail from an African perspective in the discussions contained in this chapter. Our contention suggests that sustainability is a highly fluid concept greatly dependent upon the cultural geography of a region in which the term is applied (Vercoe and Brinkmann, 2012). According to Kameri-Mbote (2011:243):

> The challenges to sustainability in African states are multi-faceted, cross-sectoral and multidisciplinary in nature. These challenges range from social, economic, political and environmental challenges. They cut across the different sectors in the countries with a few of them being unique to a specific sector.

One of the contributing factors of the challenges raised by Kameri-Mbote (2011) seem to point to the fact that mainly most of the 'development' initiatives are externally derived and planned and usually fail to take due cognisance of the local context of the development recipients on whom they are imposed.

This chapter gives an overview of Zimbabwe, and discusses what sustainability is, from an African worldview. It provides a historical reflection of sustainability in pre-colonial states in Africa and its possible applications in the present and in future. The discourse closes with the chapter raising present and future sustainability issues in Africa. While the authors acknowledge that significant work has been done by others in other contexts, for example, protection of the environment with regards to flora and/or fauna (Chivaura 2007; Ndlovu and Ncube, 2014), this work focuses on sustainability in general. In this discussion, sustainability is deliberated from an African worldview where proverbs are a cumulative granary of tried and tested sustainable practices from which we tap in our endeavour to foster sustainable development in present day Africa. This work further contributes the continued search for solutions to the challenges of unsustainability which beset Africa and the rest of the world. It is also a response to a call by many scholars, among them Eyong and Foy (2006:133) who state that:

> The problems that plague Africa are an ongoing process, a social history of which each and every African is a part and parcel. By implication, African scholars need to focus their attention on strategies to 'study up' their societies and find sustainable solutions to contemporary problems of this continent. Lack of data or a distorted presentation of data on the sub region (SSA) is a serious impediment, but not a reason for inaction. As academics from the sub region, we feel an urgent duty and call to incorporate all the ecological, socio-economic and political problems into an academic mainstream with a view to look for workable sustainable development strategies.

Overview of the Zimbabwean linguistic and cultural context

Zimbabwe is an ethnically diverse country of approximately 13 million people (Zimbabwe National Statistical Agency, 2012). The demography is such that the largest ethnic group is collectively known as the Shona. This ethnic group consists of the Manyika, Zezuru, Karanga, Korekore, and Ndau dialect groups, which together comprise seventy five percent of the population (Gwaravanda & Masaka, 2008). The second largest ethnic group is the Ndebele, which makes up about 18 percent of the total population (Albala, 2011). Mashonaland, where most of the Shona live, is a collective term for the eastern two-thirds of the country, and most Ndebele live in the western third of Matabeleland. Other ethnic groups, each constituting about 1 percent of the population include the Tonga or Nambya in the Zambezi Valley, the Kalanga in the Plumtree area bordering Botswana, the Xhosa or Fengu in the Lower Gweru/Mbembezi area, the Shangani/Tsonga in the Save-Limpopo-Lowveld region. Tthe Sotho are in the Thuli Valley area around Gwanda and the Venda are in the Limpopo Valley bordering South Africa (http://www.everyculture.com). In total, Zimbabwe has sixteen minority language groups dotted throughout the country (Hachipola, 1998). About 2 percent of the population is of non-African ethnic origin, mainly European and Asian (Countries and their cultures, n.d.). About 67 percent of the population lives in the rural areas and has retained much of its indigenous languages as well as cultural and livelihood sustenance practices (Zimbabwe National Statistical Agency, 2012). With such a population distribution, two questions are posed: (i) What are the implications on the sustainability of tradition and culture, and (ii) with such a multiplicity of ethnic groups does the Zimbabwean populace share the same values? Zimbabweans, with their diverse

ethnic groups and languages, seem to share a significant set of beliefs and cultural practices similar to those of people in the countries around and beyond its borders. These similar beliefs and cultures project a shared philosophy called *Hunhuism/Ubuntuism,* from *Hunhu/Ubuntu* (an African view of humanity or being human). Ramose (1999) asserts that:

> *Ubuntu* is the root of African philosophy. The being of an African in the universe is inseparably anchored upon *ubuntu*. Similarly, the African tree of knowledge stems from *ubuntu* with which it is connected indivisibly. *Ubuntu* then is the wellspring flowing with African ontology and epistemology. (p.49)

The reciprocal relationship of the African people to the lived environment is elaborated in the proverbs that are related to sustainability in the succeeding discussion. The argument in this treatise takes an African decolonial perspective.

Zimbabwe's culture is founded on a number of values which are enshrined in the folklore (folktales, songs, dance, myths, proverbs, poetry, idioms, taboos, and totems) of the various ethnic groups: respect for the inherent dignity and worth of each human being, the fostering of national unity, peace and stability, customary practices and traditions, and recognition of the rights of racial, ethnic, cultural, linguistic, religious groups (Chigidi 2009; Ncube 2014). In addition to the latter values, Zimbabweans share many other values and cultures, which include religious beliefs and ceremonies. Hospitality and etiquette are the hallmark of Zimbabwe's traditional culture. It is the norm to welcome strangers, make them feel comfortable, and give them food, as well as assist them (Gelfand 1970). As the Shona people say -"*muenzi haapedze dura*" (The visitor does not empty the granary), or the Ndebele people's equivalent -"*isisu somhambi asinganani, singangopondo lwembuzi*" (The stomach of the visitor is not much, it is the size of goat's horn).

In the ensuing discussion are some examples of traditional cultural beliefs commonly shared among the indigenous peoples of Zimbabwe that reveal the aspects of sustainability. In terms of traditional African religion, there is a belief that the spirit of a deceased person returns to his/her family and that the ancestors guide and guard the extended families (the ancestors, spirits), and therefore have a powerful influence on family life. They are honoured in ceremonies to celebrate a good harvest and in appeals to deal with misfortunes. It is believed that when an ancestral spirit becomes angry, it communicates through a medium or a diviner, who diagnoses the anger and its cause.

Thereafter, the required appeasement has to be rendered by the living members of the family (Bourdillon 1987; p'Bitek 1986). Customarily, the dead are buried close to the home, and people dwelling in urban areas usually bring the deceased back to their ancestral land in the rural homes for burial among their people. Graves are prepared close to the family homestead and are both sacred and revered for their association with death and the spirits. A diviner may be consulted to determine the cause of death and s/he prescribes a ritual action. This is followed by ceremonies to settle the spirit and mark the end of mourning. After one year, if the deceased was married, a final ceremony is held at which the spirit of the deceased is brought back home and becomes a guardian spirit of the family (Makaudze and Gudhlanga 2014).This practice reveals continuity of culture and the continuous relationship between indigenous people, their ancestors and the land.This relational foundation permeates all aspects of indigenous culture and is an important element of sustainability.

Sustainability Explained

Sustainability is viewed and defined in a number of ways similar to sustainable development. Mebratu (1998) observes that this has resulted in a wide variety of definitions and interpretations that are skewed towards institutional and group prerogatives rather than the essence of the concept, inherent in traditional beliefs and practices. A key question is: Are people in rural communities (as the key custodians of the beliefs and practices) able to articulate these inherent sustainable traditional beliefs and practices? Mebratu contends that a historical and conceptual perspective focusing on the analysis of the metaphorical and epistemological basis of the different definitions is believed to be the first step towards developing a concrete body of theory on sustainability and sustainable development (Mebratu, 1998). Therefore, based on the latter argument, one may argue that the body of knowledge should come from the people. That argument is the basis of this chapter.

"Sustainability" is traditionally synonymous with such words as "long-term", "life-long" "continuous" "durable", "sound" or "systematic", among others. Hueting and Reijnders (1998:139) define sustainability "as the use of the vital functions (possible uses) of our biophysical surroundings in such a way that they remain indefinitely available." The Brundtland Report, *Our Common Future*, defines sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:43). According to UNEP (2012), the dimensions of sustainable development are environmental, social, and economic. These

dimensions are incorporated in a holistic view of the environment that involves the interrelationship between the human (social, economic, political) and biophysical dimensions. It is argued in this chapter that from an African perspective, sustainability encompasses both continuity and environmental sustainability. The African perspective views issues in a holistic and relational nature and not in compartments. According to Mebratu (1998), sustainability is viewed as a *systematic* analysis of representative definitions and interpretations in most contemporary definitions focusing on specific elements while failing to capture the whole spectrum. Therefore, in this chapter sustainability is perceived from an African worldview as the continuation of a practice to provide the means and products (benefits) for livelihood sustenance while simultaneously sustaining the lived (natural) environment from which livelihoods are derived.

Conceptualising a worldview

A 'worldview' is defined in several ways by numerous authors. According to Sire (1988:7), "A worldview is a set of presuppositions (or assumptions) which we hold (consciously or subconsciously) about the basic makeup of our world". A worldview could be what we expect about the world, what we see the world as being from knowing by our effort or unknowingly. Phillips and Brown (1991:29) state, 'A worldview is, first of all, *an explanation and interpretation of the world* and second, *an application of this view to life*. In simpler terms, our worldview is a view *of the world* and a view *for the world'*. In Phillips and Brown's view, therefore, a worldview is our understanding of the world as we live it and our imagination of it. It is also how we put into action our understanding of the world. Walsh and Middleton (1984:32) explain, 'A worldview provides a model *of the world* which guides its adherents *in the world.'* In the latter definition, a worldview is what people envisage as a true representation of the world. In all the three preceding definitions, the activity is the search for what the world is, which is reality. This is reality as perceived by the people who share that worldview. Accordingly, Naugle (2002:345) says, "After all, what could be more important or influential than the way an individual, a family, a community, a nation, or an entire culture conceptualises reality? Is there anything more profound or powerful than the shape and content of human consciousness and its primary interpretation of the nature of things?"

The search for reality is philosophy, hence to Vidal (2008), the two concepts "philosophy" and "worldview" are closely related. Talking about "a philosophy" in its broadest sense refers in fact to a worldview. The latter authors go further to say that the term "worldview" is often used to emphasise a personal

and historical point of view. It is, however, possible to define the class of philosophical worldviews, as being rooted in rationality and a claim for universal validity. The challenge is on who in/validates the worldviews. The argument in this chapter is, therefore, against the general practice in which certain worldviews are taken as being hegemonic. It further argues against the 'imposition' of worldviews from the west as universal worldviews.

In this discussion, the authors agree with the following explanation of a worldview as given by Fowler (1990) who asserts that a worldview is a construct – a perspectival construct about the make-up of life as it struggles with the questions of reality, truth, ethics, and history; a confessional construct that provides a point of departure, a sense of direction, a locus of destination, and a strategy of unity; as well as purposive construct that meets the basic needs of human life and action. In relation to sustainability, one may argue that sustainability requires the aforesaid characteristics with mainly a sense of direction, locus of destination, strategy of unity of life and action. Action is also emphasised in Phillips and Brown (1991) as a component of a world view. It may follow that a worldview guides action in the sustainability of initiatives. At the core of every person's being lies the worldview that constitutes what Kraft (2005:44) refers to as the "control box" of culture that determines thinking, acting or doing, and determines values. It is important therefore to find out the impact of culture in sustainability.

As alluded to earlier on, the fundamental question in philosophy is "what is the ultimate reality?" It now seems scholars are recognising the importance of inter-disciplinary and inter-cultural approaches to answering the question of the ultimate reality (Selvam 2011:1). Culture is the totality of the answers which human beings give to the questions of life. Culture is the creation or recreation of ideologies, rules and practices that allow people to make sense of the world in both different and shared ways (Udeani, 2002). Africa as a continent, having become conscious of itself, its common history, and its shared world view, has begun to offer to the rest of the world its own contribution to the understanding of the ultimate reality (Selvam, 2011).

The concept of an African Indigenous Worldview is a sort of umbrella-concept for all forms of worldviews that originate from Africa. The word 'indigenous' demarcates these worldviews from other non-African worldviews found in Africa, which are today sometimes referred to as African worldviews because of some elements of the indigenous African worldviews which they have imbibed (Udeani 2002). One of the other forms of African Indigenous Worldviews is *Hunhuism/Ubuntuism*, which Zimbabwe (Hapanyengwi-Chemhuru

& Makuvaza 2014) and mainly other southern African nations tend to operate within. African Indigenous Worldview is distinguished from the worldviews of other peoples in so far as it originates from, is grounded in and grows out of African history and culture. African peoples' beliefs about God, nature, and major life rituals such as birth, puberty, adulthood, marriage, elderhood and death, exhibit enough commonalities to warrant being called an African worldview (Rabaka, 2005).

Generally, African indigenous worldviews are characterised by their pragmatic orientation. This has led many non-members of these African cultures to deny Africa such attributes as philosophical reflection and mystical contemplation. African scholars immersed in the study of various aspects of their continent centre on the Africanization of the curriculum and the re-orientation of the dominant interpretative narratives on the history and prospects of African countries from their imperial tone and tenor (Adebayo, 2005). The depth and wealth of the African indigenous worldview is based on the complex and subtle symbolic structures which give human life practical meaning and relevance (Udeani 2002). The African indigenous worldview provides for African people their locus of enunciation (where they are speaking from). It is argued in this chapter that such strength in the African worldview could be capitalised on for sustainable development in Africa. The desire and determination of African nationals to chart their own history and determine their destiny by giving correct information has not been easy. In this regard, Udeani (2002) says, nowhere was the effort to stamp an African imprint on African Studies more in evidence than in efforts made to produce alternative, sometimes radical narratives of African history and development associated with the various schools that emerged across the continent to challenge received wisdom about the continent's past.

To understand the search for meaning within the African indigenous worldview, one has to bear in mind that this is more a way of life and interpretation of the universe and the totality of reality. The African indigenous worldview expresses itself in every aspect of the life of the African and can in no way be separated from his/her daily life. The way the African eats, grows crops in the field, celebrates feasts and festivals, manages social contacts, etc., is all influenced by the African traditional religion. Principally, every action of the African is executed from this background (Udeani, 2002). We therefore, argue that sustainability in African communities may be embedded in the African indigenous worldview, that is, their daily way of doing things.

The indigenous worldview and culture of Africa is very different from that of the west: most African religions place God at the centre of faith; the

conviction that the dead are able to influence the living enhances reverence for the elderly; the belief in collectivism is far stronger than the belief in individualism. Colonialism upset the indigenous African worldview and created bewildering frictions within the political, economic, and social well-being of the continent (Smith, 2003). By a kind of perverted logic, colonialism "turns to the past of the oppressed people and distorts, disfigures and destroys it" (Fanon 1986:170; Fokwang 1999:48). Essentially, it was a big scheme to deny Africa its rich history, culture and wealth (Boon and Eyong 2002). Similarly, Shava (2008) argues that most early southern African literature is dominated by colonial narratives. These generally provide a superficial understanding of African practices and are often, in fact, mistaken in the perspective applied. African heritage was most often reflected as crude and primitive within a western ascendency that drove the imperial project in Africa (O'Donoghue, Shava and Zazu 2014). The introduction of western style education, religious practices, mass media and governance structures was a colonially derived system that viewed all that was African as inferior, backward and primitive and needed to be rooted out (Boon and Eyong 2002:10). All the same, there seems to be some key characteristics of the African indigenous worldview that have survived through times. These are the attributes that make the African worldview alive today. It is argued here that the surviving characteristic sought to be deeply researched on and strengthened for it may be that in them lie some of the answers to challenges of sustainability in Africa.

Atrributes of African Indigenous Worldview

The African indigenous worldview characterises itself, among others (in all its variations in the different parts of the continent), through the emphasis on the optimum success of the relationships to the land (lived environment) and within the community. It stresses the importance of the community more than the individual. It places emphasis on the constitutive factors of the community and especially those which bind the individuals together in the unity of the community. The individual in the community is an essential constituent and he/she is recognised as such; his/her unique powers and initiatives serve as a basis for efforts towards the good of the community. Although he/she is essentially and existentially linked with the community, he/she is not melted down in the collectivism of conformity (Udeani 2002). It could be argued that in the act of constitutiveness, the individual contributes, in a small way, skills that enable the sustainability of shared initiatives.

An immoral act is understood only in relation to one's contributing or not to the wellbeing of the society. In accordance with communal expectations and obligations immoral acts incur immediate punishment from the elders, or punishment from God himself, the sustainer of the universe and its inhabitants who expects his creatures to maintain good relationships with one another (Selvam 2011). The punishment may not be immediate since the Shona proverb says *'Chisi hachieri musi wacharimwa*'. This is a rich proverbial nugget which could contextually translate into 'Punishment for breaking taboos does not necessarily come instantly.' One of the greatest gifts of Africans to the world is their strong sense of community. Magesa (1997:64) stresses that 'We cannot understand persons; indeed, we cannot have personal identity without reference to other persons (bondedness).' Bondedness, according to Mathema (2007:6) 'is the key to the understanding that 'what falls on one, falls on all'. The idea of bondedness suggests that initiatives in which there is community belonging are likely to be sustainable given that they tap from this gift of a strong sense of community.

The practicality of the indigenous African worldview carries a system of encouragement or stimuli to continue with life at points of anxiety, stress, and crisis. Crisis times, such as death, birth, and illness, and transition times, such as puberty, marriage, planting, and harvest, are all moments of practical application of the provisions of this kind of worldview. It is also true that human communities get stressed and those that have an in-built mechanism to overcome stress remain sustainable. Similarly, an impact on the land (the natural lived environment) is perceived to have direct or indirect implications on community livelihood. It is, therefore, important to sustain the lived environment in order to sustain human livelihoods. Africans believe in a spiritual force that controls them. Selvam (2011:9) refers to this force as the 'vital force.' Very simply stated, in African wisdom, the ultimate reality is the vital force. The whole African worldview can be interpreted and understood in terms of this vital force (Selvan 2011). Bucher (1980:15) asserts that the main ancestor cult of Zimbabwe 'is a religion that revolves around the quest for power - how to acquire and retain power for protection and prevention against forces of evil.' In one-way or another, this power must be acquired and retained. Many traditional Africans believe that some persons and other invisible entities wield this power. These are spirits of the world that come in pairs, the good spirits from the dead and the bad spirits that wander in the wilderness of the universe. There are two main concerns in indigenous African belief systems: The first one is to make life possible and to sustain it, which explains the concern about fertility and food (Gehman, 1989). The second has to do with finding solutions for that which

disturbs life; setbacks, illness, death, and all forms of suffering must be dealt with, and power to counteract these is necessary to ensure continuity (Gehman, 1989).

Evidence of Sustainability in Pre-colonial States in Africa

We argue that sustainability is not a phenomenon that was introduced by the West through colonisation and development aid, but that it has always been embedded within the African indigenous worldview. Therefore, in order for the western concept of sustainable development to be meaningful to Africans and the African context, it must incorporate the African concept of sustainability. This form of sustainability is embedded and expressed in African philosophy with proverbs playing an indispensable role. The mistake of the colonial anthropologists and the missionaries in labelling Africans as being 'primitive', 'savage', 'barbaric', 'tradition-bound', 'lacking in self-governance' and so on, marked the beginning of unsustainability in Africa, as Africans were denied the right to pursue a development path, informed by an indigenous African worldview. The African development path by far preceded the arrival of the Europeans (Eyong and Foy, 2006). A historical review of some great empires such as that of Mali, Mwenemutapa, and Songhai reveal that pre-colonial Africa had a rich history, culture, economy, polity and governance structures which indicated that they had systems that could be sustained (Eyong, 2002). Historical evidence points to the fact that former African kingdoms were great centres of trade, culture, tradition and politics, but most African countries are largely failed states today. Prior to European contact and conquest, Africa experienced a level of development that was at par with the West, if not more advanced in some aspects (Eyong and Foy 2006). The sustainability characteristics of African people need enhancement for sustainability to be achieved in today's development activities. Enhancement could come through Africans writing about the issues and continuing to educate the young generations through practice.

Africa is the origin of human civilisation. Archaeological evidence points to the fact that present day Egypt was the origin of ancient civilisation (Spring et al 2010). Some of the technologies developed which show innovation and sustainability include the lens technology which was in use in Africa many years before colonial rule and the light technology that dates back as far as at least 2600 BC (Temple, 2001). In concurrence with this, Green, (1998:64) states that:

> The Soninke people of the empire of Ghana, from about 750 until 1076AD, are said to have enjoyed a world rich in culture and famous as a centre of learning and trade during the Middle Ages, while most of the people of Europe suffered disease, fear, ignorance, and oppression.

Learning, which is basically the acquisition of knowledge, is the strong base for sustainability (Hamminga, 2005). The application of principles of sustainability is based on one's knowledge of them. The Soninke Empire represented a long-distance trade based on gold and salt. This 'Land of Gold', possessed sophisticated methods of administration and taxation, large armies and a monopoly of well-concealed gold mines (Eyong and Foy, 2006:135). Strong economies normally contribute to sustainability through their general ability of resilience and continuity as opposed to the threats of environmental sustainability due to large numbers. Such was Africa's position prior to colonisation.

Another example of a state that has evidence of sustainability was pre-colonial Zimbabwe. Zimbabwe derives its name from historical stone structures called "*Dzimbahwe*", a concatenated form for "*dzimba dzemabwe"* (houses of stone), the largest pre-colonial establishment structure in Africa after the pyramids of Egypt. The Zimbabwe stone construction structures were built in stages between 800 and 1500 A.D. Colonialists could not believe that the great architecture was the work of Africans (Ndoro, 2001). The imposing architecture of the city was constructed from hand-cut granite, using highly developed indigenous stone-cutting technology and construction techniques. The granite was fitted together without mortar or cement (Chirikure and Pikirayi, 2008). The Shona kingdom of Mwenemutapa was one of Southern Africa's wealthiest and most powerful kingdoms (Beach 1980). Despite the lack of advanced equipment of communication those days, African people developed powerful state formations, extensive administrations and sophisticated socio-economic networks. Historical evidence shows that the people had skills in agriculture, animal husbandry and metal smelting using iron, copper and gold (Beach, 1980). According to Shona religion, the ancestors who built Great Zimbabwe still reside there, and it, therefore, is a sacred shrine (Lan, 1985).

Sustainability aspects embodied in African Proverbs

African proverbs are a rich oral art form; rich in the sense that their metaphorical message contains teachings that are aimed at unifying African societies. Bodomo (1996:34) aptly states: '... language is a granary, a repository of the worldview of its speakers; it is this particular language that best contains and expresses the indigenous belief systems – socio-cultural, political, economic and technological – of any society.' What made earlier African societies successful were strong relational foundations embodied within families, communities and ultimately societies, and with the lived environment. This was achieved through a worldview hinged on, first and foremost, sustaining the individual, the society and the lived environment. It encouraged harmonious living, coexistence and cooperation and abhorred individualism. Hence proverbs such as "*Zanondoga akasiya jira mumasese*" ('Mr-I-know-it-all' left his blanket at the drinking place: An exhortation always to seek advice from others where necessary) underline that abhorrence. The elders knew that happy, successful and sustainable societies were made of happy and successful related individuals. Success and wealth were not in the narrow material sense, but also in the physical, social and spiritual wellbeing of a person. Sustainability meant looking after one's kith and kin. There were no orphans or street kids then because people looked after their own. Further, no one went hungry or homeless; hence the theme in Ngugi wa Thiong'o's novel *A Grain of Wheat* which is that society shared even a single grain of wheat to ensure that everyone had a share; greed and selfishness were not tolerated (Ngugi wa Thiong'o, 1967). That was what sustainability entailed. This section proceeds to highlight the sustainability innuendo transmitted in the form of proverbs in selected African languages.

i) Teamwork/Collaboration

African society encouraged working together and exchanging constructive ideas. The values were aimed at sustaining the life of the individual and that of the community by inculcating team spirit and promoting team work. This is evident in such communal African practices as collaborative work parties (*nhimbe*) where people rendered assistance to one another and particularly to widows where such jobs as ploughing, thrashing grain and thatching huts were concerned. The Chewa proverb *Mutu umodzi susenza denga* (One hand cannot lift a roof), buttresses the call for collaboration, whatever the endeavour one wishes to undertake. The proverbs cited in this section portray that ethos of working together thereby discouraging selfishness and individualism:

Shona:
Chara chimwe hachitswanyi inda.
(One finger cannot crush a louse: One cannot go it alone where co-operation is required).

Rume rimwe harikombi churu.
(One man by himself cannot surround an anthill: One cannot do certain things alone, but needs community input).

Kuturika denga remba kubatirana.
(The putting up of a roof requires collaborative effort: The assistance of the community is required for certain chores because it is impossible for one person to undertake those tasks single-handedly).

Mazano marairanwa, zanondoga akapisa jira.
(Ideas should be shared, the one who would not listen to what others said suffered the preventable accident of burning his blanket: Taking other people's advice safeguards one from making costly mistakes in life).

Varume vamwe chete, kutsva kwendebvu hudzimurana
(Men are one, when one man's beard catches fire the others extinguish it: You help someone today and he helps you tomorrow)

Swahili
Mkono mmoja hauchinji ng'ombe.
(A single hand cannot slaughter a cow).

Mti pekee haujengi.
(One builds nothing with one tree only).

The proverbs cited in this section, therefore, buttress the issue of teamwork, collaboration and coexistence.

Perseverance/Commitment
The sustainability issues brought out by the proverbs cited in this section bring out the message of sustaining the life of an individual by urging hard work since hard work means being able to fend for oneself. An individual who is self-

sustaining is of more value to society. Hence, the message in these proverbs is that one has to work for oneself and persevere even in times of difficulty:

Chinokura usipo imombe, munda unokura nokuvandurirwa.
(What grows without your constant watch is a cow; crops in a field have to be tended: One has to be committed for a venture to be successful).

Chinokura choga isango; munda kukura huona tewe.
(Only a forest grows without being looked aafter; crops in the field require tending from the farmer: One has to be committed for a venture to be successful).

Yoruba:
Adùn ní ńgbèbìn ewúro.
(The aftertaste of the bitter leaf is sweet: Sweetness and pleasure come after exertion).

Igbo:
Nwayo nwayo k'eji ara ofe di oku.
(Hot soup is eaten gradually and in stages: One accomplishes an enormous task gradually and in stages).

Xhosa:
Umzingisi akanashwa.
(One who perseveres has no misfortune: You must not let obstacles discourage you. If you persevere you will eventually win.)

The value of perseverance and commitment is stressed in the proverbs above. The guiding philosophy is that for one to accomplish anything in life, one has to persevere and be committed to whatever venture one would have set oneself to do. The one who easily gives up never succeeds.

iii) Innovativeness/Trying something new
The belief portrayed in the proverbs of innovativeness is that if a society does not innovate it dies. Once people stop thinking outside the box with regard to how they can overcome their challenges, it becomes very difficult to sustain life beyond those problems. Accordingly, the philosophy espoused in these proverbs

is that of creative thinking. The phenomenon of creative thinking is not new in African society, and has been there since time immemorial.

Shona:
Chakakodza nguruve hachizivikanwi.
(What makes a pig fat is unknown: Trying new things may create new opportunities)

Zvinhu zviedzwa chembere yekwaChivi yakabika mabwe ikanwa muto.
(One has to try new things, the old woman from Chivi cooked stones and drank the soup: One has to be courageous to try uncharted waters).

Gunguo rakapona nehwakumukwaku.
(A crow survived by hopping around: A person survives by being enterprising).
Kashiri kasingapambari hakanuni.
(A bird that does not go out to look for food will not grow fat: If you are not dexterous you will not accomplish much in life).

Igbo:
N'ugbo onye huru onwe ya ka ona anya.
(One must row in whichever boat one finds oneself in: One makes use of available resources and adapts to prevailing circumstances).

The overarching message in these proverbs was that even if something seems impossible at first, if you put your mind to accomplishing it, you generally always succeed.

iv) Unity/Coexistence
Sustainability issues are embodied in proverbs of unity and coexistence in that as alluded to earlier, sustainability from the African perspective is focussed on the sustenance and continuity. Hence, the proverbs cited on unity and coexistence speaks to this continuity socially and economically.

Shona:
Ukama urimbo kudambura hahubvi.
(Kinship is like bird lime; you cannot break it: Kinship is forever, you cannot sever ties with your relatives).

Kandiro kanoenda kunobva kamwe.
(A small plate goes where another has come from: One good turn deserves another).

Ukama igasva hunozadziswa nekudya.
(Kinship alone is inadequate; food fills in the gaps: One should always provide for one's kin; no one should go hungry).

Zulu:
Umuntu umuntu abantu.
(A person is a person because of others = Humanity and coexisting with others).

Igbo:
Otu ala adighiazunwa.
(A child does not die because the mother's breasts are dry: This proverb teaches the importance of community-sharing, mutual inter-dependence and the importance of watching each other backs).

v) Honour/Uprightness/Unhu/ Peaceful co-existence
The concept of *unhuism* traditionally played a pivotal role in Shona society. Society could only be sustained if the community was made up of people who respected self and others. Respect for self meant that someone would not act in ways that brought shame to himself, his family and the community. Hence if someone wanted to do any misdemeanour it was encouraged that he does it far away so that people in his own community would vouch for his good character. This is the context of the proverb, *Muroyi royera kure vekwako vakureverere* (Witch bewitch those from afar so that your kin can defend you).

Shona:
Mukadzi wemumwe ndiambuya.
(Another man's wife is a mother-in-law to you. The exhortation is to respect another man by observing the cultural distance between you and his wife). Respect for others entailed a lot of things. One of the Ten Commandments in the Bible warns against coveting a neighbour's wife or his oxen. These teachings are enshrined in the philosophy of the Shona through proverbs and were aimed at sustaining the peace and harmony of the communities.

Gudo guru peta muswe kuti vadiki vakutye.

(Elder baboon fold your tail so that the young can respect you: A leader should be humble and upright to earn the respect of subordinates).

Mukuru mukuru hanga haigari bvunde.
(An alder is an elder, the guinea fowl does not perch on a sorghum stalk: Respect is earned and one has to act with dignity in order to earn respect).

vi) Hard work
People were encouraged to work hard. Lazy/slothful individuals were mocked; hence it was inculcated through the socialisation of children that one had to work hard in life in order to be successful and self-sustaining. Within the Shona culture, work parties (*nhimbe/hoka*) were organised for the purposes of assisting one another with difficult tasks. Even widows, orphans and the differently-abled were well taken care of through these societal support systems.

Shona:
Hapana inofurira ivete.
(No beast grazes for a sleeping one: One has to work for oneself).

Hapana kunomera sora roga.
(Grass does not grow of its own accord: Everything has to be worked for and earned; nothing in life is for free).

Hope hadzina ndima.
(Sleep does not accomplish anything: You will not succeed in life if you are not willing to work hard).

Swahili
Huwezi kujua ukiwezacho mpaka umejaribu.
(You cannot know what you can do until you have tried).

Utumainie mmea ulioisha panda.
(Put your hope on the plant you have planted: Hard work guarantees one a good future).

vii) Sharing/Selflessness

The proverbs on sharing and selflessness implored society to be selfless and share what they had. Giving and sharing with others sustained life and society and ensured continuity.

Shona:

Kupa kuturika.
(Giving is like hanging something you will retrieve later: Be selfless and share what you have because you will reap the rewards in future.)

Kandiro kanoenda kunobva kamwe
(A plateful goes to where a plateful comes from: Give and you shall be given.)

Mweni haaendi nedura.
(A visitor does not take away the granary: Be selfless and share what you have).

Mombe inopfuura haipedzi uswa.
(A cow passing by will not graze the whole pasture: Share what you have with others).

These proverbs underlie the fact that a visitor does not empty the granary.

Xhosa:

Umhambi uyahlinzekwa.
(A traveller is provided for: It is a good thing to look after those who have visited you).

viii) Sustaining life through caution

The cited proverbs in this section buttress the fact that African philosophy encouraged caution in order to sustain life. People were warned against haste when making decisions that are important in life. Young men were also cautioned from marrying women on the basis of outward appearances. Furthermore, contentment with the little things in life was considered a virtue. A person who is content will not cause disturbances for his neighbour. People are also cautioned to treat others well as they might need their help tomorrow.

Shona:

Mukadzi munaku kukona kuroya anoba.

(A beautiful woman can be a witch or a thief: Don't be fooled by outward appearances. All that glitters is not gold.)

Chembere mukadzi hazvienzani nekurara mugota.
(An old woman is a wife, it's better than sleeping in a bachelor's hut: Half a loaf is better than no bread. Be content with the little you have).

Gengezha mukombe hazvienzani nekumwira mudembe
(An old ladle is better than drinking from a broken gourd: Be content with what you have. Even if it is old and working, it is better than a broken new thing).

Shiri yakangwara inovaka dendere rayo mvura isati yanaya/yaturuka
(The wise bird builds its nest before the rains come: This is a caution to plan and prepare for the future in advance).

Chinokanganwa idemo, muti watemwa haukanganwe
(What forgets is the axe; the tree that has been cut does not forget: This is a caution to do to others today as you would like done unto you tomorrow)

Kuchenjedza vanyamukuta kuzvara uchakuda
(Messing up with the midwife when you still want to give birth: A caution to wisdom, do not mistreat those you get help from because tomorrow you will still need their help)

Aive madziva ave mazimbuko
(What used to be deep pools in the river are now fords: Be careful how you treat people on your way up because you will need them on your way down. Fortune may favour you today but may equally leave you tomorrow).

Venda:
Thakha ndi mulambo, a i lengi u fhalala.
(Wealth is like a flooding river; it goes down quickly: A person should not over-rely on their wealth to the detriment of human relations).

Swahili:
Sifanye mashindano na mtu.
(Do not compare yourself with another person. Warns against competition).

These sayings of the Africans, therefore, were aimed at bringing societies together through harmonious living. The emphasis was on building relationships that ensured the sustainability of individual and community livelihoods.

ix) Conservation

The proverbs on conservation relate to the need to wisely utilise available resources and conserve them for the future. They also look into the conservation of what today might be of unknown value, yet may be valuable tomorrow. Conservation of resources is a key aspect to livelihood sustenance.

Shona:

Regai dzive shiri, zai harina muto (Let them be birds, eggs have no gravy/soup) /*Wadya zai wadya nhiyo yacho* (One who eats an egg eats the chick).

This cautions people to curb their appetite and conserve living things when they are young as they will reproduce and give more when they have matured.

Rera chigokurerawo

(Rear it and it will rear you = When you look after something today, tomorrow it will provide for you).

Hauzive chakakodza nguruwe

(You do not know what made the pig fat = Think twice before discarding or destroying what at the moment looks useless, what is of no value today may be of great value tomorrow).

Ndebele:

Inkomo kayisengwa ngokwehlisa.

(Do not continuously milk a cow until there is nothing to milk = Use resources wisely and think about the future).

Sustainability in Africa - Present and Future

On the basis of the discussion in this chapter certain emerging issues based on existing practises that are applicable for Africa's development path are identified. Sustainability is better understood and practised from a people's worldview**.** Indigenous Africa has its own epistemologies as explained by Shava (2008:15). Accordingly, indigenous epistemologies are the ways indigenous peoples understand, conceive and perceive the world or their worldviews (how they come

to know what they know) and the way and roles that knowledge plays in their lives. The authors propose that Africa's indigenous worldview, besides contributing to its own development, make a valuable contribution to the world in the field of human relationships, giving the world a more human face (Smith, 2003:1). Development should never be planned and implemented without taking into consideration the context of the people for whom it is being planned. A society may not fully support a programme if they do not feel it, enjoy it and have reason to value it (Sen, 1999; Ndlovu and Ncube, 2014). In view of this, it is, therefore, imperative for anyone intending to initiate any development programme for any community in Africa to first understand the ideologies, philosophies and worldview of the intended people before they plan to implement any programme for them (Ndlovu and Ncube 2014).

Conclusion

The sustainability practices of indigenous peoples are embedded in their culture and embodied in their livelihoods (Shava, 2013). Some of these practices are conveyed intergenerationally through proverbs in the language of the indigenous people, which serves as the medium of communication. This chapter focused on selected Shona proverbs and elaborated on their embedded sustainability meanings related to the aspects of teamwork and collaboration, perseverance/ commitment, innovativeness, honour/uprightness, hard work, sharing/selflessness, caution and biodiversity conservation. These proverbs reveal that sustainability is an integral aspect of the traditional livelihoods of the Shona people of Zimbabwe.

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CHAPTER 9: THE LANGUAGE-DEVELOPMENT NEXUS: BETWEEN RHETORIC, POLICY AND PRACTICALITIES

Hebert Chimhundu

Abstract

This chapter is a comparative review of the 1986 Language Plan of Action for Africa, revised in 2006, and the Harare Declaration and Plan of Action of 1997. The latter was part of the *Report on the Intergovernmental Conference on Language Policies in Africa* (March 1997). The writer argues that these two plans of action still provide the full rationale, guidelines and framework for the formulation and implementation of comprehensive national language policies in Africa, and for their alignment to achieve both social cohesion and regional integration. While addressing the challenges and obstacles to progress so far, it is observed that many conferences have been held since recycling the same issues but very little progress has been made on the ground. In this regard, suggestions are made on what steps can be taken to break out of this cycle of rhetoric and to get down to the practicalities of best practice by linking language policy and planning to development goals. Related questions addressed include whether or not language is actually seen as a factor for development in Africa by Africans themselves, and why culture and local knowledge are now acknowledged as being important for sustainable development by both state and non-state actors. Some reference is made to performance vis-a-vis millennium development goals in Africa generally and to *desiderata* for post-2015 sustainable development goals, with the strong suggestion being made that culture, language and related technologies are the missing links. An attempt is also made to critique Agenda 2063 insofar as there could be missing links and weak links between culture, language and technology on the one hand and, on the other, the grand vision, aspirations and roadmap for The Africa We Want.

Introduction: Missing Links in African Development

In this chapter, the main objective is to show that language and culture are the missing links in African development, and that, therefore, many of the other links that are needed such as related technology applications are either missing or weak as a result. What is needed is to bring culture more to the centre in development planning in order to provide a firm basis for sustainable

development. In turn, a necessary precondition for making culture a development goal is language raising, specifically the development, promotion and wider use of indigenous African languages in major domains as a form of empowerment for the speakers, given that language expresses, carries and transmits all of the above. Such language raising can and should be accelerated by taking advantage of advances in information and communication technology, specifically human language technology. By extension, the basic point about the imperative to technologise in order to revitalise and develop also applies to cultural industries and indeed to all things African.

A lot of research and many high-powered conferences have already shown that carefully considered multilingual policies can be crafted and that they could bring about the desired results in reasonable time. If these policies were seriously implemented in an inclusive way, local languages could all find their space to function in various domains at various levels in complementary roles with both the major vehicular African languages and the regional *linguae francae* that were adopted from the colonial era. Indeed, a comprehensive and practical multilingual policy framework was crafted during the UNESCO-supported Intergovernmental Conference on Language Policies in Africa in 1997 (Chimhundu, 1997; Legere 2002; UNESCO, 2006), and a lot more has happened since then at the regional and international levels. Worthy of mention here are the two UNESCO culture conventions, the Convention of the Safeguarding of the Intangible Cultural Heritage (2003) and the Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005), as well as the revised Language Plan of Action for Africa (2006) and the creation of the African Academy of Languages by the African Union (2006).

In the considered opinion of the present writer, there are two major reference points on language policies in Africa. The first one is the Language Plan of Action for Africa, which was originally adopted by the Organisation of African Unity in 1986, and was subsequently revised in 2006 by the African Union but remained basically the same in content. The second is the Harare Declaration and Plan of Action from the 1997 Intergovernmental Conference on Language Policies in Africa (IGCLPA). In this chapter, the writer reviews both the OAU/AU 1986/2006 and the 1997 IGLPA documents and proceeds to evaluate progress that has been made in implementation before making some concluding remarks and recommendations for the future. Both language action plans were based on the principle of accepting and managing cultural diversity and multilingualism, which together are recognised as a rich resource for, rather than an obstacle to, development. Therefore, both action plans adopted a

multilingual approach to designing a generic policy framework. Not only does this comprehensive and inclusive multilingual approach promote and strengthen unity in diversity and social cohesion, but it also gives a utilitarian value that empowers speakers, artists, workers, professionals and intellectuals in several important ways. This is so because of the vehicular function of language and its centrality to cultural expression and creativity, and to knowledge production, acquisition and dissemination. Therefore, deliberate and long-term language development programmes that are accelerated by technology applications have obvious implications for the whole culture sector. Accordingly, culture has to be the anchor for Africans. Indigenous or local or community languages must no longer be seen just as markers of ethnic identity but also as tools of production. In turn, culture, which cannot be separated from language, must form a firm basis for sustainable development towards the total emancipation of Africa and Africans at home and in global context.

The main body of this chapter constitutes a comparative review of the 2006 and 1997 language plans of action for Africa, which is followed by discussion to evaluate progress that has been made in formulating and implementing policies at the national level, guided by the framework provided by these two Africa-wide action plans that are, in fact, quite similar in spirit and intent. However, the scope of this chapter is limited and, therefore, does not allow the writer to examine individual country situations. Not only is the current evaluation made in a historical context, but more importantly for the African renaissance, it seeks to identify pointers to future developmental goals that could be neglected again but are also important for the sustainable development of the continent. Particularly with reference to sub-Saharan Africa, the writer argues that the missing links and weak links in African development programmes are language, culture and technology. While retaining focus on the language plans, their implementation or lack of implementation thereof, the chapter also highlights the potential of utilising language technology applications and of similarly 'technologising' Africa's vast cultural resources, specifically the numerous elements of intangible cultural heritage and diverse forms of artistic expression as these are defined respectively in the 2003 and 2005 Conventions.

The Language Plan of Action for Africa (1986/2006)

The departure point for reviewing the Language Plan of Action for Africa has to be the creation of the Organisation of African Unity (OAU) in 1963, which was transformed into the African Union (AU) in 2000. The AU was established to promote the unity and solidarity of African countries, defend state sovereignty,

eradicate colonialism, promote international cooperation, and coordinate and harmonise Member States' policies. It is in this general context, particularly with reference to policy coordination and harmonisation, that the Language Plan of Action for Africa (adopted in 1986 and revised in 2006) is being reviewed here. The Plan of Action itself was in accordance with the provisions of the Cultural Charter for Africa, adopted by the OAU in1976 (Organisation of African Unity, 1976, Part I Article 1 (a) and (b), Article 2 (a), Part III Article 6.1(a), 2(b) and Part V Articles 17-19).

In the preamble of the Language Plan of Action for Africa (henceforth LPAA), the Heads of State and Government noted that language lies at the core of people's cultures and that it is both a resource and a tool for their advancement. They emphasised the need for member states to accommodate multilingualism and to democratise access to education in particular by officially recognising and promoting all African languages, including and especially those that transcend national frontiers, as these were a vital factor for the cause of African Unity. They acknowledged, however, that lack of political will was a stumbling block to implementation of such proactive policies, while prevalent negative attitudes had to be reversed by sustained campaigns. They also noted that:

> ...the majority of Member States have not taken the necessary practical steps to accord their indigenous languages their rightful official role as provided for by the Cultural Charter for Africa, the Lagos Plan of Action and other related resolutions of the Organization of African Unity (Organisation of African Unity. 1987, Preamble, p. 2.).

If anything, African languages have continued to be vernacularised after the attainment of political independence (Chimhundu, 1993). In fact, many people continue to refer to African languages as vernaculars in the post-colonial era, including Africans themselves, which is a major contradiction because a vernacular is a language that is spoken by people who are dominated politically or socially by people who speak another language. So are Africans unwittingly accepting that they are still dominated by non-Africans? The LPAA was, in fact, a loud statement that was made 30 years ago by African Heads of State and Government that it was imperative for Africa to assert its independence and identity in the field of language. They reiterated this position 19 years ago. The section in the LPAA on aims, objectives and principles actually stresses the need

for clearly-defined national language policies that officially recognise all the languages within each member state's boundaries and to make appropriate legal provisions for them, as well as enhance practical promotion of their use in all the major domains, including education and public life. This would have to be done alongside the dominant former colonial languages while gradually raising the profiles of African languages in reverse proportion to the non-African languages.

Africa had a clear policy position well ahead of the 2005 UNESCO Convention on Cultural Diversity. The irony of the situation is that Africa is now seeking to be informed by this Convention and by the related 2003 UNSECO Convention on the Intangible Cultural Heritage to find its way back to policy positions that, in principle, the OAU had originally taken on language and culture in 1986 and 1976 respectively. The LPAA even had written into it priorities for action. These included the formulation of clear national language policies and clearly spelt-out methods and means of fulfilling the stated objectives at continental, regional and national levels. It is also worth noting that, to demonstrate their seriousness, the political leaders at the time made a commitment to adopt indigenous African languages as working languages at all these three levels, that is, at the continental, regional and national levels. Member states also pledged to create structures such as national language councils and empower them to ensure the implementation of policies that were explicit about the status and roles of the indigenous languages of Africa, and also to allocate the necessary financial resources for all of the above.

The domain of education was highlighted as being of critical importance. At the apex of the education system, the LPAA stated that African universities and research institutes were to be instrumental in "strengthening the role these languages play in the daily lives of African peoples." Therefore, the African academy would have "to strike a proper balance in future between the scientific study of the African languages and their actual use and practical promotion." (Organisation of African Unity. 1987/2006, Part III, para. i., p. 5.) What they had in mind was elaborated as the:

> compilation of technical and general dictionaries, the writing of textbooks on useful subjects, the training of teachers of language, translators, interpreters, broadcasters and journalists, the production of useful books and other types of literature, relevant to the lives of contemporary Africans and the up-dating of vocabulary in African languages (Organisation of African Unity. 1987/2006, Part III, para. j., p. 5)

These issues that were clearly articulated in the LPAA by the OAU in1986 and reiterated by the AU in 2006 are the very same issues that were addressed in much more elaborate detail by combined delegations of scholars and government ministers who produced the Harare Declaration and Plan of Action in 1997. Nothing new or more substantive has come up since 1997. Accordingly, these two action plans remain the major reference points on language policies in Africa to the present.

The Harare Declaration and Plan of Action (1997)

The Harare Declaration and Plan of Action were the major outcomes of the Intergovernmental Conference on Language Policies in Africa (LGCLPA) which was held in Harare, Zimbabwe, 17-21 March 1997 under the auspices of UNESCO (the United Nations Educational Scientific and Cultural Organisation) in close collaboration with the Government of Zimbabwe (UNESCO 2006; Chimhundu 1999). All African member states of UNESCO were invited and 51 actually attended with each of the delegations comprising language specialists who attended as governmental experts and relevant government ministers. The former did the preparatory work during the Experts' Meeting and advised the latter who made the decisions and adopted the Declaration and Action Plan during the Conference of Ministers, the idea being to guarantee official acceptance and subsequent implementation in their respective countries. A number of other governments from outside Africa were also represented by observers, as did intergovernmental organisations that included the OAU and *Agence de coopération culturelle et technique*, now the *Organisation Internationale de la Francophonie* (ACCT).

The IGCLPA recognised that all African countries were multilingual. However, the multiplicity of languages was not a bug bear. Rather it was a source of enrichment for the African people. At the same time, imported languages and particularly the languages inherited from the colonial era had become an accepted part of the language situation in Africa. Therefore, the focus was on designing a common political and technical management framework for multilingualism that was comprehensive and flexible enough to allow individual member states to formulate policies that suited their particular national situations but were guided by the same principles, and then to implement those policies using the same tools. Particular emphasis was laid on using African languages in all spheres of life and connecting them to the development process, as well as on agreed programmes of concrete actions to put the recommendations into

practice. Accordingly, a Follow-up Committee of five countries was elected with each country representing and being responsible for a particular geographical area, as follows:

- Lesotho for Southern Africa
- Tanzania for East Africa
- Gabon for Central Africa
- Ghana for West Africa
- Morocco for North Africa.

The OAU, ACCT and UNESCO were also designated members of the committee, with the monitoring role assigned to UNESCO.

The general aim was that each African state would set out and follow a clear and comprehensive national language policy indicating precisely the statuses and functions of the languages in use and the measures proposed to implement the policy. Since such a policy at the national level would have to be specific, coherent and realistic, its formulation would have to be preceded by research, much of which had already been done across the continent over the years. Some national language profiles had been prepared prior to the IGLPA and afterwards (Maho, 2001), and statistical data was compiled for UNESCO as a follow-up to the conference (Gadelii, 2004). The idea was that this researched information would be used at the national level to determine:

- Which languages were the dominant local languages, inter-community languages or languages used more widely;
- Which languages were used for what and at which levels; and
- What budget was required for further research, production of materials (especially for teaching), equipment, personnel and the structures to be set up to manage this policy.

The language policy itself must:

- Define short, medium and long term goals;
- Take stock of the problems to be resolved; and
- Determine the methods and resources to be used, and, in particular, the mechanisms to be set up.

The basis for the strategies laid down must be the linguistic landscape of the country and the region and, among the functions to be specified for each of the languages in the particular context, must be its use in the exercise of state functions and in relations between the state and its citizens. Thus the conditions for action had been set, the framework for formulation of national language policy was provided and guidelines for implementation were given.

Progress in Implementation of the Action Plans in relation to Development Goals and Agenda 2063

Performance on the formulation and implementation of comprehensive language policies in Africa has been poor at the national level, although in many cases the national constitutions officially recognise the indigenous languages in the territory of an AU member state. An example is the new Constitution of Zimbabwe (Zimbabwe Government, 2013). By all accounts, the two action plans reviewed herein have remained largely unimplemented. This view is endorsed below by rather extensive reference to an article by one of the most respected African scholars on the subject, Ayo Bamgbose (2014), particularly with reference to the Millennium Development Goals (MDGs) and the New Partnership for Africa's Development (NEPAD).

At this point, however, it is pertinent to briefly mention that what this paper discusses has a bearing on the 2030 sustainable development goals (SDGs) that have replaced the MDGs. The MDGs were originally affirmed by the UN Member States as a far-reaching vision of the future in the form of the Millennium Declarationin year 2000. During the build-up towards the SDGs, non-state actors (networks of governmental and non-governmental organisations and cultural agencies) waged a campaign to have an explicit goal that focuses on culture included in the Post-2015 Development Agenda. In turn, this position was informed by the Hangzhou Declaration (2013), which placed culture at the heart of sustainable development policies and recommended that "a specific Goal focused on culture be included as part of the post-2015 UN development agenda, to be based on heritage, diversity, creativity and the transmission of knowledge and including clear targets and indicators that relate culture to all dimensions of sustainable development" (UNESCO 2013). A logical extension of the argument is that since language would be at the core of culture and culture is transmitted to future generations through language, indigenous languages should also be explicitly stated, either as part of the goal on culture or as a separate goal. However, language was not mentioned explicitly in the document

"Culture as a Goal in the Post-2015 Development Agenda" (Arterial Network, Final Draft – 20130925). In any case, the 'Culture as Goal' campaign was not successful and the 17 SDGs that were eventually adopted by the UN do not include a goal on culture. There is only very cursory reference to culture in goal 4, which is on equitable education and lifelong learning opportunities, and urges the "promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (United Nations, 2015, SDG 4.7, p. 9). Yet article 64 of the UN adopted SDG document specifically links the SDGs to Agenda 2063 and NEPAD by reaffirming "the importance of supporting the African Union's Agenda 2063 and the programme of the New Partnership for Africa's Development (NEPAD), all of which are integral to the new Agenda." (United Nations, 2015, article 64, p. 22.) This is a contradiction. It would seem that the more powerful nations of the world that are comfortable functioning in the six UN languages (English, French, Spanish, Chinese, Russian and Arabic) are equally uncomfortable to have an explicit goal on culture and or explicit reference to language, but both culture and language are highlighted in the AU's Agenda 2063, Aspiration 5.

In past meetings of the General Conference of UNESCO (2012 in particular, which the present writer attended), African delegates have actually articulated issues relating to indigenous languages through the Culture Commission, even suggesting the need for a separate convention for marginalised indigenous languages. As was quite evident from the agenda of the Fourth Pan-African Cultural Congress (PACC4, May 2015), language issues are very much a part of the culture debate in Africa and they will not go away. Another big issue in Africa that will not go away is that of cross-border languages, a situation that was inherited from the arbitrary boundary demarcations of the partition period of colonisation following upon decisions taken at the Berlin Conference in 1884. This issue of cross-border languages does have a bearing on regional integration, which is part of Agenda 2063. African languages should, in fact, be regarded as part of the soft infrastructure for sustainable development from the local community to the national and (sub-). regional levels, and they have to be developed as such. To a limited extent, the issue of cross-border languages has been attended to by the African Academy of Languages (ACALAN) and by the Centre for Advanced Studies of African Society (CASAS). A brief review of Agenda 2063, Aspiration 5, which deals with culture and language, will be discussed after summarising Bamgbose's views on MDGs and NEPAD.

The MDGs and NEPAD

In an article titled "The Language Factor in Development Goals", Professor Emeritus Ayo Bamgbose (2014), President of the ACALAN Assembly of Academicians, stresses that development is broad in scope and it is not simply socio-economic. Often, however, development is narrowly circumscribed to refer only to the quantitative value of goods and services without taking into account the well-being of citizens. This is why we end up with periodic development plans or even long-term plans with development goals that make no reference to language and culture. For illustration, Bamgbose shows how language can aid the realisation of development goals in four domains: communication and information dissemination, transfer of technology, education, and good governance. He concludes that all the MDGs require an indigenous language as a necessary tool.

Before the 2030 SDGs, two sets of development goals were pursued in Africa from the turn of the century, that is, the AU's NEPAD and the UN-sponsored MDGs. The eight (8) MDGs, which were supposed to be realised by 2015, were the eradicating of poverty, universal primary education, gender equality, reducing child mortality, improving maternal health, combating diseases (esp. HIV and AIDS, and malaria), environmental sustainability and global partnership for development. When the AU adopted NEPAD in 2001, four (4) goals were set, and these were eradication of poverty, promotion of sustainable growth and development, integration of Africa into the world economy and empowerment of women. Both the MDGs and NEPAD goals are still far from being realised.

Bamgbose observes that, over the years through the entire post-colonial period: "Persistent reports on the implementation of development goals have tended to underscore underperformance, either in terms of a shortfall in the targets attained or in terms of inadequate pursuit of specific goals" (Bamgbose 2014:3). In light of these failures, NEPAD and MDGs were likely to suffer the same fate, and indeed, NEPAD already has. Bamgbose suggests that there is obviously something wrong in the way these goals are being pursued by African countries. After reviewing the reasons that have been given in reports on these failures, and having observed also that neither the blueprint on NEPAD nor that on MDGs referred to language at all, he concludes that language is the missing link:

> It is significant to observe that in all the reasons advanced for failure to attain development goals, no mention has been made of language as a contributory factor. This is not surprising as the tendency has always been to view development narrowly in socioeconomic terms to the neglect of the human factor (Bamgbose 2014:5).

The reality on the ground is that African languages have continued to be vernacularised after independence (Chimhundu 1993) because, although some of them are referred to as 'national', 'officially recognised' or even 'official', such designations are meaningless because they are not backed by clear policies and implementation programmes. The former colonial languages remain firmly entrenched in all the major domains in most of sub-Saharan Africa. Yet language scholars have repeatedly stressed that development is not possible without language because development is about people. They contribute, they participate and in the process 'they require communication, dissemination of information, sharing of knowledge, feedback and acquisition of skills. None of these activities can be achieved without language' (Bamgbose 2014:5).

Similarly, culture has to be recognised as an important factor in the realisation of development goals. A people's customs, beliefs, traditions and practices do affect the way people react to new ideas and situations. Bamgbose (2014) similarly illustrates the importance of culture by looking at the education, gender and health-related goal in the MDGs.

- There is vast potential for development and contribution of the creative industries to the economy in African countries especially considering our rich cultural heritage and creativity. There are several success stories that should inspire African governments to invest in legal, human and financial resources in this sector from around the globe. Among the countries that are acknowledged to have creative and cultural industries that make significant contributions to gross domestic product are Britain, the United States of America, India, Brazil, Nigeria and South Africa. For example, figures released by Department for Culture, Media and Sport in the United Kingdom on 14 January 2014, showed that:
- The creative industries were worth £8 million an hour to the UK economy;

- Growth was almost 10% in 2012, outperforming all other sectors of UK industry;
- The sector accounted for 1.68 million jobs in 2012, 5.6 per cent of UK jobs; and that
- The UK's creative industries, which include the film, television and music industries, were worth £71.4 billion per year to the British economy – generating just over a staggering £8 million pounds an hour (Department for Culture, Media & Sport, United Kingdom, 2014).

A few things that we can learn from this example alone are that we need to get sufficiently organised, businesslike and world-wise, to exploit available technologies (especially ICTs and digital media), and to produce cultural statistics regularly in order to evaluate how well we are doing or otherwise in the arts and culture sector. University researchers can help in all these areas; and this is just one example of the agency role of the African academy. In light of the above, perhaps hope for sub-Saharan Africa now lies in the AU's Agenda 2063, assuming that the countries in the region have mastered or will master the political will to implement it seriously in a sustained manner, and that higher education institutions in Africa have transformed enough to take up the challenge of becoming agents of transformation themselves.

Agenda 2063: The Africa We Want

African Agenda 2063 was conceived by the African Union in 2013 as a vision and an action plan for Africa during the next 50 years after reviewing and while celebrating the first 50 years of political independence. The vision is based on eight (8) ideals that serve as pillars and spells out specific objectives, milestones, goals, targets and actions/measures to which African countries must remain committed and focused. The principal objective is to build a prosperous and united Africa based on shared values and a common destiny in the context of a rapidly changing world. Agenda 2063 was formally adopted by Heads of State and Government of the African Union in Addis Ababa, Ethiopia, during the 24th Ordinary Session of the Assembly of the Union in January 2015. By way of confirmation that they had heard "The Voices of the African People", the leaders reviewed past plans and commitments and pledged to take into account the lessons learnt. Then they defined seven major aspirations for "The Africa We Want" and made a firm commitment to carry out the actions that were agreed in

order to realise each and every one of them. Clear strategies were adopted, goals were set and priority projects were agreed upon.

For the purposes of this paper, only two aspirations, numbers 2 and 5 that refer to culture and languages are important (2014). The rest (aspirations 1, 3, 4, 6 and 7) do not contain anything that has a bearing on culture or language or local knowledge, both in the statement of each aspiration and in its subsequent elaboration. The same applies to the rest of the document *Agenda 2063: The Africa We Want,* specifically the *Popular Version* (2nd edit., Nov. 2014), as well as the two related documents on Agenda 2063 that are available in the form of slide shows, that is, *An Overview* by Kachiza (2014) and the *Progress Report* by Potgeiter-Ngulube (2014). A slight exception is aspiration 1, which mentions indigenous knowledge in relation to agriculture only once. In this aspiration, which is for a prosperous Africa based on inclusive growth and sustainable development, reference to culture is only by way of inference when indigenous agricultural knowledge is mentioned as being useful in agricultural production, along with science, technology and innovation.

It is aspiration number 5 that refers directly to culture and languages. This aspiration is for an Africa with a strong cultural identity, common heritage, values and ethics. It states that in the Africa that is envisioned by 2063, diversity in culture, heritage, languages and religion shall be a source of strength for the continent. In addition to the teaching of Pan-African ideals in all school curricula, Pan-African cultural assets will be enhanced. These assets are specifically mentioned as heritage, folklore, languages, film, music, theatre, literature, festivals, religions and spirituality. The African creative arts and industries will not only be celebrated throughout the continent and in the diaspora, but they will also contribute significantly to self-awareness, well-being and prosperity, in addition to world culture and heritage. The last two sentences of the same paragraph are worth repeating here verbatim: "The African languages will be the basis for administration and integration. African values of family, community, hard work, merit, mutual respect and social cohesion will be firmly entrenched", (African Union, 2014, para. 42, p. 7).

The elaboration of aspiration number 5 is really interesting in that it reflects current thinking on drawing strength from and managing Africa's rich cultural diversity, including multilingualism and the creative arts, as resources to be harnessed and utilised in the process of development, while their intrinsic social value is not lost sight of either. This is a more advanced stage of enlightenment than in the past when things cultural and therefore things African were only mentioned in relation to identity and to a rather nostalgic but static

past. Clearly, the letter and spirit of modern international standard-setting instruments are being invoked here, specifically the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) and the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005). However, as far as language and culture are concerned, most African countries still have a long way to go before they can finally break out of the trap of rhetoric or lip service and begin to formulate and to follow practical steps to implement comprehensive policies that are legally enforceable.

There is still far too much scepticism, negative self-evaluation and a confused form of elitism that readily embraces copycat culture or copy-and-paste solutions. Nevertheless, positive signs are beginning to show. As far as language policy and planning are concerned, perhaps the time is ripe to revive the old Language Plan of Action for Africa (1986/2006), interface it with the 1997 Harare Declaration and Plan of Action, and re-present an updated comprehensive version for formal adoption as the policy development framework on language matters under Agenda 2063. Three things are encouraging in this regard, two of them being from reading the text of Agenda 2063. The first is the section headed "A Call to Action" which provides for the setting up of "an implementation, monitoring, evaluation system to ensure the attainment of the African Aspirations." Such a system could also cover the proposed language policy and implementation framework. The second is inclusion of changed attitudes and mindsets on the list of critical enablers for Africa's transformation. This particular enabler can be reduced to a single word – belief. However, for a start, it would be good to show such belief by adding "Failure To Harness Local Knowledge, Languages and Culture As Resources" to the list of risk factors for Agenda 2063 that Potgieter-Gqubule (2014) compiled in slide number 19 of her presentation of the *Progress Report of The Commission on Agenda 2063*. The third is the work that is now being spearheaded by ACALAN and by CASAS in the area of language at the regional level. The Africa-wide language programmes of both the ACALAN and CASAS programmes provide a positive direction to follow.

ACALAN and CASAS

ACALAN is the official agency of the African Union Commission on language matters. It was founded in 2006 to foster Africa's integration and development through the development and promotion of the use of African languages in all domains of life in Africa. It has set up working structures in member states to

participate in the Vehicular Cross Border Languages (VCBLs) programme and in seven (7) other major projects. These are:

- Stories Across Africa
- Pan-African Master's and PhD Programme in Applied Linguistics
- Pan-African Centre for Interpretation and Translation
- Terminology and Lexicography Project
- Linguistic Atlas Project
- Project on African Languages and Cyberspace
- Training of African Languages Teachers and Media Practitioners.

While ACALAN is an agency of an intergovernmental organisation, CASAS is a very good example of an independent research centre that has been quietlty making an important contribution. Founded in1997 by the eminent scholar and pan-Africanist Professor Kwesi Kwaa Prah, CASAS runs a language research, documentation and promotion programme that is focused on the harmonisation and standardisation of selected major African languages or clusters of related 'language varieties.' Such language varieties may not be dialects of a given language, and may in fact be known by different names in neibhouring countries, each as a language in its own right, but nevertheless mutually intelligible to a large extent and can therefore be regarded as a cluster (e.g. Shona, see Chimhundu *et. al.* 2010). The rationale for this exercise is post-colonial re-integration of communities and economies of scale in the production and distribution of written materials, including educational publicatios, subject to approval of the relevant authorities in each country where people speak one or more of the varieites of the cluster as their first language or mother tongue.

CASAS does have other programmes besides language work. It actually functions as a Pan-African centre for creating research networks on the economic, social, historical, political and cultural aspects of development issues in Africa. The primary objective is to provide relevant expertise for research which is of service to African development. The resource group for CASAS work is predominantly drawn from African universities and research institutions. However, while study areas like archaeology, prehistory, anthropology and ethno-musicology are of interest, the major area of current involvement of CASAS is the classification of African languages on the basis of mutual intelligibility. This work is carried out as part of the CASAS Harmonisation and Standardisation of African Languages Project. Over the years, the Centre has

maintained a high rate of publication of works in the form of a book series, a monograph series, working papers and occasional papers. By the time the 4th Pan African Cultural Congress (PACC4) was held in May 2015, the total in the CASAS publication series was well over 100, with many of the monographs being on the harmonisation of orthographies of languages across the continent.

Both CASAS and ACALAN put language at the centre of the development agenda. It is no longer adequate or convincing to push the old and tired arguments of identity and pride even though these remain valid. Modern society now tends to appreciate the utilitarian value of language, culture and the arts which is quantifiable much more than their intrinsic value which is unquantifiable. In this regard, the *Cultural Statistics Survey of Zimbabwe,* (ZIMSTAT & Culture Fund 2012) has shown the way on how to demonstrate the relevance, contribution and further potential of the arts and culture sector to the economy in terms of percentage of gross domestic product. These kinds of arguments give mileage and leverage to cultural practitioners of all categories although it is known of course, that the unquantifiable intrinsic value of culture is far much greater than its quantifiable utilitarian value. Therefore, the utilitarian value must be pushed into greater prominence in order to get the recognition and support that is needed to change negative attitudes to a positive mindset that will unlock the full potential of the arts and culture sector.

Practitioners and players in the arts and culture sector must demonstrate what can be done and with what benefits to national development, social cohesion and regional integration. Otherwise, African languages and the whole gamut of extremely valuable elements of cultural heritage that they carry will continue to be neglected or trivialised instead of being used for both enjoyment and profit. At the same time, Africans as the custodians of all these elements of culture and as the owners of the local languages that are the vehicles for their transmission must learn to become technology-savvy so that Africans will not only regain our cultural space in the modern context of globalisation, but will also make global business out of culture. A lot of collaboration, research and development is needed if Africans are to ultimately regain their cultural space in the context of globalisation and also be able to make global business out of the continent's culture. This is one area where African Higher Education Institutions (HEIs) can and should come in and intervene radically by utilising their capacities for research, development and innovation. However, most of the HEIs in Africa do not seem to be involved much, if at all despite the fact that there is so much more that needs to done which they can and should do. This is

part of the reason why sometimes the question is asked whether we have African universities or universities in Africa.

In the area of language, for instance, most universities seem to be content with teaching and research in the conventional areas of linguistics (descriptive, theoretical and applied) and literature (various genres, criticism and theories of literature and criticism). However, what is not being achieved is the balance that was demanded in the original Language Plan of Action for Africa "between the scientific study of the African languages and their actual use and practical promotion" (OAU, 1986/2006, Part III, para. i, p. 5.). HEIs need to do more on the latter and show the way through research results and practical applications of human language technology (HLT), for instance, in order to develop the national or local languages that are indigenous to Africa, in partnership with the languages inherited from colonisation or "in relation with partner languages" (ACALAN, 2006, Statutes, Article 3, Objective 9).

Linking Technology with Language, Arts and Culture

Quite often, the biggest obstacle to progress is that most people cannot see how things are connected; that is, everything from who and where we are to what we do or know best as compared to any or all others. Knowing our own strengths and cultural assets should be the starting point in identifying both opportunities and threats in a fast-changing world, especially in the context of globalisation, which some erroneously think is the inevitable dominance of one culture and the use of one language everywhere at the expense of their own. Those who hold this view of globalisation are persuaded to look at their culture as frozen in the past, and therefore, to regard it as an obstacle to progress; hence the negative attitude towards "things African" that prevails especially among the "elite". Therefore, the sense of balance is lost in development planning. The result is that we tend to fail to understand and appreciate the value of each other's contributions and to place the correct value and balance on everything that makes up our real-life situations.

Another common weakness is our inability to develop longer term perspectives. This makes it difficult for us to pursue a common vision because we do not see what would be gained by all from all our small but different efforts and contributions. If we did, we would adopt a common approach to progress and development, an approach that was less ethnic or racial, less hegemonic or xenophobic, less parochial or provincial or regional, less personal or political, and less narrowly specialised rather than more holistic and integrated. What happens in the end is that people say the right things in the right places but are, in reality,

either insecure or lacking in belief. This is includive of and especially true of the leaders. The result is there is no political will to push the right policies through, even when these are articulated very well by the same people. Delivering the keynote paper during the Indaba (Conference) of the last Zimbabwe International Book Fair, Chimhundu (2014) described languages as the most powerful instruments of preserving and developing Africa's tangible and intangible heritage. He urged Africa to be more organised, business-like and world-wise, and asserted that this was, in particular, necessary with academic researchers who can and should lead the way in exploiting available technologies towards this end.

It is now possible to incorporate activities in a broad spectrum of disciplines by utilising the capabilities of human language technology (HLT) such as natural language processing, speech recognition and synthesis, knowledge acquired from texts and information extraction. HLT itself draws from a number of disciplines and it enables computers to interact with humans using natural language capabilities, and to serve as useful assistants to humans by providing services such as automatic text understanding and retrieval, information extraction question answering, and automatic translation. Language technology applications are now readily available for use in corpus building and lexicography. This has revolutionalised the way the way dictionaries are made and accessed nowadays, and increased tremendously the pace at which specialised terminologies can be developed and standardised. Once such reference works are available in electronic form, a whole range of language tools such as grammar and spell-checkers can then be developed and made available in modern media, even on hand-held gadgets like cell phones. And that is good business; but how often do we see these applications in African languages? And why not when we have so many universities in Africa, a good number of them universities on technology? Similarly, by linking technology with language, arts and culture, many products and services are possible in African languages, and that is potentially huge business, especially considering the richness and diversity of the continent's indigenous languages, cultures and forms of artistic expressions in forms such as the crafts, fine and visual arts, performing arts, literary arts, culinary arts, design and architecture. Consider, for example, the numerous opportunities in televisual entertainment, which could be drawing content from local cultures. Consider also cartoons for children as a niche market, just for illustrative purposes. To pick but one example only of content from African folklore, if the *rungano* (folktale) "*Mukwasha waMuchape*" (Shona) were to be produced and re-produced as animation in these formats with

subtitling in different African languages, it could easily sell across the region because it is a popular traditional story with many versions in different African languages, e.g. "Mungo" in Swahili. At the same time, just by using African tales and legends in this way, many downstream opportunities could be created for artists, writers and translators (Wadaw 2014).

Conclusion

As the saying goes, we are all as strong as our weakest link. Although consensus that language policy is important for both the cultural advancement of African peoples and the acceleration of their economic and social development has been reached, rhetoric remains our weakest link in sub-Saharan Africa. As demonstrated above, Africa has formulated and recycled excellent policy frameworks at the regional (i.e. continental) level in the form of charters and declarations, as well as plans of action and protocols, at international and intergovernmental conferences and even at the level of the OAU/AU Summit many times over, but we have done precious little to implement these on the ground at the national level. As with other things cultural, or as some of us prefer to call them, "Things African", what we get in the end is mostly mere rhetoric and tokenism. It is now 53 years since the Organisation of African Unity was established, 40 years since the OAU Cultural Charter for Africa (1976) was adopted, 30 years since the original Language Plan of Action for Africa (1986), 20 years since the Charter for the Promotion and Use of African Languages in Education (Accra 1996), 19 years since the Harare Declaration and Plan of Action (IGLPA 1997), 18 years since the Intergovernmental Conference on Culture and Development and the Action Plan on Cultural Policies (Stockholm 1998), and it is now 10 years since the Charter for African Renaissance was adopted, the Language Plan of Action for Africa was revised and 2006 was declared the Year of African Languages. The present writer has searched through various web resources and looked at various basic documents on language policy in Africa through and after this period. The writer could not find any comprehensive information on either cultural statistics or national language policies and practices in most African countries south of the Sahara. Neither could he find a formal study that shows us where individual member states are now in promoting African languages and in anchoring cultural diversity and shared values as espoused by the AU.

That lack of documentation and monitoring notwithstanding, it is fair to say that, as far as best practices are concerned in formulation and implementation of comprehensive language policies and in ensuring greater

promotion of African languages, the more things change the more they remain the same in most African countries. The chief obstacles are negative attitudes and lack of political will among the powerful elite, which is more comfortable with the status quo (Chimhundu, 1993). As a result, despite clarity on the benefits as stated in several charters and declarations that recognise the critical importance of harnessing indigenous languages in a practical manner for the advancement of African peoples, most member states have not taken the necessary practical steps to implement the resolutions of the OAU and AU on the same. Instead, we have been trapped in a vicious circle of rhetoric during the first half century of political independence. On a scale of 1 to 5 where in ascending order the numbers represent progress made from 1 suppression during the colonial era to 2 neglect, 3 rhetoric, 4 policy and 5 implementations, most members states of the AU are yet to progress from 3 to 5, the main obstacles being negative attitudes and a lack of political will.

However, when we read Agenda 2063 in conjunction with the Charter for African Renaissance (2006), and when we also look at the work that has been initiated by CASAS (since 1997) and by ACALAN (since 2006), some clear signs are already showing that the second half century of the post-colony may be different in sub-Saharan Africa. Therefore, the present writer makes the strong suggestion that the time has come to commit resources to action against timescale, to use and strengthen existing institutions including HEIs to do the groundwork, backed by legally enforceable policies and concrete structures, together with an apolitical monitoring and evaluation mechanism. In short, the motivation for formulating and implementing comprehensive language policies for which we already have frameworks and action plans is no longer sentimental or ideological or nostalgic or just about identity and belonging but, increasingly, it is now about linking language and culture to sustainable development. In these links, technology is a major catalyst. That is precisely why, in this chapter, we have stressed the urgent need to break out of the rhetoric trap of the conference circuit that was typical of the first half-century of the post-independence era and instead to push for more concrete actions on the ground.

Recommendations

On the matter of the 2006 LPAA guiding language policy formulation and ensuring greater promotion of African languages so that they become the "anchor of our cultural diversity and shared values" while we pursue Agenda 2063 to build The Africa We Want, six (6) recommendations are made here for consideration by and through relevant bodies, including PACC, as follows:

a) To convene a Second Intergovernmental Conference on Language Policies in Africa (IGCLPA), which is needed to review progress based on researched national fact profiles against previously agreed principles, policy frameworks and practicalities in the two language plans of action reviewed in this chapter in order to chart the way forward, and to link a 3rd revised edition of the LPAA to Agenda 2063 and to the 2030 SDGs.
b) This new version of the LPAA, which would be similarly approved by Heads of State and Government of the AU, should incorporate elaboration on practicalities informed by the 1997 IGLPA report, the UNESCO culture conventions (2003 on ICH and 2005 on Cultural Diversity), and the Hangzhou Declaration on sustainable development (2013), and culture and language as cross-cutting issues in the 2030 SDGs.
c) As part of the monitoring and evaluation to which Africa's political leaders have already committed in Agenda 2063, to create and register an Observatory of Language Policy and Practice in Africa (OLPPA) with monitoring, research and advisory functions to cover Sub-Saharan Africa in particular.
d) OLPPA to maintain official relations with both ACALAN and UNESCO and to collaborate on research, documentation and HLT applications with selected HEIs in all the sub-regions and member states. Such HEIs would have to be strong or strengthened in their capacity for basic language research and documentation, language raising in general and in particular HLT/LTA (language technology applications). A good example is the University of Dar es Salaam (UDSM), especially considering the status of Swahili as AU's 5th official language and the collaboration of BAKITA (Swahili Language Council) and UDSM in major ACALAN projects.
e) Cultural statistics from the creative economy and accurate facts and figures on national and regional language profiles compiled through commissioned research by HEIs and updated regularly by or in collaboration with national statistical agencies (cp. e.g. ZIMSTAT & CFoZT in Zimbabwe, 2012) in order to increase awareness and appreciation of the contribution of cultural industries to GDP/national development and to inform policy, e.g. on language in key sectors such as education, health, media, justice and local government.
f) Active participation of HEIs in, and contribution to, the seven major projects of ACALAN, especially:

- The Pan-African Master's and PhD Programme in Applied Linguistics;
- The Terminology and Lexicography Project; and
- The Project on African Languages and Cyberspace.

g) Keeping alive the debate on two issues for the future:

- Inclusion of "Culture as Goal" and explicit mention in "Language as Enabler" in SDGs up to and beyond 2030; and
- A new Convention on Indigenous and Marginalised Languages.

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CHAPTER 10: COMPLEXITY AND SUSTAINABLE DEVELOPMENT IN AFRICAN CONTEXTS

Joseph Zano Zvapera Matowanyika

Introduction

This chapter presents an approach to enable the thought process addressing the promotion of sustainable development within the context of systems complexity, meta-systems and systems theories which would apply to social-ecological analysis. Social-ecology by nature is about relationships between social and ecological systems. Sustainable development works within this sphere of interdisciplinary inquiry and practical research aimed at promoting enduring human welfare within the limits and opportunities offered by the natural systems which must remain healthy so as to support a growing human welfare. The elements for such analysis are presented here.

The Multifaceted Nature of Sustainable Development

Aspirations to Foster a Sustainable Continent

In their first and priority aspiration, the African Union in their "Agenda 2063: the Africa We Want" state: 'We aspire that by 2063, Africa shall be a prosperous continent, with the means and resources to drive its own development, with sustainable and long-term stewardship of its resources…' (African Union Commission 2015:2) They further indicate that:

> By 2063, African countries will be amongst the best performers in global quality of life measures. This will be attained through strategies of inclusive growth, job creation, increasing agricultural production; investments in science, technology, research and innovation; gender equality, youth empowerment and the provision of basic services including health, nutrition, education, shelter, water and sanitation (2015:3).

In article 67, it goes on to say it is:

> Our endogenous plan for transformation. It harnesses the continent's comparative advantages such as its people, history and cultures; its natural resources; its position and repositioning in the

> world to effect equitable and people-centred social, economic and technological transformation and the eradication of poverty. It seeks to fulfil our obligation to our children as an inter-generational compact, to develop Africa's human capital; build social assets, infrastructure and public goods; empower women and youth; promote lasting peace and security; build effective developmental states and participatory and accountable institutions of governance (2015:12).

These solemn statements provide the pathway for African leadership and its people in seeking a sustainable and prosperous society over the next 50 years. As an 'endogenous plan for transformation' it represents an important 'intergenerational compact' to advance the welfare of the continent's people. Agenda63 posits a comprehensive vision with the potential for a holistic trail to significantly improve the welfare of Africa's populations. In its comprehensiveness of intent and expected actions at national level, challenges are expected: the challenges of complexities and contexts (ISSC/UNESCO, 2013). Added to this is the expectation of creating a revolutionary status in the welfare of ordinary people. This array of issues is comprehensive and complex. Acknowledging complexity and the need for transformation and renewal within the context of African endogenous self-sufficiency is by itself positive. It is hoped that this will consciously promote efforts to seek suitable actions to be applied in appropriate contexts to change things for the better. Agenda 63 acknowledges the multi-faceted nature of issues that straddle the social and ecological divide in addition to political-economic practices. All this is within international economic and environmental contexts where financial systems are less functional and stable and climate change is beginning to impose pressures on people's survival and livelihood systems, among other issues (Lessem and Schieffer, 2010a, 2010b). Added onto this is a fast-changing information society and the emergence of an informational capitalist system.

Sustainable Development: a Popular and Potentially Populist Concept

Without detracting from its noble and lofty ideals, it must nonetheless be stated that sustainable development is indeed 'an unavoidable concept these days' (Elliot 2012). It is not likely that a process and document prepared in this age can ignore the issue of sustainable development and pass as a credible one. The concept of sustainable development itself has been around for a while. Popularised in "Our Common Future" (WCED, 1987), it ushered into the

debates and practice of development a sense that too narrow an economic and economic growth path had been followed in previous decades in seeking to promote nations' welfare. In addition to taking note of humanity as being central to economics, an apparent paradox, the concept sought to humanise approaches to the natural conservationist approach and debates in the previous several decades. Sustainable development as seen by Our Common Future sought to allow for the growth of human welfare within the capabilities of natural environmental systems and within the global context. Humans, as individuals, and not just amalgams of the market expected guided by an invisible hand of market forces have since become central to conceptualising development issues and the progress of nations.

Up till the 1980s, development as promoted by economists of the last two centuries was not designed to promote general welfare as a deliberate set of actions. Rather, economics was primarily meant to promote the interests and ideals of maximisation of surplus to capital. It was meant to create and sweat finance capital to maximum effect for capital owners. However, the view that the free enterprise and market profit maximising models and systems that have driven economics since Adam Smith's Inquiry into the Wealth of Nations (published in 1776) are dysfunctional in delivering on the requirements of ordinary humans in most parts of the globe has been widely accepted (Lessem & Schieffer, 2010a). Indeed the essence of Our Common Future, which followed several similar global perspectives on global common interests (WCED, 1987), was to emphasise the failures of the global and national economic systems. It was also dysfunctional from the perspective of protecting environmental and ecological integrity. Since then there has been a plethora of international activity in promoting sustainable development notably the Rio de Janeiro conference on environment and development in 1992 and successor activities. In itself the environment-development debate represents a major paradigm shift in how best to promote human welfare. Sustainable development is an accepted interdisciplinary concept that integrates issues from the divide.

Prone to being used and abused in a populist manner, the concept appeals to all shades of political systems and persuasions. Hence it has been applied to varied disciplines. There is an inbuilt vibrancy, currency and a ubiquitous presence in the nature of the concept itself. Hence reference is made to sustainable agriculture, sustainable communities, sustainable architecture and design, sustainable energy, sustainable business, sustainable engineering; etc. This is what we have to deal with. Further, the concept itself connotes a process of dynamism and continual change (Elliot, 2012). Agenda 63 also addresses the

recurring and growing problems surrounding the promotion of sustainable development within the African context. The agenda, like many other national, supra-national and global policy documents, consciously and otherwise calls for a major paradigm shift. In addition, the issues to be addressed and the outcomes and failures of economic policy and action over the last 100 years of colonial and post-colonial African nations are noted. Agenda 63 is potentially of popular appeal and can, therefore, be purely populist in its application. As already noted, the matters of concern in addressing sustainability are complex as indicated in the quotations cited earlier.

Sustainable Development Concept a Complex Issue Amalgamating Multiple Paradigms and Visions

Sustainable Development in Promotion of a World Viewed as Having Common Destinies

The concept of sustainable development has now largely been accepted to encompass the imperative need to concurrently take along economic, social and environmental considerations in human endeavour. In this paradigm, many global level initiatives have propounded international level policies and actions on this. The paradigm of common destinies of human society is captured in other global level action plans principally Agenda 21 emanating from the 1992 Earth Summit at Rio de Janeiro, the ensuing Millennium Development Goals (MDGs) and the recently adopted Sustainable Development Goals (SDGs) (United Nations General Assembly, 2015). These and other processes have placed the sustainable development paradigm firmly on the agenda bulwarked by such events as the 2008 collapse of the global financial systems.

Despite this recognition, there still remains the view that doing economics is only possible if couched and manoeuvred within the tenets of the capitalist economic model and systems in existence for the last 300 years and more. Lessem and Schieffer (2010a; 2010b), Schieffer and Lessem (2014**)** suggest that a fixation in formal government and business circles is that there can be no other model that works than the capitalist system as developed from a western worldview and built on the levels of quantifiable finance capital that reside in a given society or nation. The only other is communism which they suggest has equally not worked for several reasons. These include that the concept is based on the same principles dependent on monetary finance capital with the major difference being the control and deployment of this capital by the state for the benefit of society.

Sustainable Development in a World of Plurality of Assets and Capital

The monolithic and monocultural nature of the western economic system of thought is often seen as sacrosanct and inviolate. It revolves around money and finance capital. Yet the world is made up of many peoples and cultures with a wide variety of institutional arrangements that run alternative economic systems. It is a truism that all human communities design their practical economic systems to satisfy their needs. Different systems have developed and often have remained in place. Many times, it is in a dormant state only to re-surface when there are stresses and upheavals and communities are deprived of goods and services rendered into their system by the western type market economy. It is here that immanent wealth is expressed. That wealth goes very significantly beyond finance capital. It is on this basis that many analysts have accepted that the time has arrived to think much more than just finance capital. Lessem and Schieffer (2010a:299) summarise five capitals that contribute to a more holistic perspective of wealth:

1. Human capital: Human capital means people: the sum of our individual minds, bodies, spirit, soul, dreams, visions, knowledge, experience, skills and competencies.
2. Social capital: Social capital refers to the strength of our relationships.
3. Natural capital: Natural capital includes the free gifts from nature.
4. Built capital: built capital includes all things that have been made or manufactured with both human and natural capital, including equipment, factories, tools, buildings.
5. Financial capital: Financial capital is essentially money or anything denominated in monetary terms including cash, savings and investments

Adding these other forms of capital calls for a vast change and transformation in conceptualising development, economics and related matters. Further, Lessem and Schieffer (2010b) summarise several alternative approaches to conceptualising economics reflecting post-modernist, post-industrial and post-colonial vantage points. The array of alternative thinking is vast portraying a world seeking a shift in conceptualising the best way forward to promote human welfare based on diversity and plurality of thought and action. Transformation and complexity lie at the core of most of these.

Different Views on Economics

One view presents economics as economic commons with emphasis on the need for co-production of means of livelihoods. Livelihoods are not delivered to people because human social production is prevalent in all societies. Within the African context, a way of envisaging economics is to create African Economic Humanism (Lessem and Schieffer, 2010b). Grassroots economics is also posited as another approach which seeks the liberation of communities from the coercive and socially and culturally deleterious global forces of international capital. It suggests rethinking the world from a pluriverse and not Universalist monolithic stance. The world is made up of plural communities, peoples and cultures whose visions of improving their livelihoods must be rooted in and connected to their local and other resources. An ethos of earth democracy within this paradigm promotes the notion of equity in that all humans need to each access equally the whole earth's resources paying attention to nature's economy and the needs of human sustenance. Economies are meant to be people-centred, decentralised, sustainable and livelihood-generating and not purely profit generating.

Then there are subsistence economies which seek, for all humanity, in the developing and the developed world, sufficiency within the capacities of natural ecological systems. The physical earth cannot afford unlimited growth to meet unlimited needs as this can only deprive some while satisfying others. Human society must live within the means of the earth to provide for sustained flows of resources. Some perspectives see the promotion of the economics of self-sufficiency in creating social businesses. This outlook views economics from the viewpoint that capital is not about money but about mutual assistance between people. It is best exemplified by experiences of setting up the Grammen Bank in Bangladesh. Social capital that includes social networks and socialised means of promoting businesses for ordinary people is what is needed. Money is but a tool to help even the poorest in society and not just the rich who can access bank finance.

Lessem and Schieffer (2010b) then further describe co-evolutionary economics which sees the world needing re-culturalisation toward diversity in society and in nature and the co-evolution of all related economic and ecological systems and subsystems and their inter-linkages. Harmonising these social and ecological processes is essential as plurality is managed toward sustainability which takes advantage of the diversity of knowing, valuing, organising and doing things. Society, in this model, would be able to transform its image of how it develops. There is greater tolerance of diversity and acceptance of differential means among people as well as changes in the social and ecological systems.

Associative economic perspectives posit that capital grows within the ambit of intergenerational social growth with each generation contributing to this growth. Within each generation, all people contribute to the growth of capital. Hence, goods and services should be produced to serve the common good and not to enrich the few people. Mutual interests are served and differentiation is sought within the cultural and not economic realm. Lessem & Schieffer (2010b) summarise several other perspectives which ingrain many of the above and other factors: economics of the common good; social learning and the network economy; open economics; the cooperative enterprise; new economics; real economics; and well-being economics. They then define the ingredients for an integral economics which integrates the various components of their four-world model.

Integral Development and an Integral Economy

Schieffer and Lessem (2014) have integrated the ideas from various sources into an integral development approach they term 'Integral Worlds'. In this model, they strongly advocate an integral research approach that includes all dimensions of human systems that develop self, the community one lives in and society. They advocate that all human systems share four core dimensions:

- nature and community (generally expressed in societies of the South – especially Africa);
- culture and spirituality (manifest significantly in the East – Asia and the Pacific);
- science, systems and technology (most expressive in the North largely Europe); and
- enterprise and economy (best expressed in the West – particularly North America).

In creating an integral green economy, it is essential that any society makes its entry point the prevailing views and ethos on how nature works and community organises itself. Each society has its own wisdom and capability imbedded in its nature and community systems. The society seeks its renewal and growth supported by science and technology and then expressing itself in its enterprise and economy. When this pathway is followed, the society is a whole and integral one, with holistic approaches to its problems. Current predominant practices impose monocultural economist and exclusionary enterprises that alienate people

from cultural rootedness and community groundedness. It is on the back of such diverse perspectives and visions as espoused by Lessem and Schieffer (2010b) and many other proponents of development thought that sustainable development seeks to build.

Visions and Need for Action: Ideas Must Serve Interests of the People

These outlooks have shaped the thinking on the evolving paradigm of sustainable development. Agenda63 does this for Africa in calling for an endogenous plan of transformation. It is the organising concept that most have taken on board to create visionary means of tackling the issues that most nations and societies face. Visionary it has to be because the problems of lack of basic needs in most African societies are complex and deep. In calling for a new sustainable development paradigm and better addressing the issues of improving human welfare, the reason for engaging in this kind of work, Schuftan (2003:73) suggests a process that:

> ...has to marry the visionary with the practical, and the vision must suggest a route for effective action.... We need to become experimenters, risk takers, innovators, intensifiers, diversifiers, pioneers, addicts of new information, and practitioners of committed common sense. The challenge is to get away from the circularity in current western development thinking; to see not only what is wrong, but also what there is to build on. We cannot merely denounce—we must also announce.

Visions that are rooted in the practical issues and needs of people, ordinary people at that, inform the emerging paradigm. By ordinary people, reference is made to everyday people who comprise the communities that make up the nation states and societies in Africa, regular common people who occupy the urban and rural spaces within which they seek the wherewithal of meeting their daily needs. Development agents are expected to seek to become experimenters, risk takers, innovators and the practitioners of committed common sense referred to above. A development paradigm that sees people behind every decision and policy is needed. Indeed, United Nations SDGs do this placing of people as the primary reason for development (United Nations General Assembly, 2015). This is a major task economic theory and action has been contrary to this. Practice has often not recognised that it is common sense that determines survival techniques, strategies and actions. Common sense suggests

that there are things that any and all communities and societies should know how to do and not leave to others. Common sense also suggests that each community will seek to know itself, how it organises its resources as well as putting in place institutional arrangements and processes to relate to these resources, their distribution among its members and their ability to sustainably provide for the needs of its people. Common sense also tells us that people will develop practical knowledge on the resource base which sustains their livelihoods. Taking this approach to the issue of sustainable development suggests that the process of seeking development is multifaceted and resides within people. A new direction toward this is sought. However, as noted by Nnaemeka (2009:47):

> Be that as it may, the development project has not failed in Africa. In fact, it just never started in the first place, because of hostile political conditions. It can start and it can succeed. What is required is an entirely new paradigm with new strategy or model that connects with the people's democratic aspirations and social needs - a paradigm whose strategy makes the African people the agents, means and the end of the development taking place in their domain and which can co-opt the essential and tested elements of other conventional paradigms.

Before further examining this approach, it is essential to summarise how sustainable development might be conceptually summarised and contextualised.

Sustainable Development: Defining Contexts for Action.

Complexities and contexts that promote essential social-ecological linkages in sustainable development are noted as being an important global issue that must be understood from a social science perspective (ISSC/UNESCO 2013). Complexity and contexts have been advanced within social-ecological analyses. Its importance is that humans, humanity, the human condition and human systems are now firmly recognised as integral and crucial aspects of issues surrounding sustainable development. Surprising as this may be, this is indeed a most welcome development in that the linear reasoning associated with doing natural sciences, defining problems and seeking solutions from a uni-linear and reductionist perspective has obviously proved partial in understanding the interfaces between biophysical and development environments Linear thinking has hitherto dominated as development economics were posited as taking no other form than western thinking (Lessem and Schieffer, 2010a). This ignores the

different contexts within which different societies seek to grow and sustain themselves. Conceptual frameworks that encompass different contexts and pay attention to inevitable complexity in and among various societies are needed. Such a framework is what is posited next.

A Heuristic for Conceptualizing and Contextualising Sustainable Development

In order that appropriate issues are addressed in promoting sustainable development in different situations, the following heuristic is proposed:

SD = f(R, Ex, En, Po, PE, Sp) where:

SD = sustainable development;

R = the biophysical, social and economic resources in any society e.g. financial bases, economic goods, water, land, including its quality and ability to provide a viable base for society's survival and growth, other natural resources, in essence abiotic, biotic and cultural resources;

En = Endogenous factors including socio-cultural facets and attributes including the social order, social organization, views on ethics and morality, conflict management, humanity, meanings of things, concepts of causes and effects, creating and managing knowledge systems, articulated inherent philosophies and ideologies, indigenous and local production systems and technologies;

Ex = Exogenous factors such as external influences on resources and their management, including global or regional circulatory systems, climate change and variability, intergovernmental or governmental instruments, technologies, foreign philosophies and ideologies on how the society or community develops;

Po = Population factors including quantitative and qualitative changes, intergenerational compacts, needs and priorities including changing consumption patterns, levels of formal literacy, lifelong learning circumstances and opportunities;

PE = Political and economic factors such as state and governance structures, private actors, institutional arrangements and their interfaces with policies and various power bases, state of and propensity to war or peace, equity and inequity, ownership and control of means of production, basic freedoms, forms of democracy, social and political histories; and

Sp = the spatial dimension including the local, sub-national, national, supra-national, regional, global levels.

Originally suggested as a basic tool in speaking to issues of sustainability in rural development in African contexts (Matowanyika, 1991), this revised heuristic is posited as a schema to organise thoughts and ideas in placing sustainable development in complex contexts and spaces. It promotes the idea that sustainable development remains a fluid concept which, because of the complexity inherent in it and its intricately linked elements, it will always take different forms over time. Complexity is key. So is the dynamic interdependence of the many factors and elements that must be accounted for or put to use in promoting sustainability. Subsequently, sustainable development by its nature panders to spatial and temporal complexity and interdependences. The schema is simply meant to probe for each society what at any given time are the opportunities for promoting sustainability and what are the potential impediments that must be removed. As a heuristic, it seeks to prod thinking and reflection that must consciously take place in order to address the needed action for each situation. It is developed within the mould of human/social-ecological analysis which notes complex inter-linkages. But, as in most issues in development discourse, it is always necessary to still simplify the issues.

Merit in Simplification: With a Caveat

The simplification of the various factors and elements that comprise sustainable development must also be understood. The presentation of complex systems in simple terms and plain form allows a human scale of comprehension. This is helpful in developing actionable efforts to deal with those elements that are humanly understood and understandable. Simplification should be seen for what it can offer in problem solutions. It allows for the conceptualisation of potential solutions suggested by observed, observable and tangible facts, experiences, trends and events. It assists in gleaning what is practical. Practicality further allows for innovative action as already noted above in Schuftan (2003).

Practicality time and again calls for action and for what is achievable and measurable. In the context of visioning what a sustainable society can be, practicality that emanates from simplification allows various actors to create and use indicators of how and whether a specific society, community or country is indeed moving toward a mode of sustainable development. In this manner, sustainability indicators have been used. An example is that of footprint analysis as suggested by Elliot (2012). Indicators are fashioned to bring complexity to a comprehensible human scale. However, a caveat must be made. Simplification does not rid society of complexity and innumerable contextual issues. A case in point is that of simplifying worldviews in terms of western and non-western forms. There is a dominant binary thinking immanent in the western versus indigenous/non-western frame of analysis. In the last several centuries, western worldviews have sought to promote universalistic, aggregative cosmopolitan and reductionist reasoning in doing science. Complex interactions and relationships in entities are reduced to the sum of their constituent parts so as to make them easier to study. In this dominant perspective, all things must be reduced to their simplest form. Fraught with major problems in the natural sciences, this is a major minefield in the social and human sciences when seeking to understand human interactions, human interrelationships and human-nature linkages. Hence, in trying to understand African society, and manifestly to take control over its peoples and resources in the 19th Century, Europe found it prudent to use methods of understanding humanity from an over simplistic posture.

The parameters for understanding Africa were European and reflective of human conditions in Europe. Reductionist reasoning and methods of enquiry led to the oversimplification of African peoples and the institutional arrangements around which their world rotated. Hence it was expedient to simply state that Africa was primitive and socially undeveloped. But then Europe had no other purpose than to plunder and extract resources for the growth of its industries and the capitalist profit motive. All else was subjugated to this one enterprise. Even the spiritual hegemony foisted on the people in the name of Christianity and missionary visions of getting the African out of ignorance was simply a tool toward that incentive. It has now dawned on most people over the last few decades that cultural resources, including knowledge systems used by indigenous peoples are complex and cannot be understood purely from the standpoint of western reductionist scientific methods (Odora-Hoppers 2006). All societies have their ways of knowing and organising their knowledge. Indeed, the march of African societies toward their own prosperity using their own forms of knowledge and intellectual resources was seriously compromised by the

hegemonic, deleterious and violent destruction of these systems (Mawere and Awuah-Nyamekye, 2015).

All was done in the name of the capitalist enterprise. Capitalism contrived this simplification as most things have been viewed simply as befitting analysis from the profit motive as defined in the capitalist mode. Whatever is viewed as being detrimental to this is labeled worthless. Indeed, the conceptualisation of resources is from this standpoint. Whatever is viewed as being of no value to humans is described as neutral stuff of no worth. African knowledge systems have this far been treated in this manner. It is only in the last few decades that international capital has seen the value in IKS especially in the areas of pharmaceuticals for extractive purposes. This is now a major area of concern for the exploitative nature that indigenous people and their knowledge of local biotic, abiotic resources and environs are viewed as of value to large transnational corporations. Nonetheless, simplification only suffices to enable a human scale of understanding of complex human-human and human-nature relationships. Multiple scale dimensions are also essential.

Multiple Scale Dimensions

The schema proposed above also allows for analysis at multiple scales, paying attention to multiple actors and multivariate factors that can affect any society at any point in time or over periods of time. It, therefore, allows consideration to be made of factors that can affect the welfare of any society (whether within a country, at country level or above). The heuristic also assumes that sustainable development is a target-oriented process. However, targets move in response to a number of stimuli, positive and negative. This introduces a phenomenon of elusiveness because sustainability is conceptualised within the context of three pillars: social, economic and environmental. By definition, these factors express themselves within geographic spaces. The social is expressed within national and sub-national spaces and also encompasses many facets such as the cultural. Environmental issues do range from the very limited physical scope of a local biotic, abiotic or human community to global circulation systems such as elicited by climatic change concerns. Likewise, the economic subject matter ranges from the individual village or business firm to the global capitalist system including the movement of goods, services and finance. Things become complex. Yet complexity by itself cannot and should not deter us from addressing the realities we face in production and consumption systems that do not meet current basic needs, and which are deleterious to human health and too often a threat to the productive process. As well, human needs are defined from the perspective of

different groups and communities in the human race. This inevitably complicates issues as there are very different views of what is essential for people's livelihoods in different parts of the world and at different times. The spatial differences of very diverse needs and wants thus traverse multiple geographical spaces that span local to community to sub-national, national and supra-national and global spaces. This adds on temporal dimensions.

Temporal Dimensions

Dynamism and vibrancy imply fast-changing situations. Political turmoil and upheaval abound globally even and especially in countries as large as the USA where political parties replace each other with a potential of policy changes that affect many other nations. The Russian Federation is in an unstable condition due to economic sanctions resulting from its decision to annex Crimea and get involved in the Ukraine. Further, there is turmoil emanating from wars of various kinds ranging from drug wars, resource wars, political insurgency and those built on ideological principles and hegemonic influence. The Middle East is in turbulence and will likely be so for extended periods. There are wars in countries as varied in political persuasions as France and Western Europe (the war on terrorism and migration); USA and wars on drug trafficking; wars for natural resources in the Democratic Republic of Congo; wars on a religious basis including fundamentalism in the Middle East and North Africa and several other low-level but enduring conflicts. Each exerts pressures on these and other countries. The results of war are felt for several generations, resulting in long term instability. Progress for *homo sapiens* has been built on war, so has research and statecraft. The best technologies emanate from warfare, creating a paradox: is it essential for social and political upheaval to take place in order to create conditions that may promote sustainable societies? If this is so, then the concept of sustainable development and sustainable society will remain elusive and an enigma. In addressing the puzzles posed by the above, multiple discourses have taken root.

Multiple Discourses

As already illustrated above, the schema posited in this chapter necessarily promotes a multiplicity of discourses on sustainable development. Such multiplicity infers interdisciplinary examination of linkages, causes and effects. Hence enquiry should lead to multiple and varied outcomes. What is sought as sustainability in one situation may not be what is viewed as needed or possible in other cases. The world is socially and biophysically extremely complex. Seeking

sustainability must have roots founded on this premise of complexity. Because this is so, sustainable development must be promoted with multiple voices for its expression, a theme extensively researched into by Lessem and Schieffer (2009, 2010a, 2010b) among others. The sustainable development heuristic being offered in this chapter is by no means complete. It summarises some of the major issues addressed in the sustainable development debates. Illustrations of how it might be used are given next with respect to land issues.

Land for Promoting Sustainable Development in an African Context

Land at the Heart of Society in Africa

Land is a sensitive issue globally. In most African countries, it is a difficult and intractable reality that must be confronted with boldness if sustainable development is to be promoted to positive and full effect. In seeking to link land to sustainable development issues in Southern Africa, Matowanyika and Marongwe (1998:7) note that land is a multifaceted concept to be viewed as:

> ..soil; as a storehouse, especially as the upper part of the earth's crust, a physical medium presenting capabilities to accommodate human activity; as spaces and places for human activity but also the arena for ecosystem processes; as a commodity: a good and real estate whose worth is measured in monetary terms; an asset whose value to humans is determined by such factors as its structure, topography... its aesthetic qualities, productivity, location accessibility;..... a repository of resources for humans; a finite resource ..... and hence of immense importance to human activity and relationships in the distribution of its worth.

Land is thus presented as a status symbol of social and political influence. It is an important medium of social relations and expression of influence and power. It is vital to keep the integrity of essential ecosystems in place. Its biophysical attributes are essential for several reasons including its basic contribution to biophysical integrity and the health of the continent's production base including its food security. But perhaps its continued integrity can be promoted if it is properly-understood as a social medium since it is this dimension that exhibits human nature. With reference to Africa, Shipton (1994:348) notes:

> Nothing evokes more varied symbolic connotations or more intricate legal philosophies. Nothing excites deeper passions or gives rise to more bloodshed than do disagreements about territory, boundaries, or access to land resources. Nor is anything more likely to prevent misunderstandings across cultures, harmful to both humans and their habitat, than are thoughtful definitions of landholding in the first place...land produces nothing without water, labour, capital, or all three. .... people seek in land not just material satisfaction but also power, wealth, and meaning-their aims, that is, can be political, economic, and cultural. ...people relate to land not just as individuals, but also as members of groups, networks, and categories. In just about any inhabited part of Africa, one finds multiple ways of getting access to land and justifying claims to it. Some of these are birthright, first settlement, conquest, residence, cultivation, habitual grazing visitation, manuring, tree planting, spiritual sanction, bureaucratic allocation, loan, rental, and cash purchase.

Land, in most African countries, is an extremely emotive affair with deep consequences for the welfare of its peoples. It is at the heart of social relations, a point which may not be so obvious to the average resident in Europe or America. Everyday requirements such as food and residence are met from the market and formal employment. One's relative position with respect to the quality of these necessities is determined by one's socio-economic position to earn a monetary wage. Land as an intermediary of social relations and survival tool kit takes on very different dimensions from that in Africa. In African contexts, land is not reducible to mere monetary value. Indeed, it can be asserted that land is a paradox in that the poorest person and the financially richest person both need land, the former for absolute and basic survival to produce food and provide shelter, necessities that are not guaranteed by the formal economy, and the latter for reasons of power, status and as a depository of financial capital value as real estate. Addressing this paradox is an important sustainable development matter. Failure to resolve it is also a destabilising proposition.

Inequity and Inherently Unstable Land and Sustainable Development Situations

Land is also an intergenerational equity issue. Namibia is a case in point. There youths have taken up the issue of land as requiring urgent attention. Namibia is noted as the fifth most unequal nation in the world (Ankoma 2015). Out of a population of 2.2 million, a land area of 825418 km^2, making Namibia the 34th largest country in land surface area in the world and 2nd most sparsely populated country after Mongolia, 90% of land is in the hands of 4000 farmers of white European extraction. A group of young Black people have now organised themselves and threaten to occupy land if government does not meet the requirements of some 50000+ young people for land to construct houses. The land issue is built on a history of colonisation and imperial control by western nations. It is highly commoditised and protected by entrenched constitutional provisions. It is likely to be the most destabilising factor to the long term political and economic progress of the country if not addressed. Progress to sustainable development is thus compromised. Likewise, the pattern of ownership and control over land in South Africa has remained heavily skewed in favour of the white farmers who control 79% of the land and constitute 9% of the population. The country's economy is 97% controlled by the white population with only 3% in the hands of the black majority (Commey 2015). He suggests that the patterns of land ownership will:

> ...continue to poison South Africa's slow transition. The history of apartheid has meant that 80% majority black population have been boxed into the role of serfs in a non-feudal system. Inter-generationally this has been a major cause of poverty as they have no access to leverage for capital or for other purposes (Commey, 2015:23).

Inequality is etched into the future of the country detracting significantly from efforts at building a sustainable society. State-forced movements of people during the apartheid era compounded the problems. That period's social and political engineering actions have left enduring long term impacts on communities moved from their traditional home areas, a situation that exists in Namibia, Zimbabwe and other countries. The history of forced movements of communities over the last century has left these communities in perpetual poverty and suffering a loss of intimate knowledge of the resource base. Africa has experienced massive population movements resulting from land alienation

for white European settlement. In addition, the frequent movement of many small communities for various reasons, such as wars, exacerbates situations.

In Kenya, the creation of the White Highlands in major land grabs in the late 19thcentury left scars which remain deeply etched into the Kenyan landscape to this day and into the future (Kabukuru, 2015). The British set up a white settler community in Kenya bulwarked by an arsenal of legal instruments based on colonial interests. Vast areas of land were taken up and indigenous African people driven away from the land, often violently. Legal battles were lost by indigenous groups to a foreign legal system. Between 1945 and 1958, a Kikuyu dominated Land Freedom Army, popularly known as Mau Mau, sought to regain their land from British settlers. Brutal force ensued to subdue the indigenous people who rebelled and fought back leading to independence in 1963. The land issue remains a major one in Kenya and is increasing as a result of increased population pressure (Maparura, 2015). Similar situations obtain in Sudan, Somalia, Chad, Central African Republic and many others countries in Africa, besides.

Sources of Tensions in the Land-Sustainable Development Nexus

Tensions exist between tenure arrangements, especially between private property and customary approaches to ownership. Matowanyika and Marongwe (1998) summarise many other land-related issues as follows:

- Fragmented discourses and policy approaches over land. The land-development interface, though patently clear, is not properly articulated in policy;
- Incentives to encourage redistributive processes are not clear. The profit motive overrides all other considerations. In this regard land holds primacy of place for those who control it.
- Gross inequities exist and keep being reinforced even where reforms are taking place. Of especial note are gender disparities.
- Population pressures on land reform are growing, often times as a result of other large land consuming programmes displacing people;
- Land-based conflicts are multiplying;
- Technocentric approaches override the importance of the social intermediary role of land;
- Multiple tenure arrangements which in themselves may not be the problem but because the genesis of the many-sided arrangements is not

> understood. Hence, the cultural nuances of the land issue are not properly handled (Matowanyika and Marongwe, 1998:5)

Destabilising trends continue as noted by Moyo (2008). Market approaches to settling the land questions in various countries in the region are being popularised as state-led reforms recede in importance. In the process, the states have to increase their indebtedness in order to pay for land, thereby willy-nilly increasing instability in their fiscal conditions. States are less able to tackle many other social and economic issues so as to meet the needs of acquiring land. When the state cannot meet these needs, ordinary rural populations agitate for support to meet these needs. Communities are increasingly taking issues into their own hands to enable themselves to meet their daily needs. Instabilities of various forms are fomented as a result. National and regional sustainability is threatened. Land-based economies such as those that typify almost all of Africa have to treat the land issue as perhaps the most enduring sustainability issue.

Major Land Use Demands and Conflicting Interests

Major projects in Southern Africa have set up major conservation areas across national boundaries such as the Great Limpopo Transfrontier Conservation Area in an area that is 35 million square kilometres straddling Zimbabwe, Mozambique and South Africa. Another such area is the large Kavango-Zambezi Transfrontier Conservation area that straddles the borders of Namibia, Zambia, Zimbabwe and Angola. This has had major implications for people movements. It covers an area some 522 000 km^2 comprising 36 national parks, game reserves, community conservancies and game management areas. It is, however, home to more than 2 million people. The question is whether or not such a huge tract of land can sustainably stay as wildlife conservation areas. It could possibly, at some stage, give in to other economic use of the land needed by the 2 million people. Whereas this kind of land -based project serves one kind of environment and development set of issues, wildlife conservation, by its very nature creates instabilities by removing people from land they need. Are the revenues from these conservation areas moving toward being able to sustainably support the people in these countries or are they going to profit-seeking international capital? The social relations between people and between the land and people mentioned above are significantly frayed. For communities, stability in the form of life assets on which people can depend throughout their life cycles is not guaranteed. The contexts of multiple and complex problems are created. Unsustainability is the result.

In addition major movements of people arise when major projects are implemented. The case of dam construction in Southern Africa is one. There have been major population movements in constructing the Kariba Dam in Zimbabwe, Cahora Bassa dam in Mozambique and the Lesotho Highlands Water project. These have resulted in much instability and uncertainty. Kariba dam was constructed in the 1950s. The Tonga people who were displaced by the project remain in poverty today (Magadza 2006). This phenomenon needs proper understanding as it obviously leads to unsustainable livelihoods as land grabs raise crucial issues of small scale versus large scale land uses. Major land acquisitions on behalf of international finance capital are taking place in several countries. Current major and large 'land grabs' are taking place in many countries such as Mozambique, Tanzania, Namibia, South Africa and others. The philosophical positions underpinning such programmes as transfrontier or transboundary protected areas such as the massive Great Limpopo Transfrontier Peace Park mentioned above need to interrogate the sustainability issues raised in this chapter. These issues illustrate the inherent conflicting interests at inter-scalar levels.

Other dimensions of large land grabs have also arisen. The bio-fuels policy, part of the transport decarbonisation programme in Europe's carbon emission effort, requires that crops be grown for this. The European Union is seeking to promote less air pollution in their cities by regulating the use fossil fuels and hydrocarbons and promoting the increased use of bio-fuels. As part of its programmes, Europe is financing the opening up of massive land areas in what are seen as unoccupied land in African countries such as Ghana, Mozambique, Tanzania and several other countries to introduce monoculture jatropha or sugar cane projects to produce bio-fuels. This one act alone creates several problems for local communities in African countries with stakes in those lands. Major monoculture environments are created instigating long term biophysical instability in these countries. Instability in the land relationships increases or is born. The vulnerable in these countries, particularly women, are significantly disadvantaged as the land which is often part of their social security system, especially in times of unemployment or retirement, is removed from their livelihood options. Above all, the carbon credits that are incurred by opening up land for these bio-fuels may not be paid back in long periods. Some may take more than 400 years (Inman 2000). This creates inter-scalar and intergenerational contradictions in promoting sustainability. The reduction of fossil fuels in Europe may increase in the short term but at the expense of long term atmospheric instability in global circulatory systems. These are

contradictions that point to the complexities of the issues in promoting sustainable development. Other major land grabs have seen massive amounts of land being set aside to produce food crops. In Mozambique, a 35-million-hectare project has been proposed to produce soya bean in a joint project involving Mozambique, Brazil and Japan. The food requirements of Japan will be met with this kind of project at the expense of long-term food security of local populations in Mozambique. In any case, the cultural value attached to land and the dignity of people providing themselves with food are compromised. The seeds for major instability have been sown.

Paradoxes of Land Reforms Leading to Instability: Case of Zimbabwe

Different forms of instability set in when countries have sought to resolve especially the skewed distribution of land. Zimbabwe is a case in point. From the late 19th century the land issue took on heightened tension as a result of European settlerism. Armed and political struggles against the white settlers were fought relentlessly with different levels of intensity from the 1890s until the country attained political independence in 1980. Till then the Zimbabwean land question had been around the issues of dominant control by a very small minority whereby at independence 11million hactares out of 18 million hactares of farm land was under the control of less than 2% of the population (Makwavarara et al. 2013). The settler regimes up to 1980 tinkered around the redistribution of land but kept the pattern of heavily skewed land redistribution. The result was a dualised economy which saw some of the highest standards of living among a very small white minority which never exceeded more than 270 000 people in total. The inequities imposed on the indigenous peoples of Zimbabwe from the 19th century remained up till 1980. They created unsustainable conditions that were soon fearlessly challenged by the indigenous population from the outset.

Some significant resettlement took place between 1980 and 2000 when the government accelerated redistribution under the fast track resettlement programme. Much progress was made from 2000 under a persistent and robust land acquisition and redistribution process that saw an extra 300 000 families resettled on an extra 5million ha of land. A fairer distribution of the land resource was the result. The next thing was a massive response from the western world with economic sanctions that have seen the country being unable to fully function and grow its economy. The entrenched interests of erstwhile European settlers created a very unstable economy. In addition to the economic turmoil introduced by the Economic Structural Adjustment Programme (ESAP), political

uncertainties and instability have escalated since. Land reforms meant to promote sustainability by land redistribution, the major reason for the liberation struggle started in the 1890s, have resulted in social, economic and political instability. Within Zimbabwe, the land reforms could have promoted sustainable outcomes, but the international capitalist system did not approve of Zimbabwe's agrarian reform, leading to instability in the national context of Zimbabwe. This was reinforced by the fact during this period when Zimbabwe was fundamentally changing its social and economic fundamentals and institutional arrangements in its agrarian reforms, albeit temporarily slowed down during the ESAP period of the 1990s, it also engaged in military assistance to the Democratic Republic of Congo, a member of the Southern African Development Community against insurgency in its country. Zimbabwe succeeded in assisting to stop the rebellion in the DRC (Chung, 2015). This brought further reaction from western countries which had provided much aid to Zimbabwe since its independence in 1980. The Zimbabwe Democracy and Economic Recovery Act of 2001 which imposed heavy economic sanctions on Zimbabwe, was enacted by the USA. Adopted by most of the western world, it remains on American statute books and needs the American President and the USA Senate to revoke it. It calls for a return to the pre-2000 situation with respect to land distribution. Yet it is that skewed distribution of land that the fast track land reform sought to reverse toward a more equitable dispensation. This contradiction has directly contributed to economic and political instability in Zimbabwe and also created an unsustainable situation.

The dynamics of sustainable development in Zimbabwe are that a force that could have led to sustainability has created a situation where other interests have foisted an unsustainable outcome. A history built on brute force that led to an untenable and hence unsustainable land distribution was being reversed, but the entrenched interests of a small population, constituting less than 2% of the entire population and supported by neo-liberal interests in the West, have triggered what appears at this juncture to retard progress toward a more sustainable Zimbabwe. For her survival, Zimbabwe now seeks new alternatives. At the macro-level, the country has succeeded in gaining a balance in terms of its trading partners with a vastly increased trade with the East, especially China. Its people must now look into self-reliance for the development of the economy. In the effort to delink the country from investors in the west, the country has created conditions whereby people have to depend much more on the country's land resource base. The need for significant and radical land redistribution has been re-invented as people's livelihoods deteriorate. More people need land

because the economy is not performing and cannot deliver people's needs. Economic sanctions are reinforcing the need for further land redistribution. Therein lies seed for further instability.

The heavy-handed response to Zimbabwe's agrarian reforms has renewed interest within Zimbabwe of creating a self-sufficient economy. When people are pushed to starvation, they resort to alternatives that make society move forward. Zimbabwe may have started on a pathway that will lead to a much more sustainable future. Accordingly, in explaining the objective of their study, Mamukwa et al. (2014) assert that their intention is to:

> ...is to explore the options available to us as Zimbabweans to help the Zimbabwean Phoenix to rise from the ashes. The ultimate message we seek to put across is that our fate as Zimbabweans is in our hands. We can be authors of the remedies to heal our land and bring smiles to our people. We can bring back days of plenty, using the basic gifts given to us by our creator, such as nature, spirituality, rhythm, *ubuntu/unhu*, and the spirit of pulling together as a people. The message is that we must go back to our traditional origins and re-visit our age-old values – 'I am because we are'. First, we must re-establish our roots and identity, become comfortable in our own skin as Africans and as Zimbabweans. Once we remember who we really are in our indigenous context ...we will realise that we have the power to make a difference. Our added strength will come from a combination of the indigenous and the exogenous, giving us the advantage of the best of both worlds.

The outcome of Zimbabwean agrarian reforms has potentially created the basis for a sustainable future for the country. The opportunity exists to get the right mix of the factors that can promote sustainability. However, as land-related matters remain unresolved in most parts of Africa with issues ranging from uncertain and insecure tenure arrangements all the way to access to this resource base, instability remains. The omnibus effect of land dictates that it must be at the centre of any useful development policy and practice. The multiple functions that land plays are crucial in promoting sustainable development (Lahiff 2003; Matowanyika and Marongwe 1998; Shipton 1994).

In Southern Africa, sustainable development strategies in the region will not move forward very much without tackling the land issues. Land is a regional

problem that manifests itself differentially (Matowanyika 1999). There is indeed reason to suggest that the SADC region needs to address the matter as a regional matter, despite the different national jurisdictions, legal realities and histories. When water is added to the inequities in the land redistribution process, it compounds the need for such a regional approach. The multiple nature of the land issue suggests that seeking common approaches at the SADC level may be progressive. The attention given to land and its interface with sustainability issues is also needed in several other issues. Hence, we can give the kind of treatment given above to several other potential entry points into promoting sustainability in society. The land issue demands that Africa seriously addresses the matter of resource nationalism within national and international contexts. This is linked to sovereignty matters and nudging countries within Africa to address the land resource base from a point of strength. It also calls for addressing matters of subsidiarity: the appropriate level of decision-making with respect to managing resources and the governance around these must reside within appropriate jurisdictions. Dominance leads to oppression which festers into unsustainable behaviours and reactions. This is an important issue within the context of getting both nations and communities to learn and understand these contexts.

Some Concluding Remarks

Transformation is Vital

The transformation paradigm will help to define the direction that sustainable development must take. The concept of sustainable development itself has within it an inherent transformative agenda. In global terms, there is heightened awareness of the need to address the issues of poverty and consequential problems (United Nations General Assembly 2015). There is a need to articulate how transformation should work, and what should go into it (Lessem and Schieffer 2009; World Social Science Report 2103). The many dimensions for comprehending the complex and intricate social-ecological linkages needed in promoting sustainable development must be understood. The heuristic proposed in this article suggests a basis for this.

Africa Cannot Run Away from Its Shadows: This Promotes Instability and Unsustainable Outcomes

Stopping from running away from its shadows - a liberation ethos from the debilitating but fatal process of forgetting its past is existential for Africa. The essence of forgetfulness is that people can be reminded. The real issue is when reminded, does Africa respond appropriately to the realities of what existed prior

to the period of removal from its roots. There is a growing and increasingly vocal realisation that indigenous roots are essential is a world where many things are being seriously questioned. The tottering of the process of state formation and consolidation of state institutions, a process which has proved a major stumbling block against the sustainability of African society, has prompted a call to a better understanding of African systems of thought and action. After all, with fatigue setting in from donors and others form the west, this is only practical. Furthermore, the questions must be asked: When social disorder sets in as a result of natural or socio-political factors especially conflict, what is it that ordinary people who cannot fly out of Africa or seek to cross the Mediterranean Sea as migrants into Europe depend on? When the land reform process in Zimbabwe led to near starvation as the country was placed under sanctions from the west, what did the local people do? Evidence from various parts of Zimbabwe shows how, in addition to aid from government, local communities in various parts of the country resorted to the strength in a number of their traditional structures, to re-introduce in their cropping and food systems traditional foods (Mamukwa et.al. 2014).

Sustainable Development within Africa Calls for African Agency

Sustainable development solutions will by definition lead to unsustainable outcomes if they are imposed. African agency is paramount. African intellectual capital and other resources are demanded. Extroversion of the process implies a betrayal of what it essential to promote the future of the continent (Hountondji 1997). The schema proposed at the start of this chapter requires that matters be conceptualised within the African context. African agency demands that the multi-dimensional complexity and proper understanding of the contexts be undertaken by African peoples in the first instances. The interface with the global systems will lead to sustainable futures only if this agency is applied to the task.

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CHAPTER 11: LINGUISTIC DIVERSITY AND SUSTAINABILITY: INDIGENOUS KNOWLEDGE INSIGHTS OF THE INDIGENOUS FOODS OF ZIMBABWE

Nomalanga Mpofu-Hamadziripi and Nhira Edgar Mberi

Abstract

The chapter provides an indigenous knowledge perspective of the indigenous foods consumed in Zimbabwe from the perspective of their nutritional and therapeutic values. Language is a carrier of a people's culture, worldview, beliefs and rituals. Part of a people's cultural consciousness is the food and drink that they consume. Zimbabwe is linguistically and culturally diverse and this diversity is realised in the foods of different linguistic groups. It is against this backdrop that the chapter provides insights of the indigenous foods consumed in Zimbabwe. The chapter argues that some diseases are a result of the western diet that most urban and rural households are consuming at the expense of indigenous foods believed to be more natural and consequently healthier than western foods. These ailments are referred to as lifestyle diseases. The chapter reveals that some indigenous foods are said to contain nutrients that cure ailments such as diabetes and hypertension now amongst the common killer diseases in both Western and African societies. The prevalence of these two diseases in Zimbabwe has reached alarming proportions given that they have become common in children to the extent that medical practitioners now advocate for indigenous and natural foods diets. The scientific method will, in future, be instrumental in validating indigenous knowledge assertions.

Introduction

This chapter is an investigation into the nutritional and medicinal values of indigenous foods from selected rural areas in Zimbabwe. Indigenous foods include uncultivated vegetables, horticultural vegetables, wild mushroom varieties, edible insects, wild fruits, small grains, seeds, roots and tubers. As observed by Dodman (2014:16), many "local languages contain numerous lexical distinctions concerning natural phenomena that are entirely absent in other, more widespread languages, thereby demonstrating a capacity of their speakers to know and act in harmony with the environment, its changes and evolution, something entirely lost by vast numbers of urban dwellers." It is in this context

that we examine the lexical distinctions presented by indigenous foods in rural Zimbabwe. From the examples, we give, it should be apparent that the same plant or vegetable may be referred to by different names in different areas depending on the variety of Shona spoken in that area. Such documentation of the indigenous knowledge systems embedded in the local languages is aimed at not just preserving this indigenous wealth of knowledge, but also to utilise it for the benefit of the communities from which this knowledge is derived. In this regard, each language community has its own unique contribution to the body of knowledge on the natural phenomena in a given locale. The idea, eventually, is to capture the indigenous knowledge systems pertaining to the preparation and consumption of indigenous foods from as many cultures of Zimbabwe as possible.

As observed by Miti (2014:22), African languages are in the main treated as being subordinate to ex-colonial languages such as English, French and Portuguese. This is despite the fact that they are reservoirs of vast amounts of indigenous knowledge which in most developing countries have not been researched or documented. In Zimbabwe, for example, English is dominant and is, therefore, used as the official language of the country while the indigenous languages continue to have a subordinate status. This is still the case despite the fact that the 2013 Constitution of Zimbabwe recognises sixteen (16) official languages. The other fifteen (15) languages have not yet been accorded the official status enshrined in the Constitution. This has led many African linguists to call for a greater role for African languages in the socio-economic development of African societies. Alexander (2003), Bambgose (1991), Batibo (2009), Prah (2009), Miti (2014), and Banda (2001) are some of the prominent African scholars who have called for an African-centred agenda for the intellectualisation of African languages.

It is hoped that some of the findings of this research will, at some point, be investigated, scientifically tested and eventually lead to the provision of indigenous remedies to ailments. This, therefore, is an effort to provide sustainable solutions to some of the health problems of developing countries. In Zimbabwe, as a case in point, an estimated eighty per cent of the population relies on traditional herbal therapies (Mposhi, Manyeruke and Hamauswa, 2013). The Cross-Cultural Foundation of Uganda estimates that more than 60 per cent of Uganda's population depends on traditional medicine because 'it is accessible, affordable and culturally familiar.' Kassaye, Amberbir, Getachew and Mussema (2006:127) report that in Ghana, Mali, Nigeria and Zambia, 60 per cent of the children with high fever resulting from malaria are treated with herbal medicines

at home. The World Health Organisation's 2001 report says that "traditional medicine has maintained its popularity in all regions of the developing worlds and its use is rapidly increasing in the industrialised countries."

Given the scenario described above, it is quite apparent that indigenous diet and nutrition play a significant role in most developing countries. This chapter argues that with more research and documentation, indigenous diet and nutrition can play an even bigger role than at present. In Zimbabwe, traditional remedies provide cheaper and more affordable options to most health care problems the country is facing. The economic meltdown in the last decade or so has made it difficult for the country to cope with its medical needs. Accordingly, in most rural communities, the treatment of ailments using traditional medicine has become the most preferred alternative. We argue, therefore, that there is a need to research and document these traditional remedies so that they can complement modern medical practices whose costs in Zimbabwe have become so prohibitive that the majority of the population cannot afford them. It is envisaged that this linguistic research will eventually be complemented by scientific research. This would make it possible to come up with remedies for some of the common ailments and reduce dependence on costly western medicine. Such remedies can become global brands and provide alternatives to those currently being provided to developing countries by the global north.

Motivation of the study

The motivation of this study emanates from recent approaches in development studies where greater emphasis is on culture as "a driver and enabler of sustainable development" (UNESCO, 2012:3). Many policy documents produced in the last two decades underscore the importance of culture in sustainable development. At the international level, the United Nations General Assembly's Millennium Development Goals in 2010 and the 2012 Culture and Development policy documents are very clear in terms of their vision of the role of culture in development. This study does not restate the nexus between culture and development. That has already been done in many documents from the last few decades, a few of which are cited herein. Our study aims at bringing to the fore more evidence to the fact that despite the advances made in modern technological development in the global village, vital indigenous knowledge systems in some parts of the world have largely been ignored. We agree with Dodman (2014:16) who argues that a lot of knowledge that is important to the 'maintenance of biodiversity is encoded in local indigenous languages.' Apart from facilitating the acquisition of a knowledge of the maintenance of

biodiversity, an examination of the local languages used in describing the properties of indigenous foods as well as their preparation can help extract the distilled wisdom developed over time. The experiences of past generations in the communities involved are likely to be useful. Traditional medicine has been relied upon by many generations in rural Zimbabwe from time immemorial. For this reason it would not be prudent to be dismissive of traditional medicine in the manner that missionaries and white settlers did. This is especially so given that tradititional medicine has its genesis in observation, the study of human phenomena and gradual development.

A study of the nutritional and medicinal values of these foods can bring about changes in the attitudes of the community towards these foods (their foods). Such a development would most likely lead to a change in the consumption patterns and lifestyles of many rural communities in Zimbabwe and many African countries. Cultural changes built on the indigenous knowledge systems of communities are key to sustainable development in rural communities, and this is especially so in the African context. A study of this nature is crucial in that it seeks to provide knowledge that could be useful in enhancing food security in rural communities. It also has a potential of improving the livelihoods of the local people. As Dodman (2014:16) rightly points out, 'modern science has recently become interested in natural remedies for many human diseases, yet it continues to ignore the way indigenous languages contain perceptions, ideas and solutions to problems that are the very essence of sustainability.' Indigenous knowledge systems emanate from the rich sources of indigenous cultures in Zimbabwe and Africa. In addition to that, there is language at the heart of every culture; hence the need to prioritise the revitalisation of African languages through research in order to ensure that culture drives sustainable development in African communities.

One needs to look at the manner in which *rooibos* tea is gaining popularity not just in South Africa but worldwide. *Rooibos* is a type of tea made from bushes mostly found in the Western Cape province of South Africa. In this province there is a mountainous area known as Cederberg where the bushes grow naturally. The medicinal value of this tea has long been established. Recent research shows that this tea has more health benefits than previously known, and is now considered more of a health supplement than a type of tea. Emphasis is placed on the fact that rooibos has a high level of antioxidants that have a lot of health benefits. The fact that it does not contain caffeine makes it possible for people to drink it without any risks of insomnia. It also contains minerals like manganese fluoride and calcium that make it good for the bones and teeth. The

story of *rooibos* is one of the many examples that show that indigenous knowledge has a potential of providing solutions to modern day problems. Mposhi, Manyeruke and Hamauswa (2013:236) argue that most major modern drugs including quinine, salicylic acid and *artemisinin* were discovered through traditional knowledge. *Artemisinin* is a product of Chinese indigenous medicine, derived from a plant called *qinghaosu* (Encyclopedia Britannica). *Artemisinin* is used in the treatment of malaria and cancer (Lai, 2005), hence the health benefits of *rooibos*.

The research on *rooibos* has resulted in it being aggressively marketed and it is gaining worldwide popularity. *Rooibos* is a good example of how an indigenous plant has been researched on and developed into a global brand. Such experiences where we tap the indigenous knowledge of the plant, and go on to research further on the curative purposes of the plant before actual utilisation, can empower rural communities in Africa. Mposhi, Manyeruke and Hamauswa (2013:236) argue that the "holders of traditional knowledge should share in the economic benefits derived from that knowledge." What stops other communities from making similar discoveries that are likely to change the livelihoods of the rural population in Zimbabwe and other developing countries? Such discoveries also have a potential to change the living standards of the rural population not just in monetary terms but also in terms of their health. An improvement in the eating habits would have a bearing on their health which in turn has implications on the nation's health bill.

The study also takes advantage of the emerging cultural and linguistic consciousness of the indigenous linguistic groups that havepreviously been largely marginalised in Zimbabwe. These include previously marginalised language groups generally referred to as 'minority languages'. Such languages have received very little attention in terms of development and use in the education system. Over the years, only Shona and Ndebele have received considerable attention. Not surprisingly, these two languages now have dictionaries, grammars, glossaries and scores of literary texts of various genres. Thus, Shona and Ndebele have for some time now been taught in the education system up to tertiary level. Emerging cultural and linguistic consciousness has resulted in so-called minority languages being introduced into the education system at primary and secondary school levels, and some even at tertiary level. Venda and Xitshangani/Tsonga are now degree subjects at the Great Zimbabwe University in Masvingo, whilst Tonga is being introduced at the University of Zimbabwe. These developments in higher education will hopefully impact on the

research and documentation of these languages, particularly from the indigenous knowledge perspective.

Brief historical background of traditional medicine in Zimbabwe

The moment one dialogues about traditional healers and traditional medicine it raises eyebrows in some sections of Zimbabwean society. For us to come to grips with some of these attitudes towards indigenous medical practices as well as towards traditional medicines, we need to give a brief historical background of developments in health provision and care in Zimbabwe from the colonial period up to the present day. This chapter neither provides a detailed history of traditional medicine in Zimbabwe, nor a systematic review of the literature on the subject. We simply highlight some of the major reasons for the denigration and marginalisation of traditional medicine. A systematic review of the literature as well as a review of some of the key policy documents from the colonial period to the year 2000 is provided by Waite (2000). The emphasis, as we have already pointed out, is to highlight some of the major reasons why traditional medical practices were viewed with suspicion by the settlers in the colonial period, and why this attitude was carried over into sections of Zimbabwean society to the present day, especially among the so-called elite of the country.

According to Waite (2000:236) the missionaries were the major players responsible for the initial introduction of modern medicine in Zimbabwe. There was always a 'conflict' between the traditional medicine used in pre-colonial times and the modern medicine introduced by the missionaries. This 'conflict' between traditional medicine and modern medicine usually revolves around differences in the explanation of the causes of ailments. In modern medicine, according to Richter (2012:12), the emphasis is on understanding what is referred to as 'material causation' in the diagnosis and treatment of an ailment. Traditional medicine, on the other hand, is perceived as generally viewing the cause of an ailment from a 'spiritual' point of view by generally pointing to witchcraft as the cause of most illnesses. At times blame is laid upon the ancestors whose displeasure is seen as being the cause of illness and misfortune. It would not be difficult, therefore, to understand why the missionaries, whose major undertaking was to spread the gospel, would obviously have tried and denigrated traditional medicine because of the nexus between traditional medicine and spirituality in African society. Given that the objective of missionaries was to promote Christianity, their disdain for traditional medicine which is heavily steeped in ancestral spirituality was understandable.

There were very few among the white settlers who strongly believed in the efficacy of traditional medicine. Michael Gelfand, a white medical doctor and academic, was one such advocate of the use of traditional medicine during the colonial period. Despite his efforts to dignify traditional medicine in the colonial period the general attitude in official circles of the white settler community was to denigrate it and closely link it with witchcraft (Waite, 2000). In the churches and in the school system (most of the schools were church-run) the general attitude was to denigrate traditional healers and their medicine, hence the derogatory term "witch doctor" used in colonial times to refer to traditional healers. The advent of independence in 1980 brought about a change in government policy towards traditional healers and traditional medicine. The new government wanted to foster a new national identity for the people of the newly-independent country. This search for a new national identity resulted in the government's recognition of traditional medicine at the centre of that identity because of its link with African spirituality. This attempt to reclaim African traditions and African identity has its roots in the Negritude movement. This movement was calling for an African renaissance in the 1960s and 1970s. According to Waite (2000:239) part of the rise in this movement which advocated for the 'African way' of doing things emanated from Kwame Nkrumah's ideas in Ghana. Nkrumah had adopted the ideas of the pan African movement. Amilcar Cabral of Guinea Bissau, Léopold Sédar Senghor of Senegal and Léon Damas from Guiana were some of the prominent figures of the movement that was called black consciousness. What started as a literary movement initially in French colonies spread to the entire African continent and influenced most of the African nationalists who fought for the liberation of their countries.

In Zimbabwe, two notable figures advocating for the inclusion of traditional healing and its practitioners in the national health care system, just after independence, were Herbert Ushehwokunze and Gordon Chavunduka. Herbert Ushehwokunze, the first Minister of Health in independent Zimbabwe, was himself a medical doctor, and was keen on traditional medicine operating alongside modern medicine in the health delivery system of the country. Gordon Chavhunduka, who was professor of Sociology at the University of Zimbabwe, was responsible for the resurgence of traditional medicine in Zimbabwe while heading the Zimbabwe National Traditional Healers Association (ZINATHA). However, traditional healers and traditional medicine continued to be viewed with suspicion as a result of their claims that they could cure AIDS. For some time, there were healers who got a lot of publicity after claiming that the 'African

potato' could cure AIDS. This is the period which Richter (2012:13) refers to as the phase of 'AIDS opportunism' or 'AIDS entrepreneurship' where the healers made a lot of money claiming to have found the cure for AIDS when in fact these medicines were only suppressing some of the symptoms without curing the disease. It is against this background that we are venturing into this field of indigenous medicines at a time when its efficacy is being questioned in many quarters. We argue that despite these reservations, their potential is vast.

Diversity, multilingualism and multiculturalism

As outlined in the introduction, geographically, this study focuses on selected districts of Zimbabwe. A further point to note is that it is intended to replicate the study in all the districts of Zimbabwe. That covering the whole of Zimbabwe it will enable the study to benefit from the unique contributions of the more than sixteen indigenous languages of Zimbabwe, is a foregone conclusion. The objective of expanding the reach of the research is in line with our approach which sees 'diversity as an advantage rather than a negative feature' (Prah 2003:5).

As observed by Dodman (2014:2), 'Every language is inevitably characterised by relativism because it naturally opens particular horizons and puts limits on what its users are able to conceive and express.' Each language, therefore, has its own unique contribution to the knowledge of the environment. For instance, the indigenous foods that one finds in Binga are different from other parts of the country. This means that one is likely to encounter indigenous knowledge systems that are different from other parts of Zimbabwe. Apart from the differences in the types of foods found in the different geographical locations and agricultural regions of Zimbabwe, there are also different traditions passed on from generation to generation in the different cultural regions. A study of the Tonga language and culture would most probably yield unique knowledge. Similarly, the vegetation that one finds in mountainous areas like Chipinge in Eastern Zimbabwe is different from that found across the Makonde district. We agree with Prah (2014:5) that socio-cultural pluralism, that is, sociologically open social systems 'have a greater chance of achieving than societies in which vertical and horizontal mobility are checked and hampered by socially constructed devices and control systems.' This linguistic diversity is not confined to different linguistic communities, but is also a facet within the same linguistic community. This is so because even within the same language are aspects of linguistic pluralism whereby in the Shona context for instance, there are dialects or varieties of the same language; and within the dialects are sub-dialects. Hence,

there exist pluralistic communities within the same linguistic community and this pluralism is most evident in the names of objects in that a single object will have different names depending on the geographical area. This phenomenon emanates from the tendency of a community to ascribe a name to something based on its social reality and experience. A study in ethnobotany by Takawira-Nyenya and Stedje (2011), for instance, documents the different terms for the genus *Sansevieria Thunb.* within different linguistic communities in Zimbabwe and South Africa. What is of relevance to this research is the multiplicity of terms used to refer to the same species within the Shona and Ndebele-speaking communities of Zimbabwe. A glance at the folk taxonomy provided by Takawira-Nyenya and Stedje reveals that communities name an object based on parameters such as use, shape or its resemblance to something else within their experiential reality. Therefore, the genus *Sansevieria Thunb.* is referred to as *zvikonje* (reference to utility of species for making rope); *nyanga yePeni* (Peni's horn is a reference to the acute end of the leaf); *masavamhanda* (species growing between two forks). In Ndebele, the terms *isikusha* and *isikusha seganga* both refer to the utility of the species for making rope; and *indlebe yebhalabhala* refers to the resemblance of the leaf to the alternating lines of a kudu.

The data on indigenous foods upon which this research is based buttresses the multilingualism and multiculturalism in the Shona-speaking community. As observed in the examples provided in Table 1, most of the terms used have variant terms and synonyms. The term *tsine* (blackjack), for instance, is known by different names by different linguistic groups in Shona and is thus variously referred to as *mhuwu, mhuu*, *nhungunira*, *nhungunira*, *nhun'unira*, *sina*, *sine*, *nama, guku* or *guza*. Similarly, *muboora* (pumpkin leaves – *curcubita pepo*) is referred to as *mutikiti*, *muvandanyoka*, *munhanga* or *mumhodzi*. We echo Chumbow (2008:1) who opines that 'From the linguistic perspective, the single most important characteristic of African nations is linguistic diversity. All African countries are indeed, multilingual and multicultural in varying degrees.' Rogei (2012:2), a Kenyan working with an organisation called the Simba Maasai Outreach Organisation which advocates for the revitalisation of the Maasai language and culture for sustainable development, argues that indigenous peoples have interacted with their environments, the natural world for thousands of years and they have profound insights into local ecosystems. He emphasises the preservation of these languages because of the cultural practises embedded in them. In this study we take the 'human centred and inclusive approach to mainstreaming culture in development' (UNESCO, 2013:3) by utilising the traditional knowledge and cultural practices in the preparation and use of

traditional foods and vegetables as embedded in the indigenous languages of Zimbabwe. We see the promotion of cultural diversity as an asset that enables greater social inclusiveness in handling the ecological challenges that rural communities face in Zimbabwe and in many developing countries. A multilingual context in which indigenous knowledge systems from previously marginalised communities such as the Tonga, Changana, Venda, and others, is also harnessed in order to find solutions to some developmental challenges in rural communities and thus lead to sustainable development.

Materials and Method

The data used in this study was gathered from various sources. Some of the terms were informed from a pilot study conducted in the Makonde District of Mashonaland West province of Zimbabwe; this study is a scientific investigation and documentation of the indigenous vegetables of Zimbabwe.[10] The other data come from research conducted in the Buhera district of Manicaland as well as in the Mberengwa district of the Midlands province.[11] The data were collected through oral interviews with the local communities. The other method used was the use of lexicographic data in the form of the *Duramazwi Guru reChiShona* (Chimhundu, 2001), a monolingual Shona dictionary that was consulted to corroborate some of the terms collected from the three districts. In addition, the authors of this chapter used the introspection approach which entails using introspective judgements of their own indigenous knowledge. The literature review method was also used in that the authors consulted other sources of documented indigenous vegetables from the research undertaken by Chipurura (2010) and Shava (2000). As previously pointed out, the aim is to cover the whole of Zimbabwe in order to benefit from the unique contributions from the more than sixteen languages in the country. Hannan's *Standard Shona Dictionary* (1981) was a very important source lexicographic data as well as the Latin names for some of the vegetables and foods.

Brief literature review

[10] Hazel Kwaramba, Joice Ndlovu and Nomalanga Mpofu-Hamadziripi – Researching and Documenting the Indigenous Vegetables of Zimbabwe: The Science and Indigenous Knowledge Nexus.

[11] Data from Catherine Chidehwe

This paper benefited from literature by international organisations such as UNESCO which, in the last three or so decades have been emphasising the role of culture in sustainable development. It also made use of the work by a number of prominent African linguists who advocate for the intellectualisation and revitalisation of African languages for use in the cultural revival of African communities as a prerequisite socio-economic development on the continent. Scholars like Alexander (2003), Bambgose (1991), Batibo (2009), Prah (2009), Miti (2014), and Banda (2001) have already been cited. We agree with calls to rehabilitate African languages not as documentation exercises but to utilise these languages to access indigenous knowledge systems that benefit the communities from which these knowledge systems emanate. Waite (2000) gives a detailed discussion of the history of traditional medicine in Zimbabwe going back to the colonial period. Her article provides a good background that shows why traditional medicine is viewed with suspicion despite efforts to push it into prominence especially after independence. The paper made use of a number of articles that focus on the status and use of traditional medicine in other African countries, for instance Ethiopia (Kassaye, Amberbir, Getachew and Mussema 2006), Kenya (Rogei, 2012) and South Africa (Richter, 20013).

A similar research was carried out by Maroyi (2013) who examined the use of "weeds" as vegetables in Shurugwi district of Zimbabwe. Maroyi was focussing on weeds which he defined as 'any plant which grows where it is not wanted.' His focus, therefore, was on plants that are undesirable because they impact on agricultural activities and grow in places where they are not wanted. Our work is not confined to weeds. We focus on foods and vegetables, weeds included, especially those that are used as relish. Mposhi, Manyeruke and Hamauswa (2013) call for a greater role for traditional medicine in the primary health care system of Zimbabwe. Their call is very welcome especially in view of their emphasis on the importance of patenting these traditional medicines so as to boost the economies of many African countries that are currently not benefitting from their intellectual property which has been passed on from generation to generation. Our paper brings in the linguistic dimension, advocating for the documentation of these traditional medical practices encoded in local languages. Such documentation provides a good starting point that can be complimented by the necessary scientific studies and thus lead to patenting.

[Table 17: Therapeutic and Nutritional Values of Some of the Indigenous Foods

Local name	Variant name	Uses	Medicinal usage
mutsine (black jack) *ucucuza* (Ndebele) *Bidens pilosa*	*mhuu/mhuwu* *nhungumira/ nhun'unira* *sina* *nawa* *muuwu* *guku* *guza*	Boiled before being sun dried then used as relish any time of the year	a) treats hypertension b) treats heart conditions c) increases red blood cells in the body d) juice from the pounded green leaves treats open wounds e) boiled leaves - running stomach
runya (type of okra) *Ceratotheca sesamoides*	*bupwe* (Mutoko variety)	Leaves are boiled as okra. Can be sun dried and used as relish	a) treats measles b) pounded green leaves are mixed with water –used as a shampoo to get rid of dandruff.
gezanjanji (type of okra) *Dicerocaryum zanguebarium*	*Feso*	Used as relish	a) used as hair shampoo for dandruff b) treats heartburn (*chirungurira*) c) repairs damaged hairline[12]
mubvunzandadya (wild spinach) *imbilikicane* (Ndebele) *Chenopodium album*	*muvhunzandadya* *muvhunzandadhla*	Used as relish	treats bile or gastritis
nyevhe (cat's whiskers)	*tsunha* *runi*	Used as relish	It is believed to treat the following

[12] *Feso* has been patented by Kuda Leticia Manyepwa as a damaged hair line remedy and is being sold locally and on the export market.

ulude (Ndebele) *Gynadroposis gynandra*	*rudhe* *bangara*	either as green or can be sun dried	conditions: a) toothache b) enhances appetite c) stomach pains d) ear ache e) epileptic fits
bononGwe *imbuya* (Ndebele) *Amaranthus thunbergii*	*mowa* *mbowa* *teka* *bowamonga*	Used as relish	Alleviates constipation
teketera (poulty flee) *uzanguku* (Ndebele) *Galinsoga parviflora*	*takata*	Leaves are boiled as relish	Used for epileptic fits
Chichohwa *Commelina africana*	*chidyahumba* *zheki* *damba* *gezi* *goshe* *goche*	Young leaves are cooked as vegetables	The root is used to treat a number of ailments, such as menstrual pain in women.
muuyu (baobab) *Adansonia digtata*	*mauyu*	New leaves are used as relish. The fruit powder used as a drink or put in porridge.	a) The leaves treat a number of ailments e.g. uterus problems in women (chibereko). b) cancer c) bark - treats toothache d) treats hypertensive conditions
dindindi (variety of mushroom) *Sporobolus pyramidalis*		It is roasted on the fire, or boiled and sun-dried for use in other seasons.	The smoke stops nose bleeding.
muboora (pumpkin plant	*mutikiti* *muwandanyoka*	Boil and used as relish. It is	Lowers high blood pressure.

or pumpkin leaves) *Cucurbita pepo*	*munhanga mumhodzi*	widely used in some hotels in Nyanga under the name 'Vegetables in season.' Seeds can be dried and then roasted	
*tsangamidzi (*ginger) *Zingiber officinale*		Eat the root (tuber)	Treats stomach ailments
mujakari (spindle pod) *Cleome monophylla*	*musemwasemwa mutyangetyange muchangechange mudyandakahwara*	Used as relish	Rich in iron
zviyo (finger millet)	*rukweza njera gwezera maonje chiutsi*	Porridge or sadza	a) Weight loss; b) Regulates blood sugar levels c) Mixed with herbs and taken in porridge.
mhunga (bulrush/pearl millet)	*mahuwa*	Porridge or sadza	a) Weight loss; b) Regulates blood sugar levels
majuru (termites)	*majenje*	Used as relish	Source of protein – averts kwashiorkor in children
madora (mopani worms) *amacimbi* (Ndebele) *Imbrasia belina*	*masondya masonja mashonja*	Used as relish	Source of protein
mhashu (grasshopper)	*hwiza*	Used as relish	Source of protein
ishwa *Isoptera macrotermes sp.*	*shwa*	Used as relish	Source of protein

tsambarafuta *Carebara vidua*	*tsambarapfuta sambarafuta*	Used as relish	Source of protein; Rich in fat
zvigakata *S. funebris/S. orissa*	*rumagotsi dandaruma*	Used as relish	Source of protein
majenya (king crickets) *Henicus species*	*mbaravazi mberevere*	Used as relish	Source of protein

A look at Table 17 above shows that the reported traditional remedies harnessed from the indigenous knowledge of the Shona people, and believed to be effective by the locals, could meet the bulk of the primary health care needs of the country. As can be discerned in the examples in Table 1, the plants used for food by Shona communities also serve other purposes. Indigenous people the world over and not just in Zimbabwe rely on what is available locally in their communities for sustenance. In this case the indigenous knowledge extends from the culinary to the therapeutic. For instance, garlic (*allium sativum*) has been used in ancient and modern times to prevent and treat various ailments such as different types of cancers and respiratory problems. In American folklore garlic is also said to ward off evil spirits. This can be likened to *zumbani* (*Lippie javanica)* among the Shona which has a strong scent like garlic that is also used to ward off evil spirits particularly where children are concerned. The authors remember their mothers, upon returning from a funeral, rubbing them with *zumbani* in the face to keep the spirits of the dead at bay.

Most types of mushroom (*hohwa*) are said to have a lot of medicinal properties such as antioxidants, antimicrobials and anti-inflammatory agents. Nutritionally they are good for carbohydrates and vitamins, particularly niacin. Okra is proven to contain antimicrobial agents and from an indigenous knowledge perspective, is believed to treat stomach ailments.[13] Evidence from scientific research suggests that niacin lowers blood cholesterol. The selected edible insects presented in Table 1 are eaten as a source of protein. Dube, Dlamini, Mafunga, Mukai and Dhlamini (2013:7427) point out that the edible insects are rich in protein, fat, minerals and carbohydrates. All the indigenous foods given in this chapter are nowadays being encouraged as the healthy foods by medical practitioners for both adults and children because they are natural and are nutrient-rich. What this study attempts to do is to present the indigenous

[13] Personal conversation with Catherine Chidehwe.

knowledge of the Shona people with respect to the nutritional and medicinal values of plants and vegetables found in the different rural areas. However, it is beyond the scope of this study to debate the plausibility of these remedies and beliefs, for that is the domain of science.

Conclusion

Indigenous languages enshrine large reservoirs of indigenous knowledge systems. The authors note in this chapter that a lot of knowledge pertaining to the maintenance of biodiversity is encoded in indigenous languages. A wealth of indigenous foods and medicinal properties, therefore, are also stored in these languages. The authors argue that documentation of these indigenous culinary practises complemented by vigorous scientific study can lead to the patenting of traditional medicines with the result that global brands designed to benefit both rural and urban communities in Zimbabwe and in many developing countries are created. The authors lament that the knowledge documented in this chapter, is fast disappearing due to a number of varied factors such as the dynamics of modern societies. As a result, unless something is done, most of the knowledge will be lost to the generations to come. For indigenous knowledge to remain vibrant and relevant, it has to be passed on from generation to generation.

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CHAPTER 12: FOOD SECURITY, INDIGENOUS KNOWLEDGE AND COMMUNITY TECHNOLOGY FOR SUSTAINABLE LIVELIHOODS

Maria Tsvere

Abstract

Food shortages are a preponderant livelihood challenge for rural populaces. Traditional foods arguably provide a readily available, rich, safe and nutritious organic diet. Culturally, African women are considered as 'seed keepers' and 'seed savers.' By focusing on the role of women in household food security, this chapter explores the rich indigenous knowledge resource women possess, how they apply this knowledge to sustain household food supply and contribute to biodiversity through crop seed management. Indigenous methods of saving crop seeds, as a cultural heritage, project ways by which women use culturally acceptable methods and community technologies to preserve traditional seed as household and resources managers who strategically ensure household food security. A scientific explanation for indigenous technological methods of storing and preserving seed is also provided. The discussion is informed by eco-feminism and interpretivist theories. Information was gathered through in-depth interviews, direct observation of the practical experiences of women. engaged in post-harvest technologies in Zimbabwe's rural communities as well as reflections on the author's lived experiences as a rural woman. The information was enriched with an extensive literature review on the subject. Indigenous crop threshed dust, soot, ash and wild plants are being used to preserve seed. Indigenous methods are safe, readily available, practical, cheap and effective for food processing, storage and seed preservation. Agro-scientists and policy makers in Agriculture make indigenous knowledge part of the global knowledge and tap into it for the benefit of sustaining household food security for rural communities.

Introduction

Rural poor livelihoods are greatly influenced by indigenous knowledge. Indigenous knowledge is relevant to agriculture, resource management, primary health care, saving and lending, community development and poverty alleviation. The World Bank (2015) explains that indigenous knowledge interacts with development processes. Indigenous knowledge has proved useful in preventive

medicines and psychosocial care and ethnic veterinary medicine (World Bank, 2015). This means that indigenous knowledge is a significant component of community development. Even though indigenous knowledge evolves, it is a necessary African innovation that supports human life and livelihoods. This is possible because traditional knowledge, if utilised well, can be a key to sustainable healthy ecosystems and food security across the world. Aluma (2004:25) argues that staple food is recognised as a crucial solution to critical community livelihood threats during drought periods.

Women through application of indigenous technologies and their wisdom continue to ensure that families continue to access food. Women ensure that indigenous technologies are properly utilised to serve their purpose. There is abundant literature on the role of women in food processing and grain storage (Matsa, 2013). There seldom is any literature on how women, who store seed, explain their actions and the link between their explanations and scientific principles. This chapter illuminates the value of indigenous knowledge (IK) and that of women as an important resource in the discourse surrounding sustainable livelihoods at household level. The chapter also compares their actions to scientific explanations. Seed is singled out because it is one life-sustaining resource that has evolved freely. Seed gives natural diversity and assures life on the planet.

Indigenous knowledge, societal development and household food security

The discourse of household sustainable development and agricultural biodiversity has roped in indigenous knowledge systems (IKS) theory and practices. The realisation of the potential of IKS to knowledge development has also led to the global call for the recognition and integration of IKS and indigenous technologies in scientific knowledge. According to Ibnouf (2012), indigenous knowledge is the unique knowledge of a given society. It is a social capital that includes skills and practices, know-how and representations developed and adapted over ages and passed down through the generations. IKS have guided most human interactions with the natural milieu: agriculture, health, socio-educational development and cultural interactions. Berkes (2012) in Sacred Ecology talks extensively about indigenous knowledge and explores the nature of indigenous knowledge. These and other writers describe indigenous knowledge as an information hub for locals that influences the decisions and practices of local people. This knowledge has for decades helped small scale rain-fed rural farmers to sustain their households in terms of food, health and education.

Ethnoscience was born out of the quest for society's knowledge of their environment, a discourse that was started as early as 1954 by the scientist Harold Conklin in the Philippines, and the breath of a people's knowledge and insights that could be drawn from that knowledge (Ellen, 1993). Indigenous knowledge is found in traditional medicine practices (Mapara, 2009), architecture like Egyptian architecture, the Shona people's architecture as epitomised in the Great Zimbabwe monument and community technology. Indigenous knowledge includes skills and practices entrenched in people's cultures, and is an asset used to achieve sustainable livelihood, control of the environment and community life. Since this knowledge is sustainable, it is used to ensure sustainable household food security in African rural communities. Household food security is the ability of food providers to physically secure adequate safe and nutritious food at all times to meet the dietary requirements, food preferences and cultural preferences of their household members for active and healthy lives (Ibnouf, 2012) irrespective of whether modern or indigenous methods used. Traditional foods are useful food sources during times of environmental stress such as drought and off-seasonal food shortages. Rural communities have limited irrigation opportunities. Food sources are therefore seasonal. These communities rely on preserved food.

The relevance of indigenous knowledge and its content should be recognised and adopted where appropriate or adapted to become part of the global knowledge economy. The knowledge can be adapted or transferred to other communities. Foreign knowledge that also includes its indigenous knowledge can be a source of knowledge that may improve local indigenous practices. This implies a possibility of transferring indigenous knowledge to similar cultures resulting in improved practices and progressive community technologies. A country risks losing its critical unique memory when it fails to protect its indigenous knowledge and resource base. To protect such resources, seed biodiversity, seed saving and preservation have been and continue to be part of Zimbabwean women's cultural heritage. Development agents should value this resource as part of community culture. By integrating community approaches and technology in activities aimed at developing communities, the communities increase their confidence and value. Other development agents can take time to recognise the value and potential of IK and appreciate the interaction of community people as well as the objectives of indigenous knowledge.

Sustainable development is only possible when people are able to mobilise their knowledge capital (UNESCO, 1997). Development agents have

three options. They can encourage communities to rely entirely or sustainably on indigenous knowledge, override indigenous knowledge or incorporate indigenous knowledge in development programmes or projects. Traditional people fear losing their traditional seed varieties and incurring a decline in seed quality. Their survival depends on the skills passed on from their elders. This is why they have traditional knowledge systems built around seed preservation.Community development occurs in ways that transfer community technologies to inform modern technologies. International communities are creating gene banks to preserve local varieties of genetic information and indigenous species (World Bank, 2015). The World Bank (2015) states that seed and clones do not carry instructions on how to grow the varieties and recommends that indigenous knowledge should be captured, preserved and transferred so that the seed varieties are preserved and saved from becoming extinct.

Social modelling is a learning theory that asserts that learning is a function of observation. People learn by simple processes such as copying, imitation or modelling. They observe and model actions and behaviours exhibited by other people (models) in the environment. Learned behaviour is retained through practice (Bandura, 1977). The social exchange theory explains how interpersonal interactions influence behaviour. Indigenous farming and seed preservation is learnt through modelling older farmers. Human interaction is also associated with social exchange of rewards and costs. People learn faster when they expect good rewards and minimise costs. When a farmer receives a reward, he/she feels inclined to reciprocate the service that led to her/him receiving the reward. Indigenous knowledge, shared is often linked to rewarding results. Quality seed, and good seed preservation practices, have stood the test of time.

By sharing indigenous knowledge, younger generations become confident and appreciate traditional agricultural practices that are currently under threat given that they are labelled inferior methods. Youth involvement also ensures the continuation of rich indigenous knowledge and practice. This is why it is necessary to protect, preserve, perpetuate and sustain knowledge of seed management for the benefit of future generations. The critical issue in food security debates is that whatever the means used, the food must be accessible, affordable and of good quality. Seed networks use seed-saving programmes such as Field Days, Seed fairs and Food fairs to share the rich indigenous knowledge, restore and revive indigenous seed. During these food, Fairs, women showcase their seed varieties and the food derived from the seed. They bring various dishes so that younger women can experience the rich taste and get motivated to learn

how the seed is grown. The older women offer practical demonstrations of how the different dishes are prepared. Women display their expertise of seed selection as well. Younger women use these fairs to obtain quality seed.

Threats to sustainable families

The strength and significance of any country lies in its ability to marshal its knowledge capital and have that knowledge compete on the global knowledge economy. The wellbeing of people in any community or country can also be used as an authentic measure of that community or country's progress. A self-sufficient or food-secure society is one that is free from poverty and hunger, and enjoys improved health. Such things are possible in a stable environment. The prevailing situation, however, is that the natural environment is changing just as the culture is changing. Changes are inevitable due to changes in the climate and changes in the global economy. The effects of these changes pose a threat to indigenous knowledge as traditional practices disappear and/or become stigmatised. The implications of these changes can be detrimental to community technologies, skills and problem-solving strategies communities had developed over the years to sustain their household food security (World Bank, 2015). Matsa (2013) argues that modern methods of seed selection and preservation are being preferred to traditional methods.

Many traditional agricultural practices disappear because of intrusion by foreign technologies or development concepts that promise short term gains or solutions to problems without being capable of sustaining them (World Bank, 1997). Shiva, Shroff and Lockhart (2012) argue that seed sovereignty and seed diversity is threatened by the introduction of Genetically Modified Organic (GMO) seeds. In India seed laws have restricted attempts by smallholder farmers to grow their own seeds and forced them to depend on giant seed corporations, which, in most cases, promote patented genetically modified seed varieties. Genetic contamination has positive and negative effects on seed production. Modern technologies and genetic modification experiments produce promising crop seeds that produce higher yields. The same experiments put indigenous seeds under threat.

Genetic modification destroys the uniqueness of indigenous seed varieties. Crop seeds mostly affected include maize, rice, mustard, vegetable varieties and potato varieties. Genetically modified seeds are tested in open fields. The chances of original seed varieties getting contaminated are, therefore, very high. Original Indian cotton and corn seed varieties are being lost to seed contamination (Shiva *et al.* 2012). Seed biodiversity is being eroded by the

introduction of high yield seed varieties that now flood most African markets. These seeds are created to respond to the effects of different synthetic pesticides. Shiva *et al.* (2012:1) states that "quantity empty quality and weight empty of nutrition does not provide nourishment...while farmers breed for resilience, corporates breed vulnerability... women breed for taste, quality and nutrition...." Genetically modified seeds are sold together with some chemical fertilisers and pesticides. Genetically modified seed producers push their agenda to younger generations, thereby undermining efforts for sustainable environmental preservation. This is done often by omitting or ignoring cultural practices and indigenous knowledge or by destroying the unique local biodiversity.

The African Biodiversity Network, *Navdanya* (nine seeds) and the Zimbabwean Chikukwa Ecological Land Use Management Trust are examples of networks that protect bio-cultural diversity and defend human bio-privacy in an environment affected by climate and global changes. Shiva *et al.* (2012), describe *Navdanya* as being predominately driven by women who are guided by save, revive and share core values, thus conserving culture and sustainability through seed conservation, knowledge and utilisation. The networks derive their activities from indigenous knowledge applications that rest on culture as a pillar for sustainable development. Seed preservation knowledge transcends common knowledge about seeds, the ecosystem and biological biodiversity that have rich scientific explanations.

Extension workers tend to promote the use of modern seed varieties, provide advice on use of modern chemicals and fertilisers. They do not realise how much they are undermining indigenous methods and stalling the popularisation of indigenous technologies. Ramprasad (2011) claims that extension officers tend to provide information about good farming practices to men than they do to rural women. Women are often left out when decisions are being made. This includes decisions about farm management including the use of productive seeds and chemicals for farming areas. Experience from Zimbabwe and other rural communities shows that indigenous community practices should be documented. The population of people who survive on smallholder farming should, therefore, be recognised and understood in terms of how they manage their produce through technology and their ingenuity. This situation often occurs when agricultural production and consumption become conditional to corporate interests. Shiva *et al.* (2012) argue that the introduction of new intellectual property rights has seen emerging corporates hijacking the diversity of life on earth and people's indigenous innovation. This is particularly true for the agricultural sector. As the push for intellectual property rights and allowance of

bio-piracy gains momentum, all indigenous innovation is undermined by profiteering corporates.

Women and Indigenous Knowledge in relation to food security

Women constitute 60% or more of the rural population (Ibnouf, 2012). In addition, women contribute more than 50% to the food grown worldwide (FAO, 1995 cited in FAO, 2011) and provide over 40% of the agricultural labour in Southern Africa (FAO, 2011). Although these estimates vary from country to country and change with time, an important observation is that women are responsible for 60-80% of household food production in Sub-Saharan Africa (Mvududu, 2000; FAO, 1994 in FAO, 2011). They play a significant role in food security (Matsa 2013). Women in African indigenous societies have the responsibility of achieving Household Food Security. They are well-informed about their environment, particularly about the resources available to prevent household food insecurity. This implies that rural women are at the centre of biodiversity conservation (Rampele, 2004), and home environment management (FAO, 2011). They are responsible for household financial planning and management. Women in most African communities are, therefore, described as live-based local resource managers. In Zimbabwean cultures, women are responsible for household propensity and hunger eradication.

In any African household and in social contracts, mothers are expected to manage the household including food resources. If a mother is lazy or idle, the household suffers as the household remain beggars as a family. The mother, who makes errors or is careless in seed selection, is sure to have doomed yields. Women are planners; they are able to estimate the amount of grain food reserves that should be stored to last the household to the next harvest without having to rely on begging or food supplement. Rural women are, therefore, responsible for household food processing and storage. This role in Zimbabwean cultures is a gender role assigned to women. If men attempt to take part in this role, they are considered as people who exasperate women (*vanoshusha*) when they interfere with women's roles and work. Men are material collectors and managers of the granary construction process and the construction of food shelters. Wisdom, skills and experience through IKS transmission is still being used by men to construct storage containers and structures that minimise seed and grain seepage and loss.

Development processes in rural communities are informed by indigenous knowledge. Indigenous knowledge is a critical aspect of social capital and sustainable strategies for household survival. It is a basis for decisions

pertaining to food security, natural resource management and education (Gorjestani, 2000). Rural women are well-versed in traditional methods of post-harvest technologies. Their practice in food processing, storage and seed preservation has sound scientific explanations. Indigenous communities have their own way of explaining phenomena. They have their way of describing the observations and findings of their experiments. Much of indigenous knowledge is exhibited in methods that are used by rural women to process, store food and preserve seed. Technology is part and parcel of a people's culture. As women interact with their environment and through their innovations, new knowledge is developed. This rich source of information is based on the results of insights, observations, and trial and error experiments. Most of their experiments are basic but creative and innovative and are informed by experience and skills. African community members, for example, believe that if one is looking for medicine, they follow animals such as goats and insects like bees which they observe feeding on medically beneficial plants. This is the kind of indigenous knowledge that women use to adapt external knowledge to their indigenous knowledge.

Women and Agricultural seed biodiversity

Seed is a symbol of human partnership, shared and spread consciously or unconsciously to unite people. Seed, particularly indigenous seed, has a cultural significance in that it is used for traditional rites: prenatal and post natal care, marriage ceremonies, death and or coming of age (Gaia Foundation, 2015). Millet is one such sacred seed that is considered a symbol of life in Zimbabwean Shona and South African Venda communities. Sorghum is a cereal for Zimbabwean peasant farmers living in semi-arid regions that customarily produce the popular African beverage (*mahewu/amahewu)*, beer and cattle fodder (Matsa 2013). Rural women employ environmentally friendly, economically cheap and practical methods to process and preserve these seed varieties. Community independence and increase in crop biodiversity is made possible by sharing traditional seed varieties. When I was growing up, my mother told me that it was a bad habit and something shameful to buy common seed. It was unheard of to eat seed preserved for next planting seasons. Each household preserved its own seed and passed it on through their generation. Siblings could share from the same mother's seed. It was considered noble however to ask for a new variety of seed when one had not planted the type of seed on their land. If a woman wished to plant a certain variety of seed for the first time on her land, it was considered noble to ask for that seed variety from her neighbour but she was expected to explain that she did not have such seed on her land. Most household

farmers hold on to this belief and practice although they have also embraced the purchase of hybrid seed varieties. This notion supports the observation that women trusted their own seed. They feel confident since they always have quality seed at the onset of each rainy season (Mutambuki, 1998) and are assured of good quality yields during the harvests.

Agro biodiversity is gendered

Mararike (2001) indentifies rapoko, peanut, beans, pumpkin, groundnuts and vegetable seeds as traditional seeds in Zimbabwe. These seeds are feminine. In Njanja and Bikita, Zimbabwe, if a woman passes on, her relatives expect their in-laws to provide some seed/grain from their daughter's granary as evidence that she was hardworking and responsible as a household food security manager. The seed can either be ground nuts, *vigna unguiculata* or cow peas (*nyemba*), *Bambara groundnuts* (*nyimo/indlubu)*, finger millet or rapoko (*rukweza/zviyo/ amahlwayi*), millet (*mhunga/inyawuthi*) and/or sorghum (*mapfunde/amabele).* If the woman's in-laws fail to provide this grain, it implies that the deceased daughter- in-law was an idler. She was not growing any household grain all her life. This is the very reason why bio-diversity of seed is gendered. In Zimbabwean rural Shona culture, seed biodiversity occurs during these traditional marriage processes. This is why in rural settings when girls get married, part of their send-off luggage includes seed. A newly married woman is sent off fully equipped with items that should enable her to start her own home. A daughter-in-law's success depends on the type of seed she receives from her mother. In the first year of marriage, her in-laws are expected to provide the newly-married woman with a portion of land, to grow her seed. Mothers value their daughters. A mother, therefore, gives her daughter good seed. At some stage in the future, the daughter will, in turn pass on the seed to her own daughters on getting married. Year in, year out, these crops are grown on fertile land. That way, the seed variety is sustained and preserved. Married women are, therefore, not expected to use up all the grain in any one season. Food should always be available in a married woman's barn. This is how seed is maintained and seed is made available every season. Households are, therefore, assured of food every season.

In rural Zimbabwe, for instance, indigenous seeds include sweet potato, cassava, groundnut, *bambara groundnut*, sweet pea, *cleome gynandra*, commonly known as spider's web or cat's whiskers (*nyevhe/ulunde*), squashes (*mapudzi*), *cucurbito pepo* or pumpkin (*nhanga*), *citruilus lanatus* or watermelon (*nwiwa*), sorghum, finger millet, *abeimoschus esculentus* or okra also known as lady's finger (*derere rechipudzi/idelele*), pepper and other chillies and mucuna *pruriens* commonly known

as the velvet bean (*huriri*). These are seed varieties that are expected to be preserved by women. Vegetable seeds such as *brassica carinata* commonly known as the Ethiopian kale (*chembere dzagumana*), *brassica juncea* known as mustard rape or the Indian mustard (*tsunga*) are all also preserved using this indigenous bio-diversification technique. Of these seeds, chillies, finger millet/rapoko are not easily attacked by weevils. Sorghum, bean and cow pea seeds are easily attacked by pests. The sections that follow explore the principles of seed preservation and relate the principles to methods and techniques used by indigenous women.

Principles of seed preservation

Seed selection is a role of women who through experience are able to identify seeds that are likely to produce quality seed in the following season. Women explain that it is always important that seed is selected with care. To select good seed, women use texture, size and colour and they check for cracks and or attack by pests. This work is mainly done by elderly women who have patience and skill. Women also pay particular attention to that part of the plant they collect seed from. They select only fully-matured seed. Selected seed is kept separate from other grain. Women discourage mixing seed with other grain in order to preserve only the natural or original seed variety. Even when they get seed from neighbours, the seed is kept separate to prevent cross-contamination through genetically modified seed. Mapara (2009) supports this statement when he arnotes that

Women are just as particular about seed production as they are about seed maintenance. They worry about seed germinability and its viability. Women are aware of the conditions necessary for seed germination (moisture and warmth). They take advantage of this knowledge and use it to preserve seed. Experience tells the women that seed decreases in size with time just as the size of a plant decreases with time. They also are aware that seed can fail to germinate after some time (longevity) and that seed germinates only when certain conditions are present. These are scientifically valid observations given that most crop seeds have a viability of 2 to 5 years. The vitality of seed is another aspect that women pay particular attention to. Though they may not use the term vitality, women explain the importance of selecting and storing seed using seed size as a criterion. Women do not only consider these internal factors, but also worry about such external factors as moisture, warmth and oxygen (air).

Indigenous women explain that moisture softens seed covers (seed coat) and allows in water that acts on the seed embryo (*moyo*) so that it germinates much faster. That observation is partly true. Laboratory experiments show that

water does make the seed coat permeable but allows for gaseous exchange. Water also activates the protoplasm of seed cells. This is why women clean and dry the seed in the sun to make sure that it is completely dry. Seed is then stored in these containers at room temperature. The containers are sealed tight to prevent moulding and germination. Most seeds germinate whether light is present or not. Elderly women are careful about keeping seed in light despite this scientific fact. The principle behind this is that some seeds, like the tomato and onion seeds are negatively photoblastic (light hard); they germinate only in the absence of light. Women have adapted this community technology to prevent tomato seeds from germinating by drying and storing in open baskets outside in broad sunlight.

Preservation techniques

After crushing the seed, women clean it by winnowing and hand selection. Women who preserve seed select whole seeds. They remove dead leaves, germinating seed, insects- infected seeds and mouldy seed. They also remove broken, crushed and bad seed (rotten and seed with spots). Women select only seed that they describe as being of good quality. Such seed is more likely to germinate and grow free of infection and also become seed-disease- resistant. Women then treat the seed before storing it to protect it seed from infection and being bitten by weevils or insects.

Indigenous storage pots

Figure 1: Storage containers

Seed for subsequent planting seasons is preferably kept in gourds or clay pots which can be sealed after treatment. Treated seed is also stored in baskets (*tswanda*) and plastic containers (Figure 1). The seed is contained in gourds closed with feathers, air tight clay pots, drums, sack, calabashes and/or closed granaries. Clean dry containers, cloth bags placed inside another container (clay pot or

basket jars with tight leads) are also used to store seed. Seed is kept in clay pots under dry conditions to increase its shelf life (Ibnouf 2012). Women also believe that seed is safe when stored in dagga granaries, earthen pots, woven baskets or bins that are covered with cow dung and wood ash. Besides keeping moisture out of the air tight containers, covering the openings helps to keep rats away. In addition, plastering seed containers and granaries with dung kills *vinchucas*. Originally, pole and dagga granaries were supported by straddle tree trunk supports. These are slowly being replaced by concrete pillars. Traditional granaries are often found with supports of straddle stones, or straddle granite stones and other sandstone types. The idea is to lift the dagga granary off the ground to support the granary, and keep out vermin and the water seepage. That way, seed is kept dry. Storage granaries act as food security systems that are more effective for protecting such grain as maize, millet, sorghum and rice from ground moisture, termites, insects, *sitophilus zeamais*, *sitotroga cerealla* and long grain borer *Prostephanus truncattus Horn* (LGB) insect pests (Mhiko and Shokoro 2014).

Figure 2: Storage granaries are plastered with dung and ash

Shucking is done to discourage the multiplication of long grain borer that thrives better on cobs than on loose grain (Mhiko and Shokoro, 2014; Wambugu, Mathenge, Auma and van Rheenen 2009). If the base of straddle stones is tapered towards the top with an overlapping cap stone, rodents find it impossible to climb up into the grain stored as shown in Figure 2. Raising granaries also allows air circulation. Traditional granaries sometimes crack due to poor workmanship. That is why now and again, women check and plaster the granary to prevent pests from hiding in the cracks. Granaries or archives (*matura*) are also completely sealed to prevent aeration that in turn discourages large grain borers (LGB). That way, grain is preserved for longer periods.

The tops of granaries are sealed with layers of logs and mud. This is done to prevent seed from catching fire. Grain is poured in through a small side window. Women prefer mud to cement. They believe that seed in direct contact with cement easily becomes moist and is likely to gain enough moisture that it can germinate. Cement technically creates extreme hot and cold temperatures that disturb heat distribution in the grain. Women are also aware that sorghum is more easily attacked than rapoko which can last for years without being attacked. Sorghum is, therefore; consumed first then pearl millet (*mhunga*) and rapoko is consumed last. The following paragraphs elaborate how indigenous women preserved seed. Moisture increases the rate of respiration of seed and raises the temperature such that if the seed quantity is large, the seed may be killed, thus affecting seed longevity. The loss of seed vigour and death are explained by frequent temperature and moisture fluctuations in stored seed. Frequent temperature fluctuations. High moisture content in seed may cause cellular mutations which makes seed fail to germinate. Seed should have eight percent or less moisture content. Mildew and mould develop faster if seeds are kept in high moisture conditions. Such conditions have a damaging effect on the seed and shorten the storage period. Indigenous people use the dehydration technique to preserve food by reducing moisture content in the food they preserve. Women also use this technique by keeping seed in the open sun to allow the seed to dry before they store it.

Figure 3: Method of drying seed

Seed left in the open to dry is subjected to hot and cold temperature changes and has an increased rate of metabolism (Figure 3). Drying also reduces the chances of grain contamination and the production of aflatoxins. Sumner and Lee (2012) confirm that the growth of this greenish mould on grain can be reduced by proper seed management practices that include drying, cleaning carefully selected seed and drying the storage equipment. During harvesting, women select those seeds that are fully-developed and prepare them for storage using the sun-drying

technique. The plants with selected seed are kept to dry in the sun over longer periods than other seeds before they are processed for storage. The processing is different for different seed varieties. Groundnuts are uprooted and left lying on the ground to dry under the sun. Beans, velvet beans and millet are cut and left to dry on the sun on rocky platforms. Vegetable seeds which are small and difficult to separate from sand, are spread and left to dry in the sun in winnowing baskets before they are processed. When the women check and are satisfied that the seed has dried enough, it is shelled and after winnowing, the seed is selected, treated and stored.

Brassica juncea, commonly known as Indian mustard or mustard rape (Tsunga) and Brassica Carinata commonly known as Ethiopian kale (*Chembere dzagumana*), are generally harvested just as they start to get dry to prevent seed loss due to scatter. The whole plant is cut off and dried in the sun. After shelling and winnowing, the dried seed is stored in dry containers at room temperature. The green pumpkin (Mapudzi or maranga/amakhomane) is left in the fields until it hardens and can no longer be eaten fresh. It is then dried and kept beneath granaries until the next planting season. Indian women hang the pumpkin or cucumbers individually in porticos (Narayana, 2004). Air and sun-dried pumpkins and melons can go for a year without any attacks from pests. Skilfully crushed, these are used as calabashes (amaqhaga/zvitemba, inkezo/khavho) and containers of water, beer, herbal medicines, milk and grain among others (Matsa 2013:238).

Figure 4: Seed hung inside a kitchen

Protection of seed against insects and pests

The Kitchen is acknowledged to be the best storage place for seed. Rural small household farmers rely on wood for cooking and space heating. Most rural kitchens are made of pole and thatch with cooking stoves placed in the centre of the round huts (Figure 4). The smoke produced by the firewood produces fine soot. Women observe that maize and sorghum seed are easily attacked by weevils. They also observe that kitchen wood is not attacked by termites. For that reason women eventually began to store maize and sorghum seed in their kitchens. Women also learned that the maize and sorghum seed hung up in kitchens is safe from weevil attack. Cow pea seed is harvested with up to 12% moisture content. This seed is also easily affected by weevils.

Fire produces temperatures higher than those outside but they are enough to reduce moisture content in seed hung above the fire or placed around the top part of the base wall, between the thatch and the wall. Women, therefore, keep cow pea seed in smoking kitchens to reduce the moisture content to about 8-9%. Smoke treats the seeds against weevils. In some kitchens, the seed is hung on a wire directly above the fireplace to keep rats away and to allow the seed to receive soot directly. This strategic position makes it possible for seed to have maximum air circulation. That also discourages pests and insects from crawling to the seeds.

The reduction of moisture content in the seed lessens grain contamination. Aflatoxins caused by grain contamination may cause liver damage when consumed. Aflatoxins may be produced before or after the harvest, particularly if proper storage is delayed or done incorrectly. The main idea, therefore, is to keep grain away from moisture so that the seed is kept in good condition to prevent mould growth. Harvested grain produces moisture if it not properly stored. Such grain is prone to attack by weevils and pests. This is why rural household farmers periodically spread household grain in the sun to repel weevils and flies and also allow the pests to escape and reduce ther chance of producing mould. That is also why before grain is sent for grinding, it is dried further in the sun to prevent contamination through aflatoxocin.

Preserving seed by using leaves

Women collect plant leaves such as eucalyptus leaves and dry them in sheds to retain their aroma. Some of the dried leaves are then spread at the bottom of the granary and grain is poured on of top the leaves. More layers of leaves are added in the grain is such a way that the aroma of the leaves diffuses throughout the grain. If the grain is for seed, the women crush the dried leaves and thoroughly

mix them with the seed. Since most rural households do not have scientific measuring scales, women use their experience and approximate mixing ratios based on their experiences. Because their methods are safe, their mixtures often contain generous quantities of leaves. Some women, for example, simply mix three buckets of grain with at least one bucket of dried leaves. For smaller quantities of seed, two half litre (common tea cup) containers of crushed leaves are mixed with seed in 10-litre containers. The seed/leaf mixture is then stored in sacks or dry containers. Teretere (2012) explains that the aroma from the eucalyptus leaves repels insects. Teretere (2012) suggests three layers of dried leaves for every 100kg of seed. This is also a traditional practice in Uganda.

In Tamil Nadu (India), the leaves are mixed with ash. In India the method is also used to control the *Engoumois* grain moth, a storage pest of maize and rice seed (Nitchterlein 2012). In Tanzania, *Tephrosia*, tobacco snuff is used instead to control cow pea seed. Dry hot pepper mixed with Cypress tree leaves or Mexican marigold leaves are being used to preserve bean in Uganda (Teretere 2012). In Zimbabwe, women also use *Peltophorum africanum* (*Muzeze/umkala*) and *Lappia javanica* also known as lemon bush (*Zumbani/umsuzwane*) leaves instead of the eucalyptus leaves. Women also use millet, velvet bean and rapoko dust instead of leaves to preserve garden seed. After the harvest, the chuff (*hundi*) is mixed with the seed that is then kept either in closed seed storage containers such as gourds.

Alternatively, after sun-drying, crushing and winnowing, the clean seeds are thoroughly mixed with fresh leaves. Small bunches of fresh leaves are laid at the bottom and around the storage container which could be a sack. The mixture of seed and leaves is then poured into the storage container and more bunches of leaves are spread at the top after which the container is sealed. The sack, a preferred storage container is then tied. Women explain that sacks allow for air circulation, which encourages the diffusion of scent from the leaves and a faster way of driving weevils out of the seed containers. Women say they can use wet leaves because they produce a stronger odour as the leaves dry inside the container. If wet leaves are to be used, then they store the seed in sacks, which prevents air from building up inside the sack but allow air to circulate and facilitate the drying process. As the leaves dry the scent becomes stronger, repelling weevils away from the sack. As the scent lessens, more leaves are added to replenish those leaves whose odour has been lost. Women change the leaves at least every three months until the next planting season (Teretere 2012). The idea is to have at all times, leaves producing enough smell around the seed in the

container. If the grain is used as food, women first spread the grain in the sun and winnow the grain to remove all leaves.

Using ash and other seeds to repel insects and pests

Pests such as borers like weevils (*implehlane/zvipfukuto*) attack seed but when the seed is properly preserved, it can last a year or more. Most traditional seed varieties are not easily attacked by pests and these are used to protect other seeds. Some traditional seed varieties are also more resistant to diseases than commercial crops. Millet seed which sustains about 10% of Zimbabwean households is reported to last more than three years (Matsa, 2013). Pear millet can last for more than five year without being affected. Dried watermelon seeds can last for more than a year (Ibnouf, 2011). Chillies are not attacked by weevils. Women know from experience that rats, cockroaches and ants avoid the fireplace area. They also know that fresh wood ash is a repellent for cockroaches and rats in the home as well as for ants and mice in their gardens. In various households, ash is used to remove ticks and flies from dogs. Men smear ash onto the animal's fur. Over time, indigenous women adapted this technology and went on to use ash to preserve seeds. Burning ensures that all living organisms are killed. The resulting ash powder is safe and active in keeping seed free from pest attack. Women explain that the smell of ash repels rats, worms, mice and insects such as lice, ants, ticks, and cockroaches. Although common ash (ash from the kitchen fireplace) is commonly used, women explained that the ash of *vangueria apiculata (Munzviru/umviyo)* and goat waste used individually are safer and more effective insect repellents than common fireplace ash. A heap of goat waste is burnt completely to form ash. After sieving the ash powder obtained is then mixed with seed.

Figure 5: Vangueria apiculata (Munzviru/Umviyo)

Vangueria apiculata, when burnt, this tree produces white ash that is believed to have **high sodium carbonate** content and very effective in deterring pests. The ash is mixed with seed before storage

The *Vangueria apiculata* ash contains salt and a substance that kills bacteria on wounds especially. Women use this knowledge and spread ash in the corners of houses, especially the dark corners, and in places where they store grain as well. Literature reveals that wood ash contains potassium, calcium and magnesium carbonates. Bicarbonate of soda has a sour taste that is too sour for weevils and other pests. The ash is renewed regularly. To preserve seed, a thick layer of ash is put at the bottom of the seed storage container and the seed is then generously covered in ash and stored in a dry storage container, e.g. a clay pot. More ash is put on the top to cover all seeds before the container is sealed. For as long as the ash is active, no insect will attach the seeds.

Shazhia, Masunga, Makundi, Misangu, Kilonzo, Mwatawala, et al., (2006) confirm that rural people used traditional methods such as botanicals to control pests in grain. Shazhia *et al.* (2006) note that natural pesticides are regarded as being more sustainable for rural subsistence farmers mainly because natural pesticides were eco-friendly, safe and more effective than synthetic pesticides. Rural households prefer natural methods because the synthetic pesticides are expensive and not readily available among small scale farmers. Indigenous people, therefore, have tended to resort to using plant extracts, ashes and powders among other things to deal with pests. Narayana (2004) explains that Indian indigenous people protect rice seed by using salt powder and chillies. Indian farmers mix 100kg of rice with 500g of chillies and 1kg of salt powder Narayana (2004:11).

Conclusion

The knowledge is intended for development agents to learn from indigenous knowledge and bridge the gap between modern science and indigenous methods of seed preservation. Indigenous women are already practising household food security and can continue with the endogenous development activities once they note the benefits of including new knowledge. Indigenous knowledge continues to be transmitted to younger generations thus facilitating the conservation processes. The importunate and resilient indigenous technologies are robust and they triangulate humans in a web of the physical, spiritual and nature. Even though modern scientific theories condemn the use of storage places like the kitchen, indigenous methods are still being used. This valuable knowledge and technology has survived the test of time. This chapter has shown the important link between the futures of household food security which rests upon indigenous women who produce the seed, and scientific explanations of actions displayed.

The documentation of indigenous technologies is a way of preserving safe and effective ways of ameliorating not just the poverty situations in poor rural communities but also of protecting seed sovereignty. Indigenous methods of seed preservation and storage need to be recognised as it is important to protect indigenous seeds against contamination, piracy and extinction. This chapter highlights the role of women in seed selection, preservation and storage. It also shows how women skilfully select seed, use natural methods of seed preservation methods to store seed for long periods of time. Goat dung burnt into ash and mixed with seed has been proven to preserve seed for more than a year. Granaries plastered with cow dung have been proven to protect grain and seed for more than a year. Indigenous plant leaves are mixed with grain and seed before storage. The chapter shows how women use bitters to preserve seed. Development programmes should also note gender as a critical aspect of sustainable household food security and ensure that information is shared with women in development activities instead of marginalising women's methods of food selection, seed protections and preservation.

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