



What Selected Basic Schools in Western Zambia are Best At in Environmental and Sustainability Education

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Abstract

This paper outlines a research project which was conducted on the theme of 'Education for sustainable development: Enhancing quality and relevance of education for all'. The study was part of a partnership of five southern African universities who joined forces in a research programme under the support of the SADC Regional Environmental Education Programme based at Howick in South Africa. The aim of the research programme was to contribute to the debate on how Education for Sustainable Development (ESD) could enhance the provision of quality education for all in southern Africa. This aim was set within the following broad research question: How can environment and sustainability education programmes contribute to the quality and relevance of education for all in southern Africa? Tackled from the perspective of the University of Zambia, the starting point for our research was to acknowledge that many ESD researchers in southern Africa, and possibly elsewhere, needed to develop competence in sustaining the perception that the majority of the region's population had areas of strength which merely needed to be identified and then empowered through research. In this regard, this paper reports on a research project which was configured with this assumption in mind; that is, what selected basic schools of Western Zambia were best at in environmental and sustainability education.

Wider Context of the Research

The research on Education for Sustainable Development (ESD) which my co-researcher and I conducted among three piloting basic schools of Western Zambia (used interchangeably hereafter with Western Province) between 25 and 27 October 2007 was itself part of a partnership with four other southern African universities. The research was influenced by various international, regional and national dynamics.

International and regional dynamics

Within the wider framework of the United Nations Decade of Education for Sustainable Development (2005–2014) the research programme aimed to contribute to the debate on how ESD could enhance the provision of quality education for all in southern Africa. Other international signposts included the role of ESD in contributing to the Millennium Development Goals (MDGs), the United Nations Literacy Decade, the African Union's Second Decade of Education in Africa and the Education for All initiative, as well as other related imperatives (cited in Lotz-Sisitka, 2007)

The research programme also made it clear that researchers needed to contribute to addressing the context of risk and vulnerability as well as that of opportunities facing the majority of the southern African region's population. In this regard, risky issues such as increasing levels of poverty, the HIV/AIDS pandemic, increased environmental degradation as well as issues of water scarcity, climate change and drought were to be tackled. However, perceptions of opportunity (e.g. use of natural resources, new technologies, local problem solving and availability of networking chances) among people needed to be explored too.

Important guidelines for the research programme emanated from the New Partnership for Africa's Development (NEPAD), especially the NEPAD Action Plan on the Environment (2003), the SADC Regional Indicative Strategic Plan (SADC RISPD) (SADC 2003) as well as the African Environmental Outlook (UNEP, 2006) report.

Engagement as a core value for universities

The research project was infused with the assertion by Barnett, Clark and Rees (2001) that even the most sophisticated university would be best advised to seek to deepen and widen its direct engagement with policy-makers, industry and commerce, local communities as well as the wider society. On their part, McDonald and Rotanachai (1994) suggest that there is an additional and less tangible role for universities located in developing-country contexts such as that of Zambia. According to them, universities in developing countries are focal points for science and education, as well as being key catalysts for modernisation and social change. Modernisation in this context means the resilience and adaptability of societies or institutions to survive and sustain themselves in the contemporary world. The term also refers to a situation where a society or institution is at the cutting edge of change, instead of being swallowed up or decimated by change. Universities are often involved in advocating causes, community action and holding an important position of trust in the community. They also have an ethical responsibility to meet community needs. These ideals influenced the interpretive, action-oriented strategic implementation plans (SIPs)¹ proposed for all the three participating basic schools in our research project.

The relatively low status of primary education in Zambia

Historically, primary (basic) education covering grades 1 to 7 in Zambia has suffered low professional status when compared to the secondary (high school) sector. In this paper, the term 'primary school' is used interchangeably with 'basic school'. Morale, incentives and motivation in primary education were generally lower than those in the secondary sector, often prompting talented teachers to abandon primary education in favour of secondary education. Through the three basic schools which participated in our research study, a conscious attempt was made to somehow address the said lowered status of primary education in Zambia, in general, and of primary school teachers, in particular. It was hoped that the full implementation of individual SIPs for each piloting basic school in our study would significantly contribute to a raised professional status of the teachers under discussion.

The intersection between school and university, and the central role of teacher education

Barth (1990) stated that the intersection of school culture and university culture is often a messy and quite lively place. He suggested that a number of issues often arise when schools and universities meet, such as who should decide when research is useful. More importantly, how successful can university academics be with their research in reaching and touching people working in and with schools? The research we conducted had to grapple with such illustrative issues.

Two principal factors influenced the decision to place primary-school teachers, including their head teachers, at the centre of our research process. The first source related to attempts to raise the professional status of primary-school teachers by actively involving them in the research process. The second factor is contained in the UNESCO's (2005) *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability*, which emphasises the central role of teachers in promoting change towards sustainability.

Theoretical Framing of the Research

The three key features described below constituted the theoretical framework for the research project.

Modes of perceiving and researching context

As a starting point to engaging in the research process, my colleague and I took note that, in southern Africa and possibly elsewhere, various modes of perception and, hence, research orientations existed among researchers of ESD, in general, and of the situation facing the majority of the region's population, in particular. We posited that all researchers of ESD and environmental education (EE) needed to develop competence in the four complementary modes of perceiving context illustrated in Table 1. What makes these modes of perceiving context as such is that they are metaphorical interpretations of context (herein used interchangeably with situation and condition). Interested readers are referred to Namafe (2006) for a detailed discussion of the wording 'enemy phenomenon'. Being metaphors, the terms 'enemy' and 'friend' often generate a battery of subsidiary concepts by which they operate and manifest their natures. In this regard, the collection of words in each mode represents subsidiary concepts of the root metaphor which lies deeply hidden. Interested researchers may investigate the collection of words in mode B which does not have words describing it.

The above four modes of perception are complementary, intertwined and inter-penetrate each other. It is very difficult to stay and operate only in one mode continuously. Many EE and ESD researchers have historically been bombarded with mode A; that is, operating under the assumption that the majority of the world's population is characterised by enemy-based conditions of risk and vulnerability. As researchers, my colleague and I suggest that southern African EE and ESD researchers need to take great care that equal stress was placed on the other three modes of B, C and D. In this regard, our research itself was deliberately structured in order to focus on reality as a friendly phenomenon full of opportunities and possibilities (i.e. mode D). We assumed that such possibilities and opportunities for environmental education

Table 1. The four complementary modes of perceiving and researching context

<p>Mode A: Context as an enemy phenomenon This generates concepts such as risk, vulnerability, threat, danger, disaster, pandemic, problem, victim, attack, win, lose, hatred, dominate, etc.</p>	<p>Mode B: Context as neither enemy nor friend phenomenon This generates concepts which are the subjects of future research by interested researchers.</p>
<p>Mode C: Context as both enemy and friend phenomenon This generates concepts such as ambivalence, caution, steadfastness, determination against odds, alertness, self preservation, etc.</p>	<p>Mode D: Context as a friendly phenomenon This generates concepts such as opportunity, cooperation, mutual respect, partnership, collaboration, reciprocity, care, love, respect, possibility, and so on.</p>

(Source: Namafe & Chileshe, 2007)

and ESD are unbounded and, hence, significantly represented the contextual orientation of our study. Other contextual and conceptual building blocks of our study include those outlined below.

The idea of service knowledge

The research was theoretically guided by the abstract concept of ‘service knowledge’, which comes from the fusion of ‘public service’ and ‘knowledge’ as key attributes under which universities like the university of Zambia operate. Service knowledge as an abstract concept is explained by Namafe (1992:215) as:

... either a material object (e.g. artifact, technology etc.) or non-material idea (e.g. belief, language, customary laws etc.) or even both, which has already been, or is being, purposely and carefully selected from academic, research or social activity and then processed further in readiness for its immediate or long term public relevance. Service knowledge in this case is conceived to be a product of a highly innovative and imaginative effort aimed at constructing something entirely new from academic, social or research activity which a given community can practically and directly utilise for its requirements.

It is important for readers to keep the above definition in mind because the Sefula SIP for the schools described in Appendix 1 represents the tangible form of ‘service-knowledge’. In other words, terms such as ‘networking’, ‘curio shop’ or ‘display cabinets’ appearing under items 1–18 of Sefula’s SIP were taken from their social context and applied to a strength in order to create a SIP. Moreover, such a SIP tangibly represents for this study the section which traditional research methodologies call the ‘interpretation’ or ‘analysis of results’. In short, the interpretation of results section is the SIP of this paper. Another vital component of our theoretical framing of the research is the concept described next.

The strengths model

As used in this paper, the concept of a ‘strengths model’ within ESD is adapted from UNESCO’s (2005:70–71) understanding that:

... in this approach, every discipline and every teacher can contribute to sustainability education ... to implement the strengths model. Begin by ensuring that educators and administrators understand the concept of sustainability and are familiar with its principles. Once they understand the concept of sustainability, educators from each discipline can examine the curriculum and school activities for existing contributions to ESD. Next, educators can identify potential areas of the existing curriculum in which to insert examples that illustrate sustainability or additional knowledge, issues, perspectives, skills or values related to sustainability. After identifying existing and potential contributions, leaders can create awareness among the educational community of these contributions to the larger ESD picture. Then, these contributions can be woven together to create ESD programmes that are taught overtly to pupils and students. In this approach, the synergistic strengths of combined educational disciplines can convey the knowledge, issues, skills, perceptions and values associated with ESD ... The combined pedagogical techniques and strategies of each discipline also contribute to an expanded vision of how to teach for creativity, critical thinking and a desire for life-long learning – all mental habits that support sustainable societies.

In the above understanding, a strength is considered to be a ‘finished product’ which a person, discipline or institution already possesses and which merely needs to be brought to contribute to some concerted teaching-learning undertaking with a view to achieving positive synergy. This is how the strengths model would have been used elsewhere. Our own approach in this research was slightly different. Firstly, rather than a teaching-learning undertaking, the strength model in our case was used in a research undertaking. Secondly, it entailed considering a strength as a ‘catalytic process’ which is not initially developed as a finished product but which calls forth various forms of synergy (e.g. networking and partnership, school-industry business links or research), as depicted in the numbered items 1–18 of the SIP listed at the end of this paper. The idea of drawing on these various synergies was to build on, extend and strengthen the very area of strength so identified in the first place. This is a new, dialectical understanding of the strength model which we brought to bear on our research (Namafe & Chileshe, 2008). In reviewing literature, we did not find what the weaknesses of the strengths model might be.

The Investigation Process

The research problem and purpose of the study

Our study was set within the general context of fostering ESD so that it enhances quality and relevance within all basic schools of Western Zambia. But, as stated in the background to the study, basic Schools in Zambia largely remained untouched by cutting-edge developments in EE and ESD. Many such schools had no idea whatsoever about EE and ESD because they had over the years been teaching environmental science (ES). In this regard, many teachers would tend to consider EE and ESD as irrelevant and adding no quality to their existing educational practice. Such teachers were used to teaching curricula that were compartmentalised, examination-oriented and inflexible (MoE, 2003). In short, many such teachers would tend to

see no value at all in EE and ESD. This was the crux of the research problem regarding EE and ESD in many Zambian basic schools.

Put differently, our research saw great need to institutionalise increased participation of Zambian basic schools and their local communities in the sustainable development of the country in order to alleviate poverty and achieve equitable development. In line with the structure outlined in Table 1, our research approach to engaging basic schools in sustainable development was premised on the fundamental idea that such schools were often surrounded by friendly opportunities of all types and that such schools merely need to identify and access innovatively through their identified areas of strength. For instance, if Sefula basic school choose 'herbs and indigenous foods' as its area of strength, the school may come to discover that there are numerous partners, business firms or networks in Zambia and internationally with which the school could work in order to develop its pupils, teachers and communities. This is the essence of the context of such a school being friendly. The Zambian Ministry of Education seem to have acknowledged this possibility; hence the formulation of guidelines for the localised curriculum for all basic schools (MoE, 2005).

As researchers, we also acknowledged that there was a clear lack of knowledge and understanding of the complexity, depth and breadth of processes required to promote, empower and unlock the potential capacities of basic schools and their immediate local communities in order for them to grow, be sustainable and contribute to the economic growth of Zambia. In our view, the SIP of Sefula basic school illustrated in Appendix 1 embodies the processes cited above. It contains energies focusing on ESD which merely require unlocking through active support and implementation.

In view of the research problem described above, our research sought to address the following broad research question: How can environment and sustainability education programmes contribute to the quality and relevance of education for all in Zambia? The study was guided by the following sub-question: How can we educationally sustain what selected Zambian basic schools of the Western province are best at as a means of mainstreaming environmental and sustainability education in such schools?

The illustrated SIP for Sefula basic school in Appendix 1 addresses this particular question. By actively implementing its SIP, Sefula personnel would, in effect, be mainstreaming environment and sustainability so that such issues are not sidelined or berated as being insignificant. This is what we mean by the phrase 'mainstreaming environment and sustainability programmes'.

Specific research questions of the study included the following: Within their localised context, how could schools of Western Zambia involved in this pilot research make use of their identified areas of strength as entry points to environment and sustainability education in order to:

- Promote cultural traditions relevant to their localities?
- Promote progressivism (i.e. being at the cutting edge of things and current within a globalised setting)?
- Innovate new things or ways of doing?
- Address environmental problems of their immediate localities (e.g. poverty, health issues or destruction of the environment)?

- Establish relationships among all the above four items as a way of promoting the development of the respective basic schools, their local communities and surroundings.

As explained earlier, the above list of specific questions is directly linked to schools operating under mode D shown in Figure 1, where such schools can actually develop themselves under the agency of their strength. Details of how they can develop themselves through their strength are fleshed out in the SIP presented later in this paper. For instance, they may apply to donors to sponsor various aspects of their SIP in line with such donors' interests or financial capabilities. In other words, mode D operating through the SIP is clearly asking for a more active than reactive approach from schools so that they can tap into the numerous opportunities surrounding such schools.

The concepts of progressivism and modernisation as used above are, admittedly, hotly contested. In this study, their meaning refers to schools being drivers rather than followers of change through their identified strength. The concepts also refer to adaptability, where school communities do not rigidly and stubbornly defend tradition even in the face of progressive developments.

Research methodology

In line with the points made in the foregoing subsections of this paper, the general research methodology of the study needed to have the following special attributes which may not be commonly found in many studies. The research methodology of the study:

- Manifestly demonstrated an active engagement of the University of Zambia (UNZA) to the public domain of Zambia's primary education system, widening and deepening the university's level of involvement with the community of basic education in the piloting schools.
- Was practical as well as theoretical, the former implying the requirement to address society's real problems and issues.
- Was focused on mutual gains and equality in partnership between the UNZA, basic educators and their immediate localities.
- Was designed to be modernising and engender social change.
- Should have embodied elements of the mission of UNZA; that is, teaching and training as well as research and public service, on one hand, and that of basic schools who are localising their curricular, on the other.
- Needed to be sustainable in the immediate, short and long term so that it is long lasting.
- Needed to actively involve all teachers, community members and pupils, including head teachers, in the implementation process.

A qualitative research design driven by the 'strengths model' was applied and was, in turn, operationalised through a participatory research approach involving the inter-penetration of the action and interpretive research paradigms. The primary population focus was comprised of all basic schoolteachers of Western Zambia (including head teachers), their pupils as well as

community members adjacent to their respective schools. Only three purposively sampled basic schools participated in the investigation. The schools came from three different zones based on their location in the floodplain, peri-urban and forested upland zones. Schools from these zones included the Lealui (flood plain), Sefula (peri-urban) and Nangula (forested upland) basic schools. What risk and opportunity means in each of these zones would differ from school to school. However, the focus of our study in this case was to explore the type of opportunities which each school could carve out of its identified area of strength.

When a five-member research team (consisting of two university researchers, the provincial inservice provider for basic schools, the caretaker manager of a provincial EE centre and one teacher trained under the SIDA-sponsored international training programme) visited each participating basic school, six steps towards engaging the schools in some discussion were followed. Step one involved official introductions of the research team. Step two entailed interpretation of the 'strength model' by using the indigenous Lozi language of the area. In step three, four discussion groups at each school were asked to critically choose only one area of strength with reasons. Each of the four discussion groups reported what they had agreed upon in step four. In step five, plenary debates and discussions supported by arguments took place regarding what should finally be the one selected area of strength for each respective school. In all cases, such discussions proved to be very heated, critical and sometimes, acrimonious. Democratic casting of votes often helped to resolve the debates. Official closing remarks and charting of the way forward by the principal researcher formed step six. The voting results at each school were as follows:

Lealui Basic School

- Grand workshop (*ndu ya lisebelezo*) – 18 votes
 - Clay moulding – 9 votes
 - Fishing – 14 votes
 - Reed handicrafts (*kuluka miseme*) – 6 votes
- Total – 47 votes**

Nangula Basic School

- Carpentry handicrafts and artworks – 40
 - Agriculture – 23
- Total – 63 votes**

Sefula Basic School

- Indigenous Lozi foods (*lico za sizo*) – 12
 - Mango – 6
 - Indigenous Lozi herbs (*milyani ya sizo*) – 8
 - Indigenous Lozi foods and herbs
(*Lico ni milyani ya sizo*) – 29
- Total – 55 votes**

As used above, the term ‘grand workshop’ refers to a large building serving multiple functions at the same time in relation to various flood-plain objects, services and solutions of Lealui basic school. As mentioned above, Lealui basic school is situated in a flood-plain environment.

After the above research findings, each school worked in consultation with researchers from the university to design a detailed and holistic SIP based on their chosen areas of strength as revealed from the votes cast above. Such a SIP represents a tangible form of service knowledge, as defined earlier. The next subsection presents the SIP of Sefula basic school based on 'indigenous Lozi foods and herbs'. The stage of designing SIPs based on their chosen strengths for the three schools goes beyond, and is different from, the usual stage of ‘discussion of research findings’ common to many research reports. This SIP is something unique developed by the researchers. The idea here was to create something of practical value to the schools in their attempts to implement ESD based on their chosen strengths. Except for the concluding remarks, all the parts below (including the table showing numbered items 1-18) have been taken from the agenda of Sefula basic school. Due to space constraints, it was not possible to include the SIPs of Lealui and Nangula basic schools here. The template and wording of the Sefula SIP is the same as that for the other two schools, except that each school would insert their respective strengths wherever Lozi ‘herbs and foods’ are mentioned.

The Sefula Basic School SIP

Background

This SIP is set within the Public Service Reform Programme which states that all Zambian government ministries, departments and institutions need to develop strategic plans as a basis for improvement of service delivery. This therefore, represents a significant shift in management styles from reactive to proactive and from short-term to long-term planning.

In the case of Sefula basic school, this SIP is for the school to implement a localised curriculum in EE and ESD focusing on the chosen ‘strength of Lozi herbs and traditional foods’. The approach taken in this SIP is educational; that is, involving pupils, teachers and community members as equal participants in developing their locality, while learning about it. By stating that learners are partners with parents and teachers in this situation we refer to the issue of participation. Each of these categories of people is presented with the same freedom and openness to render their respective contributions to developing their school.

This SIP implements policy directives from the Zambian Ministry of Education’s (1996) *Educating our Future: National Policy on Education* as well as the Ministry of Education’s (2005) *Guidelines for the Development of the Localized Curriculum in Zambia* and the Ministry of Education's (2001) *Teacher’s Curriculum Manual*.

Overview of Sefula basic school

Sefula basic school is situated 620km west of Lusaka and 16km south of Mongu town along the Mongu–Senanga road on the edge of the Barotse Plain in the Western Province of Zambia. The school is located in the habitat environment of a typical wetland of the Barotse Flood Plain and the dry forest region (Makanda). Sefula basic school was established in 1885 by Parish

Missionary Society missionaries and is one of the oldest schools in Zambia. It was one of the first schools to introduce formal education boarding for boys and girls and established a teacher training college – today known as the David Livingstone Teachers' College.

Sefula basic school proudly attempts to revive, promote and strengthen the Lozi culture and tradition, which is composed of five main Luyana groups of Subiya/Totela, Nkoya/Mbunda, Makwamashi/Nyengo, Kwandi/Mbowe and the Kwangwa. The Western Province of Zambia has a number of other ethnic groups constituting the Lozi such as the Shanjo, Toka, Luvale, Mbukushu, Lucazi and Chokwe. This SIP draws human attention to the *Luyana/Silozi traditional herbs and foods*. The approach taken to focus human attention on this environmental attribute makes the school the only one of its kind in Zambia (and possibly in Africa and the rest of the world) to consciously bring human attention to this particular cultural attribute.

The vision statement, mission, aims, specific objectives and SIP (Appendix 1) developed by the Sefula school as part of the SIP process listed in Box 1.

Box 1. Sefula basic school

Our Vision

A school community that drives its own sustainable development through the agency of *what it is best at*.

Our Mission

We shall work to ensure that members of the public and communities come to appreciate what our school community is best at. We shall particularly use EE and ESD, working through the identified strength to:

- Promote cultural traditions in the locality of the school (internal factors).
- Innovate new things.
- Modernise our lifestyles and approaches (from external factors).
- Address environmental problems found in the locality of the school.
- Generate positive relationships among the four items stated above.

Aim

The aim of this SIP is to introduce and localise EE and ESD in our school community in a manner which anchors such effort on our identified area of strength; that is, of traditional Lozi herbs and indigenous foods.

Specific Objectives

- To introduce EE and ESD at our school.
- To introduce the concept of 'what schools are best at' in our school.
- To introduce the idea of how to localise 'what schools are best at' in the EE curriculum of our school.
- To generate sustainable development at our school through all the above-mentioned elements.

As shown in Appendix 1, the SIP of the Sefula school is a comprehensive plan covering educational, communication, research, methodology, management and partnership aspects as well as some analytical dimensions relating to the strengths of the school. The plan considers cultural/traditional dynamics as well as progressive/modernising aspects, and relates these to innovation and sustainability and environmental education, providing a complex yet innovative framework for enhancing educational quality. What remains untested at this point, however, is the *actual* contributions of this SIP process to educational quality and relevance. This would be the subject of ongoing research and development work as indicated by the framework of the research programme (as outlined above).

Concluding Remarks

The SIP, as presented in Appendix 1, belongs to what this research terms ‘service-knowledge’. Service knowledge involves a lot of innovation and imagination.

As researchers, we noted that each basic school needed to construct for itself a robust SIP (as illuminated in the Sefula school example in Appendix 1) based on what they themselves had chosen as their area of professional and cultural strength. In this regard, we, in our dialogues with the school, built into their strength an assemblage of up-to-date professional processes which have the potential to contribute to sustainable development of the respective basic schools and their immediate localities. A close look at Sefula’s SIP reveals processes such as networking, curriculum development, use of display cabinets, curios shops, research, as well as publications, comparative education, audio-visual programmes and so on – all dwelling on the selected strength of ‘Lozi indigenous foods and herbs’. These themes (processes) have been purposely and carefully selected and appropriated from their ordinary natures and then processed further in readiness for their practical utility in EE/ESD in the context of the chosen professional strength of ‘Lozi indigenous foods and herbs’. It is processes such as these which (we propose) are required to promote, empower as well as unlock the potential capacity of basic schools and their localities in order for them to grow, be sustainable and contribute to the economic and sustainable growth and development of Zambia. At the time of writing this paper in 2008, the head teacher at Sefula basic school had already sent out applications for sponsorship of their SIP. Various potential sponsors will be free to select specific objectives from the SIP for sponsorship in line with their wishes, ability or agenda. They are not required to sponsor the whole SIP in totality if funds do not allow. There are also many aspects of the SIP that can continue without funding. As Sefula basic school implements its SIP it is likely to become more active than reactive, tapping into numerous opportunities at its disposal. This is how Sefula has planned in terms of concrete ideas around its SIP (as illuminated in Appendix 1). Tapping into various sponsors, experts and networking partners brings out the attribute of participation of various actors in the affairs of the school. In that manner, the SIP of Sefula basic school, and indeed those of other schools mentioned above, will become potential sites of research in ESD that is framed within positive metaphors.

Other potential areas of strength (i.e. those strengths voted for by some people, such as ‘Mango’ in the case of Sefula or ‘Clay moulding’ in the case of Lealui) have been thought about

too. In fact, in the group debates from each school (except for Nangula) there was a deliberate effort to select an all-embracing strength. For instance, the strength of Sefula embraces all the other items which were voted for by other people. Similarly, for Lealui the grand workshop building will house all flood-plain objects voted for by other people, such as fishing, clay moulding and reed handcrafts. Item 16 of the SIP is also specifically oriented towards including the links between the main strength being looked at and other (related) strengths.

The potential exists for the strengths model to be adopted by the Zambian Ministry of Education as a practical tool through which basic schools could localise their curricular. This study has demonstrated that all basic schools in Zambia have the potential to identify and focus on their strengths, a process which simply requires educational competences among environment and sustainability researchers and practitioners to explore them.

In this study, the research project aimed to open the spaces for such work to sustain the best attributes of each school, which will (we anticipate) in turn, integrally sustain relevant cultural traditions, innovation as well as modern ideas and an ability to solve localised environmental problems through the strength. As mentioned above, the outcomes of this process still need to be established through further research. However, this study has set a conceptual framework for future research, and has opened the space for a vision of EE that reaches beyond a dominance of negative metaphors. In short, we are proposing that to use the strengths model within the context of service-knowledge to implement environmental and sustainability education in basic schools anywhere is possible, worthwhile and a way for the future. Further research is needed to reflexively review this methodological orientation. For now, this small scale research is charting a new path for studying questions of quality and relevance in the context of environment and sustainability-related education in southern African contexts.

Notes on the Contributor

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Endnote

1. A SIP is a list of actionable topics addressing sustainability issues which a given school can implement on a long-term basis of, say, five years when this is made possible through funding or other facilitative means.

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Appendix 1. The strategic implementation plan (SIP) of Sefula School

Item	Cultural Tradition	Progressing/Modernising	Innovating	Addressing Local Environmental Problems
<p>1. Educational aspects</p>	<ul style="list-style-type: none"> • Conduct an in-school intensive training in EE and ESD for all the teachers. • Train all the teachers in action competence for future application to aspects of their chosen strength. • Devise a detailed localised curriculum for the school on Lozi traditional herbs and foods incorporating all aspects of this SIP for use in grades 1-9. • Make each teacher contribute the best curriculum ideas on Lozi herbs and traditional foods based on his/her subject area for a grade level of his/her choice. • Identify people from the community having skills, knowledge, ethical values and language norms on Lozi herbs and foods, and let them contribute to the creation of the localised curriculum. • Devise a staff development programme for teachers, school managers and relevant community members based on Lozi herbs and foods. 	<ul style="list-style-type: none"> • Create a platform where the benefits and positive aspects of traditional Lozi herbs and indigenous foods are disseminated by pupils, teachers and community members to the public. • Empower pupils, teachers and community members through entrepreneurship training (business education) so that they sustain themselves through Lozi herbs and indigenous foods. • Continue raising the awareness of the public on the value and importance of traditional Lozi herbs and foods to the modern life. • Invite institutions outside the school which could benefit from traditional Lozi herbs and indigenous foods to come and see the displayed items in the school. 	<ul style="list-style-type: none"> • Support pupils, teachers and community members to innovate various aspects of Lozi herbs and traditional foods by applying to it any of the following measures: <ul style="list-style-type: none"> - Modifying the strength - Strengthening it - Questioning the strength - Removing aspects from it - Adding aspects to it - Improving the strength - Changing the strength - Importing elements from.... • Creating the following: <ul style="list-style-type: none"> - Pupil projects - Teacher projects - Community projects • Creating new aspects of the strength. • Deleting aspects of it. • Creating future vision around the strength. • Creating school competitions around it. • Making the strength enterprising. • Critiquing the inherited perception about the strength. • Encouraging debate around the strength . 	<ul style="list-style-type: none"> • Make an inventory of local health and dietary problems and then match these to solutions which can be provided by Lozi indigenous herbs and foods. • Pupils, teachers and community members to dramatise problems faced by sellers of Lozi herbs and traditional foods. • Formulate teacher, pupil and community projects of Lozi herbs and traditional foods aimed at sensitising nearby communities on the need to sustainably conserve environments on which Lozi herbs and traditional foods centrally depend.

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	<ul style="list-style-type: none"> Develop and maintain school community relationships based on Lozi herbs and indigenous foods. Establish a school committee to spearhead the development of Lozi Herbs and Foods. 	<ul style="list-style-type: none"> Enrich the school collections on Lozi herbs and foods with similar objects and items made for the modern life. 	<ul style="list-style-type: none"> Abandoning aspects of the strength. Replacing aspects of the strength with... Inviting experts on strength to give a talk. Researching aspects of the strength. 	
2. Display cabinets showing varieties of the strength	<ul style="list-style-type: none"> Raise funds to construct durable display cabinets to store Lozi herbs and indigenous foods. Engage an expert curator to preserve all the collected items on Lozi herbs and indigenous foods. 	<ul style="list-style-type: none"> Invite a business education expert to come and train pupils, teachers and community members on how best to market and popularise Lozi herbs and foods. 	<ul style="list-style-type: none"> Mixing local, regional, provincial and global elements. 	<ul style="list-style-type: none"> List all the known local problems related to Lozi herbs and traditional foods and then investigate varieties of Lozi herbs and traditional foods which could address such problems.
3. Currio shop	<ul style="list-style-type: none"> Raise funds to establish a currio shop at the school for Lozi herbs and foods. Train a currio seller on these items. Raise public awareness of the currio shop at the school. 	<ul style="list-style-type: none"> Build the capacity of pupils, teachers and community members to investigate ways and means of penetrating modern markets and people's lifestyles in favour of Lozi traditional herbs and indigenous foods. 		<ul style="list-style-type: none"> Modify, strengthen and improve Lozi herbs and traditional foods in order to export them to places beyond the school and country.
4. Research	<ul style="list-style-type: none"> Support teachers, pupils and community members for them to conduct studies on Lozi herbs and traditional foods. Create a platform where researchers of herbs and foods from other places outside the school and province report their research findings. 			<ul style="list-style-type: none"> Utilise the internet to enrich aspects of Lozi herbs and traditional foods. Lobby relevant decision-makers to assist in addressing local problems faced by pupils, teachers and community members in connection with Lozi herbs and traditional foods.

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5. Publications	<ul style="list-style-type: none"> Encourage teachers to be giving research projects such as homework to their pupils on Lozi herbs and foods. Investigate local environments which provide Lozi herbs and foods with a view to preserving such environments for future generations. Conduct a public display to report on research conducted on Lozi herbs and traditional foods to members of the public. 	<ul style="list-style-type: none"> Strengthen pupils to investigate and take action concerning the use of Lozi herbs and foods in modern living. 		<ul style="list-style-type: none"> Devise ways of disseminating Lozi herbs and traditional foods through publications to other parts of the country and beyond. Investigate and revive lost skills, values and knowledge related to Lozi herbs and traditional foods and then publish teaching/learning materials on them.
	<ul style="list-style-type: none"> Source funds to publish teaching/learning materials on aspects of Lozi herbs and foods. Encourage teachers, pupils and community members to donate and make a sustained collection of publications relating to traditional Lozi herbs and foods. Make a public appeal to community members of the province and beyond it for them to consider pledging donating publications relevant to Lozi herbs and foods. 	<ul style="list-style-type: none"> Disseminate the value and importance of traditional Lozi herbs and foods through the production and publication of various teaching/learning materials such as pamphlets, newsletters, handbooks, chats, booklets, etc. Approach relevant environmental and educational institutions such as ECZ, WWF, PANOS or the CDC in order for them to publish manuscripts on Lozi herbs and foods. 		

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<p>6. Comparative data with other similar strength</p>	<ul style="list-style-type: none"> • Identify how Lozi herbs and foods are featured among the five Luyana traditions of the subiya/tolela, the Nkoya/Mbunda, the Makwamashi/Nyengo, the Kwandi/Mbowe and the Kwangwa. • Devise ways of disseminating the Luyana heritage on Lozi herbs and foods to communities and the public. • Describe royal approaches and policies to Lozi herbs and foods by the Barotse Royal Establishment (BRE). • Describe royal approaches and policies to Lozi herbs and foods by a nearby royal establishment to the school • Record how local ethnic groups to the school practice the use of herbs and traditional foods. 	<ul style="list-style-type: none"> • Make a collection of data and information printed from any part of the world on indigenous herbs and foods. • Raise funds to invite specialist experts on indigenous foods and herbs from any part of the world to come and share their experiences with school pupils, teachers and community members. 		<ul style="list-style-type: none"> • Promote mutual respect for culture and tradition between the different ethnic groups of Zambia so that they understand each other's values for indigenous herbs and traditional foods (as a way of resolving potential ethnic conflicts).
<p>7. Identifying and promoting unique aspects of the strength</p>	<ul style="list-style-type: none"> • Identify aspects of Lozi herbs and foods which are only found among the Lozi and nowhere else. • Provide a platform where such unique aspects are disseminated to members of the public 	<ul style="list-style-type: none"> • Conduct an investigation of how indigenous herbs and foods of selected communities outside Barotseland are different from those familiar to Sefula (what makes them unique). 		<ul style="list-style-type: none"> • Identify and make unique aspects of Lozi herbs and traditional foods as a source of entrepreneurship (business) so that they become a way of reducing poverty among pupils, teachers and community members.

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8. Audio-visual programmes	<ul style="list-style-type: none"> Encourage local musicians near the school to compose songs to promote local Lozi herbs and foods. Raise funds to make a video showing various aspects of Lozi herbs and traditional foods to be used for educational purposes when visitors come to the school. Make linkages with relevant filming agencies for them to come and film aspects of Lozi herbs and foods to be used for educational purposes. 	<ul style="list-style-type: none"> Make a collection of musical tapes, videos or documentaries focusing on indigenous foods and herbs from other parts of the world. Challenge Sefula basic school pupils, teachers and community members to critique the material on the musical tapes, videos or documentaries in relation to their own way of life. 		<ul style="list-style-type: none"> Make use of the local radio station or Zambia National Broadcasting Corporation to award winners of an essay-writing competition on how Lozi herbs and traditional foods can be used as a means to sustainably conserve and protect the local environment of the school.
9. Entertainment and celebration	<ul style="list-style-type: none"> Support pupils, teacher and community members to freely entertain themselves and the public based on Lozi herbs and traditional foods. Build capacity for pupils teachers and community members to innovate songs, poems, drama and other forms of entertainment incorporating Lozi herb and foods. Select one special day in the school calendar to display and celebrate the day of Lozi herbs and traditional foods. Create a platform for raising pupils' voices on Lozi herbs and foods. 	<ul style="list-style-type: none"> Challenge pupils, teachers and community members to create things to entertain visitors to the school out of Lozi herbs and foods. Make links with established local musicians and bands in order to create entertainment based on Lozi herbs and foods. Raise funds to support the conduct/composure of entertainment. 		<ul style="list-style-type: none"> Support pupils, teachers and community members to create plays aimed at sensitising nearby community members on dangers of conflicts and negative impacts of neglecting to use Lozi herbs and traditional foods. Develop plays, drama or poems on actions which must be taken to reduce the negative impact of foreign investment into the Lozi herbs and traditional foods.

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<p>10. Gift packs based on the strength</p>	<ul style="list-style-type: none"> • Generate informed debate among pupils, teachers and community members on how best the school could produce gift packs for visitors to the school based on Lozi herbs and foods. • Explore ways and means by which the school could be strengthened in its desire to share gift packs on Lozi herbs and traditional food with visitors to the school. 	<ul style="list-style-type: none"> • Generate debate among pupils, teachers and community members on modernising Lozi herbs and foods in form of gift packs for visitors to the school. 		<ul style="list-style-type: none"> • Provide a platform for pupils, teachers and community members to discuss ways and means of addressing foreign arrivals in the locality of the school who are depleting Lozi herbs and traditional foods.
<p>11. Field trips organised by the school</p>	<ul style="list-style-type: none"> • Support educational field trips for pupils, teachers and community members for them to exchange ideas on Lozi herbs and traditional foods with other learning institutions within Barotseland and beyond it. • Generate field reports from such tours for storage in the school. • Strengthen the sharing of information from such tours with the rest of the pupils, teachers and community members. 	<ul style="list-style-type: none"> • Capacitate pupils, teachers and relevant community members to undertake field trips to places with similar indigenous herbs and foods within Zambia or beyond. • Invite pupils, teachers and community members from places with similar indigenous foods and herbs to visit Sefula basic school for exchange of ideas. 		<ul style="list-style-type: none"> • Organise a school educational field trip involving pupils, teachers and community members aimed at investigating how other learning institutions outside the school, province or country solve problems related to indigenous herbs and traditional foods.

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12. Photos of VIPs and other visitors to see the strength	<ul style="list-style-type: none"> • Officially launch this SIP on Lozi herbs and foods. • Invite relevant high-ranking officials to the launch and take photos of the event for future use by the school. • Make it a practice that all high ranking officers and visitors to the school are photographed and such photos kept in the school. 	<ul style="list-style-type: none"> • Keep a record of photos of high-ranking visitors to the school coming to see Lozi herbs and foods. 		<ul style="list-style-type: none"> • Capacitate one photographer to take photos on various problems surrounding Lozi herbs and traditional foods for the attention of relevant high-ranking officials in the Ministry of Education or beyond it.
13. Networking and partnership	<ul style="list-style-type: none"> • Identify all relevant public, private or community organisations with an interest in Lozi herbs and traditional foods and apply to networks and partner with them for the mutual benefit of educating pupils, teachers and community members. • Create a twinning arrangement between your school and an international or regional school based on the idea of indigenous herbs and foods. • Fundraise from well-wishers towards the construction of a herbal pharmacy and traditional food centre. • Identify a suitable architect and constructor of such a building. 	<ul style="list-style-type: none"> • Continue making networks and partnerships with learning institutions, public institutions or private institutions who have a keen interest in indigenous herbs and traditional foods. 		<ul style="list-style-type: none"> • Source funds to buy computers which would facilitate internet connections and networking with similar minded schools focusing on indigenous herbs and traditional foods. • Create partnerships with well-established research institutions such as UNZA, Mwekera Forestry College or other institutions dealing with indigenous herbs and traditional foods so that local problems faced by the school regarding Lozi herbs and traditional foods are mutually addressed.

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14. Advertisements	<ul style="list-style-type: none"> Run regular advertisements on Lozi herbs and foods through the local radio stations, local musicians or print media. Raise civic awareness about the importance of conserving the environments which provide Lozi herbs and traditional foods through adverts. Create platform for raising the voices of Sefula local communities, pupils and teachers concerning what they produce in form of Lozi herbs and foods. 	<ul style="list-style-type: none"> Rely on regular advertisement of Lozi herbs and indigenous foods so that public awareness of the value and importance of the strength is appreciated in modern life. 		<ul style="list-style-type: none"> Make a list of all problems related to Lozi herbs and traditional foods and then advertise to well-wishers to assist in solving them.
15. School open days	<ul style="list-style-type: none"> Display the best traditional Lozi herbs and foods made by pupils, teachers and community members on a school open day. Invite relevant visitors to the school open day. 	<ul style="list-style-type: none"> Make regular use of school open days so that pupils, teachers and community members display the best items of Lozi herbs and indigenous foods to the public. 		<ul style="list-style-type: none"> Establish a special school open day to display all known problems and hardships related to Lozi herbs and foods for the attention of members of the public .
16. Key things centrally affecting strength	<ul style="list-style-type: none"> Investigate and identify things on which traditional Lozi herbs and foods centrally depend for their sustenance. Find ways and means by which such key things could be preserved and protected. 	<ul style="list-style-type: none"> Conserve key things or environments on which Lozi herbs and traditional foods depend so that they are preserved for future generations. 		<ul style="list-style-type: none"> Formulate teacher, pupils and community projects to tackle all threats to the sustenance of Lozi herbs and traditional foods.

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17. Management issues	<ul style="list-style-type: none"> • Create a policy in the school focusing on traditional foods and herbs. • Make an organisational structure in the school where each and every teacher takes care of aspects of Lozi herbs and foods. • Support continuing professional development of teachers, school managers and relevant community members based on traditional Lozi herbs and foods. 	<ul style="list-style-type: none"> • Conduct regular monitoring and evaluations of the implementation of all aspects of this SIP. • Engage outside evaluators if need be in order to strengthen and improve the SIP. 		<ul style="list-style-type: none"> • Raise civic awareness among key decision-makers regarding problems faced by local dealers in Lozi herbs and traditional foods.
18. School – business industry links	<ul style="list-style-type: none"> • Create dialogue with relevant business friends and industries around supporting Lozi herbs and foods. • Advocate and source support from relevant business friends and industries for mutual gain based on traditional Lozi herbs and indigenous foods. 	<ul style="list-style-type: none"> • Sustain regular contact with relevant business and industries for the improvement and strengthening of this SIP so that both the school and industry/business firms benefit. 		<ul style="list-style-type: none"> • Invite relevant business houses and industries to your school and then display to them all the known hardships and problems faced by pupils, teachers and community members dealing in Lozi herbs and traditional foods.