The Relation of Mainstreamed Environmental Education to the Modern Schooling System in Zambia

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Chapter 4
The Relation of Mainstreamed Environmental Education to the Modern Schooling System in Zambia

Charles Namafe and Manoah Muchanga

This chapter provides insights into issues related to mainstreaming environmental education (EE) between and across institutions. It is noted that EE would greatly be assisted in its effort to produce impact in society if its practitioners had access to principles of how best to mainstream the fi eld across institutions. Unfortunately, no such principles that fi t every situation exist at present, thereby perpetuating challenges of mainstreaming EE across institutions. The chapter challenges readers to open the 'black box' of mainstreaming and to share issues and experiences. International readers and those struggling with mainstreaming EE in higher education institutions will find this chapter illuminating.

The importance of environmental education (EE) no longer escapes anyone – according to Ziaka (2000) writing about the features and educational implications of environmental education in France around the year 2000. Ever since the early 1970s, and especially since 1975, with the launching by UNESCO of the International Environmental Education Programme (IEEP) at the Belgrade Conference, given the conceptual thinking on this type of education as well as the learning from numerous pilot projects, of multiple proposals of activities and teaching aids of all kinds, one might think everything concerned with EE was heading for success! Ziaka mentioned, however, that in most countries including Zambia, real integration of EE into the educational systems is still lacking. In a rather forthright title – *The Failure of Environmental Education* – Saylan and Blumstein (2011 , p. 1) asserted: Environmental education has failed to bring about the changes in attitude and behaviour necessary to stave off the detrimental effects of climate change, biodiversity loss and environmental degradation that our planet is experiencing at an alarmingly accelerating rate. and strategising. It denotes the existence and relationship of two entities, that is, a mainstreamed EE scenario on one hand and a non-mainstreamed EE scenario on the other.

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Such a condition provides a contextual background to this chapter. In this regard, the main argument of this chapter is that, during its development, EE has to a large extent failed to permeate the surrounding mosaic of the schooling system partly because EE has preferred to concentrate on the comfort zones of various educational institutions (refer, for instance, to Chapter 3 of UNESCO's (2005) *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* that describes 'initiatives taken by members of the international network' referring to sustainability). To appreciate this point, let us first define what we mean by the term 'mainstreamed EE'.

4.1 Mainstreamed Environmental Education

Environmental education may be mainstreamed at various scales and levels as diagrammatically shown below. The University of Zambia will serve as an example. In Fig. 4.1 , the process of mainstreaming EE in any institution starts with an individual person, i.e. one termed a change agent for our purpose. Such a person could be a pupil, school teacher, college lecturer, university lecturer, civil servant, nurse or a medical doctor. It is vital to verify the extent (scale) of mainstreaming of EE even within a mental scheme of an individual, that is, is it full-scale or partial mainstreaming? For instance, a person may conceptually mainstream EE in his/her natural mental scheme only and neglect to mainstream it fully into the economic, social and political scheme of that same individual. Such a person, for instance, in only focusing on the natural dimension may love wildlife and, hence, maintain a game ranch. But since the other dimension of his or her mental schema is insufficiently mainstreamed, he may not participate politically in the affairs of environmental conservation, or he may socially be so self-centred and selfish that he does not care about the welfare of his neighboring communities. In short, full-scale mainstreaming of EE within individuals should cover all major dimensions of a person's mental schema, that is, the natural, economic as well as the social and political. In the case of the University of Zambia, EE has to a large extent been mainstreamed at levels from 1 to 5, as shown in Fig. 4.1 , especially within the context of the School of Education. But the scale of such mainstreaming would require systematic verification for each stage from 1 to 5. As shown in Fig. 4.1 , the letter 'B' can be any institution such as a school, a college, a university, a hospital, a nongovernmental organisation or an industry. Such institutions would have layered units or departments within which EE requires to be mainstreamed. It may be that EE is mainstreamed successfully within one section or department of an institution

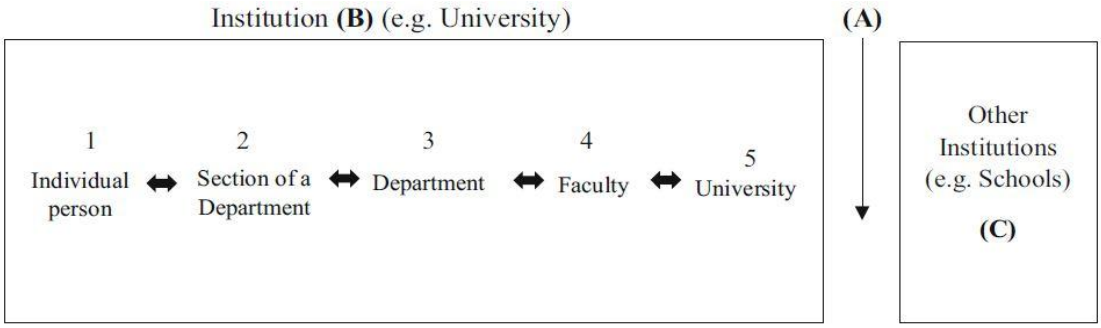

Fig. 4.1 Mainstreaming environmental education at different institutional levels

and not in other departments. Alternatively, it may be that EE is mainstreamed well in one type of institutional activity (e.g. teaching) and not in the other (e.g. research). In fact, even within a single institution, there will be a need for individual change agents at each level (e.g. department or section) in order to ensure successful EE mainstreaming.

In other cases, only individual persons represented by the number 1 in the diagram may have mainstreamed EE within their mental scheme, and not in other levels of the institution represented by numbers 2–5 in the diagram. Such individuals would go about attending conferences, processing emails or publishing on matters to do with EE while leaving levels 2–5 of an institution untouched and, hence, 'unmainstreamed'. Certificates of recognition and other forms of awards in EE may be awarded to such individuals as well. They may also be actively conducting research in EE, including disseminating their research findings in different channels. Figure 4.1 further shows that the direction of mainstreaming EE in B can be from an individual change agent (1) to the whole institution (5), or vice versa. The above account of mainstreaming EE also applies to the other levels of an institution where, for instance, a faculty (i.e. number 4) may actively mainstream EE by way of research, publications, conference participation or even winning awards – but other levels of the institution may remain unaffected and, hence, unmainstreamed (i.e. numbers 1, 2, 3 and 5). In this regard, there is still room to interrogate the levels of mainstreaming even at B. Apart from 1, further insights on the process of mainstreaming at 2, 3, 4 and 5 need to be opened up and issues shared at these levels within C. Recommended literature on such issues can be found in the *Southern Africa Journal of Environmental Education* ,volume 26 (paper by Namafe, 2009) and volume 29 (paper by Chileshe & Namafe, 2013 and paper by Shumba & Kampamba, 2013). Namafe (2005) in the *Monograph of Cases of Course Development in Environmental and Sustainability Education in southern Africa* provided rich discussion on some of the likely hurdles, opportunities and challenges of EE programme developers trying to make a positive contribution to their academic institutions in developing countries. This paper epitomises the struggles of mainstreaming EE at 'B' as presented in this chapter.

What next regarding a situation where an institution, such as the University of Zambia in this case, has largely mainstreamed all its levels from 1 to 5? The answer to this question is examined next.

4.2 Cross-Border Mainstreaming of EE

The process of winning over institution ‘C’ by an individual or institution from ‘B’ is hereby called ‘crossing over’. The University of Zambia has successfully devised and mainstreamed an EE curriculum within its comfort zone represented by numbers 1–5 in Fig. 4.1 . The next logical step in its mainstreaming agenda is to cross borders in order to win other institutions (i.e. represented as C) to the cause of EE. The intangible space or interface between the University of Zambia (UNZA) and other institutions is real and is represented as A in Fig. 4.1 . How best can EE in institution B behave, what can it do or how best can it constitute itself in order to successfully win C to itself by crossing A? No quick, easy answers or principles exist in the literature to clarify the process. This is where the crux of the problem resides, explaining why EE is failing to attain real integration into the educational systems of many countries. Change agents wishing to cross over from B to mainstream EE into C will discover that zone A is an intersection that is a rather messy, often quite lively place full of surprises. Expeditions from B to C have been likened in some ways to travelling into unknown countries (Gibson, 1985). In comparison to B, institutions in C exist in a world dominated by politics, pettiness and real problems. Forays into C with its various languages, cultures and values will bring rich rewards to EE practitioners in B. Without knowing these differences, Gibson (1985) warned of the danger to those moving from one institution that has mainstreamed EE to another that has not yet mainstreamed EE. Also, experience in one institution can have a detrimental effect on another institution. For instance, EE practitioners with government experience moving from institution C to B could become an undue influence in universities and threaten those values which make the university distinctive from government. Similarly, academic EE change agents moving from B may be harmful to those values which make civil service, school teaching or political appointment distinctive. In short, crossing over for purposes of mainstreaming EE between B and C is a valuable experience for EE practitioners, regardless of the direction of movement. A complete transfer of methods in either direction would be a disaster. Practitioners of EE must rethink the need and value of making such forays. But zone A is also formed of poor relations between B and C. Attempts by change agents moving from a university setting in B, wanting to work closely with schools in C, seem to run headlong into a number of painful impediments identified and described by Barth (1990) as follows:

Scorned lovers – a university cannot begin a new EE activity with schools as if the slate is clean of old activities. School and university people make new conversations while harbouring ‘antibodies’ that each has built for protection against the other.

Who takes the initiative – for the academic, taking the initiative carries the risk of being prescriptive, which often causes school people to bristle defensively as many detest being responsive to university initiatives.

Muted voices – a third roadblock is to be found in the muted voices of school teachers and administrators who may feel dominated by university voices. Yet such school teachers and administrators often have valuable insider perspectives of events happening within their institutions.

Crossing boundaries – a fourth roadblock to rich exchange between the worlds of school and university is that neither adequately rewards those crossing the border between them for purposes of mainstreaming EE.

Theory versus *practice* – the locus of theory and practice is another obstacle to close engagement between universities and schools. The common saying is that "theory resides in universities and practice resides in schools". This conception is, however, simplistic and detrimental to relations between school and university.

Environmental education needs theories, principles or tested approaches that clarify the process of colonizing new institutions for purposes of mainstreaming EE from its stronghold (B) to a new territory (C). At present, there appears to be too much 'in-breeding' among EE practitioners themselves, who continuously preach to themselves and to the already converted through various forms such as conferences, publications or workshops. Such in-breeding produces different implications, one of which is a situation where potential beneficiaries of the EE message, such as school children or local communities experiencing various environmental ills such as the impact of climate change, are unaffected by such messages. The next sections of this chapter elaborate on this point by using a case study in Zambia with a climate change message.

4.3 Outlook of Climate Change Education in Zambia

Addressing climate change is now one of the major issues on the international political agenda, and it must be one of the issues that requires emphasis in environmental education (United Nations Educational Scientific and Cultural Organization (UNESCO), 2007). In Zambia, and particularly in the school system, the subject of climate change is relatively new, and consequently, learners and the general community have limited understanding of the phenomenon; such learners and even people may be aware of the localised effects of climate change but do not associate these with climate change (Muchanga, 2013). Similarly, the International Union for Conservation of Nature (IUCN) (2007) noted that some communities in Zambia are aware of climatic change but there is little understanding as to why it has occurred.
At a national level and particularly in the school system in Zambia, there is inadequate information, knowledge and skills to prepare teachers and learners to

face up to the challenge of climate change. The Zambian government has opted for climate change awareness and literacy creation using different approaches such as the print and electronic media, drama and community fora. In order to go beyond awareness creation towards meaningful behavioural and social change for climate change preparedness, the actors in B, for example, at the University of Zambia initiated climate change education (under the broad EE programme)-related activities such as research at postgraduate level training, conferences and workshops (e.g. events organised with SARUA and Climate Change Education for Sustainable Development (CCESD) funded by UNESCO). Further, the institution introduced a course in Climate Change Education (CCE), among others, into the EE curriculum in anticipation of some trickledown effect into C through A (Muchanga & Nakazwe, 2015).

The envisaged key outcomes in C include updated school curricula with climate change content, updated textbooks and other learning materials with climate change content. Other expected outcomes include updating of existing courses or designing new ones with an emphasis on climate change adaptation and mitigation. This is expected to lead to the development of technical capacity in various climate change fi elds, engaging local administration and community leaders as well as disseminating climate change education literature in local languages for the benefit of marginalised populations and the general public who might be found in C. Education and particularly EE is a right of each individual and a means for enhancing the wellbeing and quality of life in the changing environment (Ministry of Education [MoE], 1996).

However, this right is not being enjoyed by the schooling system in C because of diverse obstacles at A (e.g. the Curriculum Development Centre and the MoE) maintaining the untenable argument that the curriculum is too full to include CCE conceived through the EE curriculum in B, which also faces its own internal hurdles. According to UNESCO (2000), in the *Dakar Framework for Action on Education for All* (*EFA*), the right to education imposes an obligation upon states to ensure that all citizens have opportunities to meet their basic learning needs. In contemporary society, it can be argued that the Zambian government, and particularly the Ministry of Education (MoE), is under an obligation to infuse climate change education in the school curriculum at all levels in order to meet the learning needs of learners in the context of climate change. In fact, the National Climate Change Response Strategy (NCCRS) of 2010 formed at A acknowledges CCE as one of the strategies to address diverse environmental ills that affect diverse groupings in C (Ministry of Tourism, Environment and Natural Resources (MTENR),2010). However, this remains a mere pipedream unless a synergised approach among actors in B and C through A is adopted.

Much as we appreciate that many activities are being implemented on climate change, they do not address the needs of the Zambian schooling system. For example, with the support from the United Nations Development Programme (UNDP), the Ministry of Finance has established some climate change and mitigation projects and even frameworks, but these do not provide the required systemic and systematic content that would bring about behavioural and social change especially within school system. In fact, there are many other entities in Zambia that are involved in climate change adaptation activities whose pedagogical foci are not necessarily to influence

positively behavioural and social change in the school system. The lack of a learning approach in these activities is actually what renders them inadequate to address the needs of the schooling system in Zambia (MTENR, 2010).

This lack of appropriate approaches is not only a challenge among nonacademic entities; it exists within key academic agents (especially at 2, 3, 4 and 5 in B) that are attempting to mainstream EE/ESD issues, such as climate change. For example, in their study at the Copperbelt University, Shumba and Kampamba (2013) demonstrated that although EE/ESD issues are salient in education policies in Zambia, the surveyed high school subject and the university teaching methods syllabi do not carry ESD content and change-oriented teaching and learning approaches that would foster effective mainstreaming. They are unlikely to model integration of ESD issues such as those stated in policies, for example, human rights, values education, entrepreneurship and climate change (Shumba & Kampamba, 2013). Overall, the results of policy and curriculum analysis and of the student surveys undertaken by Shumba and Kampamba point to a discrepancy between policies, school science syllabi and the university teaching methods course, which is an indicator of disconnections between B, A and C. Policies such as the National Policy on Education – *Educating our Future* , National Policy on Environment (Ministry of Education [MoE], 2013) and the latest Education Curriculum Framework (MTENR, 2007) designed at A stipulate mainstreaming of EE/ESD issues, but the syllabi do not systematically point out the content and the teaching and learning methods for integrating ESD (Shumba & Kampamba, 2013).

A paradigm shift might occur by adopting the metaphor of ‘learning as connection’ (Lotz-Sisitka, 2010), which implies learning that has meaning in people’s lives or a notion that connects science to social and humanistic issues such as those advocated in EE/ESD discourse. Thus far, one entity in B and University of Zambia in particular is using students’ educational practicum as one of the channels through which C could be mainstreamed with EE/ESD issues such as climate change. This involves a mandatory sending of all EE students for ‘attachment’ to various institutions in C for 3–4 months to develop a practical feel of EE/ESD and thereby mainstreaming- related issues such as climate change. Turbulent though this has been, it has proven to be one way of mainstreaming EE issues into various institutions, especially non-educational ones. However, much needs to be done to penetrate the school system due to inadequate commitment and lack of political will at A and partly due to intra-institutional inconsistencies at levels 2, 3, 4 and 5 under B.

Generally, the existence of climate change and its impacts is widely accepted in Zambia as demonstrated in various policy documents, reports and frameworks such as the National Adaptation Plan of Action, National Policy on Environment, National Climate Change Response Strategy and others. The government through these documents acknowledges that climate change has the potential to impact negatively on almost all sectors of the economy in Zambia. Using climatic data from 1960 to 2003, it has been concluded that the mean annual temperature in

Zambia has increased by 1.3 °C since 1960, at an average rate of 0.29 °C per decade (MTENR, 2010). Zambia experienced severe droughts in different agro-ecological regions during the 1990s (1991/1992, 1994/1995, 1997/1998/1999) that were partly linked to the El Nino Southern Oscillation (ENSO) and partly due to the changing climate. Such events caused national disasters, especially in 1992/1993, when Zambia was compelled to seek maize food aid from Norway due to crop failure (ibid.).

Using a survey design and hermeneutic paradigm, Muchanga (2011) noted that climate change has radiated diverse effects (water scarcity, crop failure, social disintegration) in rural areas of Luangwa District especially among women and school going girls. This led to a strong recommendation that CCE should be responsive, topically diverse and flexible enough to address the emergent effects of climate change. This recommendation also influenced the structure of an existing course in CCE in the EE curriculum of the University of Zambia. The unfortunate situation, however, is that the knowledge which an EE teacher is obtaining from this course has not yet reached the envisaged recipients in C because of ideological contradictions at A.

As mentioned earlier, sometimes actors in C and A may argue that climate change is already mainstreamed in subjects such as geography, but the conclusion of Muchanga and Nakazwe (2015), in their critical review of the extent to which CCE is incorporated within the Zambian school curriculum from early childhood education to tertiary level, showed that what is in the curriculum is basically climate science where learners learn about weather and climate, and not CCE. Some of the key observations are that the pre-primary curriculum has little or no learning goals on climate change education. Most of the issues integrated are more to do with the general environment and not CCE. Nevertheless, the pedagogy seems favourable for the inclusion of CCE. The primary school curriculum covers a number of environment and sustainability themes under which climate change issues are currently integrated, though in a fragmented nature. At secondary school level, climate change issues are mainly integrated into geography as the main carrier subject, although not every learner chooses to study it. While other environmental issues are generally well represented, climate change themes are presented in a very simplistic way with no clear focus on the local context. Many CCE issues that can bring about community adaptive capacity and resilience are missing. The main reason for this is the same as what is already presented above, that is, CCE is still ‘stuck’ within the comfort zone B with actors at A being arguably the main source of EE fixation within its comfort zone (Muchanga and Nakazwe, 2015).

4.4 Conclusion

This chapter has argued that the emerging twenty-first century schooling system is experiencing various sustainability challenges largely as a result of EE practitioners focusing on ‘in-breeding’ messages among their already converted members to the neglect of addressing the intangible zone formed by ‘A’ in Fig. 4.1. As long as that interface is untouched by clear strategies, tactics and

approaches, the ethos of sustainability as espoused in fields like ESD or EE will remain unreceived by people and, particularly, the schooling system it is supposed to benefit. In particular, the message of climate change will forever be trapped in universities, research centres and other high-level institutions given that its main carrier (EE) is also fixed. The University of Zambia is currently working on its next steps of implementing education for sustainable development.

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