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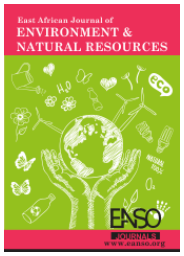

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Original Article

Assessing the Influence of Policy and Institutional Frameworks on the Effectiveness of Environmental Programmes in Selected Secondary Schools in Murang'a County, Kenya

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ABSTRACT

Environmental degradation is a major challenge which requires appropriate strategies to reverse the situation. One of such strategies is experiential environmental education in high schools which give students an opportunity to participate in various environmental activities which in turn changes their change of attitudes and conservation behaviour. In this study, the influence of such experiential programmes was assessed with regards to their influence on pro-environmental attitudes and behaviour of high school students in Murang'a County, Kenya. The study also assessed the institutional and policy frameworks on which the programmes are anchored using secondary data mainly through literature review of policy documents. For the effectiveness of environmental programmes in school, nine hundred and sixty-one (961) students from nineteen (19) high schools from two sub-counties in the County were sampled in the study. The Likert type questionnaire and the 2-MEV Scale were used to collect the required data. The t-test statistic was applied to determine any differences between the variables. Results showed significant differences in pro-environmental attitudes and behaviour with regard to solid waste management, water resources management, natural resources management between members of Environmental Clubs and non-members. It is concluded that the experiential environmental programmes improve the student's pro-environmental attitudes and behaviour and hence environmental management within the schools, they lack the requisite institutional and policy framework to support it enhanced environmental literacy. It is recommended that appropriate policies to enhance the implementation of school experiential environmental programmes be

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formulated to ensure capacity building of the learners to effectively manage environmental issues in the schools and their community.

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INTRODUCTION

Environmental degradation is a growing problem that can be attributed directly to human activity (Vlek & Steg, 2007; Joldersma, 2017), and it has been demonstrated that there is a direct or indirect relationship between human activities and the state of environmental crisis that humanity currently faces (Batanero et al., 2018). Therefore, since human action is at the heart of environmental issues, sustainable development ultimately depends on changing human behaviour (Zelenika *et al*, 2018).

Indeed, it has been noted that environmental degradation has been preceded by a long-standing erosion of environmental values from the human value-system, which means it can also be reversed by changing relevant human behaviour. According to Glanz *et al*. (2008), negative attitudes towards the environment and a low-level of environmental awareness among the population are variables that can have a great social impact, hence the need for education for sustainable development. Environmental education is thus a catalyst for the needed change, and a primary means of achieving environmental protection (Sharma, 2016; Kaur, 2020). It is among the most effective strategies that does not necessarily require a huge cost to change people's perspectives and attitudes towards the environment (Habibie, 2020).

Worthy of note, however, is that not all environmental education programmes have been effective in achieving the goal of assisting learners become environmentally literate, which requires one to go beyond knowledge and attain new attitudes and subsequently intentionally facilitate behaviour change (Guion & Free, 2010). Kollmuss and Agyeman (2002) argued that environmental information and knowledge does not lead to pro-environmental behaviour in linear progression. There is a disconnect between knowledge and action; and a gap between knowledge of environmental education, and the motivation to participate in environmental management (Mutisya et al., 2013). New methods and strategies are therefore required to facilitate behaviour change (Guion & Free, 2010), as the traditional form of education may not be sufficient to overcome the current challenges of environmental degradation (Loubser, 2012).

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Among the strategies proposed is that Environmental Education (EE) should be more "*hands-on*" to create more consistent behaviour in protecting the environment (Hassan *et. al*., 2019). This is because classroom activities have limited ability to change some components of environmental learning, notably emotional connection to the environment (affect) and environmental behaviour. Duerden et al., (2013) found that classroom activities were associated with improved environmental knowledge whereas field experiences were correlated with improved effect, which indirectly improved behaviour by activating knowledge. Indeed, according to Kopnina (2012), the ecological crisis is rooted in the way we educate future generations. Part of the challenge might be because it has not been fully appreciated that conservation and environmental management are "action-dependent" and that action and practical components are inhibited by poor governance arrangements, including lack of policy and institutional arrangements (Armitage, et. al., 2020).

In appreciation to the action and experiential component of environmental education, and to boost environmental literacy and pro-environmental behaviour, several experiential programmes are run in schools through clubs and societies. Most of these environmental education programmes are non-formal and voluntary. Such programmes include Boy Scouts and Girl Guides; Wildlife Clubs; 4K clubs; Green schools; and Environmental Clubs. These programmes aim to reinforce what has been learnt in class and to create positive perceptions and attitudes regarding nature, and the environment (Korkmaz, 2018). Most of these experiential environmental programmes practiced in schools have no policy or institutional framework, and thus face numerous challenges.

Other actions undertaken to halt and reverse the ongoing degradation, include policies and legislation, projects, and programmes, and even campaigns (Singh, 2020). At the global level, reversing environmental degradation ranks among the top agenda in the 2030 sustainable development goals (SDGs). In this regard, SDG No. 4 focuses on quality education to impart knowledge and skills necessary for sustainable development (UNESCO, 2017). Other goals relate to combating climate change and protecting and promoting sustainable use of terrestrial ecosystems, including forests, to ensure halting and reversing both land degradation and biodiversity loss (UNDP, 2015). This study aims to contribute to knowledge on the importance and influence of policy and institutional frameworks on the effectiveness of environmental education programmes in Kenya.

APPROACH AND METHODOLOGY

Study Area

The study sites were located in Kahuro (highlands) and Murang'a South (semi-arid) sub-counites in Murang'a County, one of the 47 counties in Kenya. The County was selected because learners here have a higher chance in engaging in environmental management activities. The site also gives two different eco-systems – one that is semi-arid in the lowlands, and another that is humid in the highlands, which mirrors the Kenya country context with regards to highlands and Arid and Semi-Arid lands (ASALs), meaning that study results from the study can be cascaded to reflect the situation in the country.

Data Collection Method

The research used both qualitative and quantitative methods. Qualitative methods were used in the review of policies, institutional frameworks, strategies, and factors that have made school environmental education and experiential programmes to work. Qualitative methods were also used in form of key informant interviews targeting school Principals, teachers, club patrons, education and environmental officials in counties, and with national government officers. Qualitative tools in form of an interview guide, were also used in undertaking Focused Groups Discussions (FGDs) with Clubs and Society's members in the schools.

Study Sample

To assess effectiveness of environmental programmes and determine conservation influence, the study used quantitative methods in the collection of knowledge, attitudes, and practices among the secondary school students. The study sample was drawn from 19 secondary schools, of which 9 were from Kahuro (in the highlands) and 9 in Murang'a

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South (in the ASALs) sub-counties. The total number of students sampled were 961, of which 44% were from Kahuro and 56% from Murang'a South. In terms of gender, female students were 58.8% and male were 41.2% of the total sample. The tailored questionnaire used was based on the Environmental Attitude/Awareness Scale of Hassan Taj Environmental Attitude Scale; the 2-MEV Scale; and the "Attitude Scale for Environmental Issues" developed by Saraç and Kan (2015).

RESULTS AND DISCUSSION

Effectiveness of Environmental Programmes and their Conservation Influence

The study investigated whether students' engagement in school experiential environmental programmes, which provide direct learning, action, and conservation experiences in environmental protection among secondary school students, impacts on instilling positive environmental attitudes, and positive environmental behaviour in selected secondary schools in Murang'a County. The conservation influence was assessed by comparing the environmental knowledge, attitudes, and practices of secondary school students in Form 4 (four) who have participated in school experiential environmental programmes and those who had not. The comparison was eventually to assess pro-environmental behaviour which is an indicator of environmental education success (Hidayah, 2017).

There was good student membership in clubs and societies with an environmental component among the students sampled, with 51% of students being members, while 49% were non-members. In terms of sub-county, 47.5% of students in Murang'a South Sub-county were members of environmental clubs with, while in Kahuro sub-county, membership stood at 53.9%. With regard to gender, 52.9% of male students are members of environmental clubs while female membership stood at 48.9%. Membership of clubs and societies was voluntary in most schools.

To assess how the experiential environmental education programmes in secondary schools in Murang'a County have influenced positive environmental management practices among the students in the County the "t-test of independent groups" was used in the comparison of two groups (those participating in experiential programmes and those who do not) to determine any significant difference. Comparisons were also made between the students in Kahuro and Murang'a South sub-counties. The t-test results on the comparison of the two variables are as shown in Table 1 below.

It showed that there was a significant difference in behavior on solid wastes management between members of environmental clubs and non-members among students in Murang'a county. The null hypothesis was rejected due to the significance level of p at 0.044 ($p<0.005$). The difference in pro-environmental behavior can be attributed to the fact that most of the environmental Clubs in the schools are engaged in aspects of cleanliness, including provision and emptying of bins. The students are also involved in improving the aesthetics of the schools by planting flowers and trees and maintaining them. The Clubs thus seem to have reinforced the student's pro-environmental behaviors with regards to solid wastes management. The first-hand experience in cleanliness is an important influencing factor to getting students interested in nature, and positively influences students' beliefs towards their natural environment and eventually leads to pro-conservation behavior (Sharma, 2016). With regards to locale, there was no significant difference ($p >= 0.05$) in attitudes and behaviour on solid wastes between sampled students in Murang'a South and Kahuro Sub-counties. This is because the differences between the two-sub-counties is climatic and agro-ecological, with no bearing to wastes management.

There was no difference in behavior on water resources management between current members of environmental clubs and non-members in Murang'a County. The p value was 0.089 ($p >0.005$). The lack of significance might be due to the fact that the current activities of the School Clubs might not have a direct relation to water resources management strategies. It also affirms that behaving well with regards to one aspect of environmental management does not mean that one will also exhibit pro-environmental behavior in another field. There was also no difference in behavior on water resources management between students in Murang'a South and Kahuro sub-counties. The p value was 0.506 ($p >0.005$). While the agro-ecological zones may be

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different, water availability might not be significantly different between the two sub-counties. This is because the surface water bodies run across the county. The balance may also arise from the high-altitude areas having challenges of water connection due to steep slopes, which balances off with the lower altitude areas having less water (as they get supplies after the upstream users have already abstracted water for their needs).

There was also no difference in behavior in hygiene between members of environmental clubs and non-members in Murang'a County. The p-value was 0.170 ($p>0.005$). This is because the behavior on hygiene is mainly affected by external factors such as distance to taps and lack of soap in schools. The same was true for students in Murang'a South and Kahuro Sub-counties with the p value being 0.090 ($p>0.005$).

However, there was a significant difference in behavior in the area of energy and climate change between members of environmental clubs and non-members in Murang'a county. The p value was 0.026 ($p < 0.005$). Most of the issues associated with pro-environmental energy and climate change understanding and behavior have to do with responsibility and leadership qualities which are among the key attributes that school administrations tie to being in the various environmental clubs. The skills learnt in the clubs are thus expressed by the responsible behavior of the students in their pro-environmental actions. There was also s a significant difference in behavior in the area of energy and climate change between students in Murang'a South and Kahuro sub-county. The p value was 0.027 ($p < 0.005$). This means that student in Kahuro have significantly higher levels of understanding and behavior with regards to energy and climate change than those in Murang'a South. This can be explained by the fact climate change in Murang'a has been explained more with regards to rainfall patterns – increase, decrease, and unreliable rains. With more rain in Kahuro, aspects of climate change were thus clearer to the students who were also able to explain the links of this phenomenon to human behavior.

There was also a very significant difference in behavior on natural resources management between members of environmental clubs and non-members in Murang'a county. The p-value was 0.000 ($p<0.001$). This means that students participating in environmental clubs are significantly more active in natural resources management that those who do not participate. This is because Clubs allow students to engage in group activities, which reinforce care and nurture of the environment, leading to positive individual behaviour among the students. The same was true with regards to students in Kahuro and Muranga South, with a very significant difference as shown in the p value of 0.000 ($p<0.001$) showing higher positive pro-conservation behaviour among students in Kahuro,, which lies in the upper zone and has more rain unlike Murang'a South which is drier. The students in Kahuro engaged in natural resources management in the form of tree planting and tending as their activities had a higher chance of success with regards to tree growth and survival than in Murang'a South. The engagement of students in the activity is thus tied to its chance of success - students in Kahuro can engage more in natural resources management because they believe it will have a positive impact, as opposed to those in Murang'a South who have less locus of control due to external factors related to weather and thus lower chances of success. This shows that people only behave in an environmentally responsible manner when they are sufficiently motivated and are capable of generating qualitative changes - optimistic attitudes leading to positive practices and vice-versa (Zheng, *et. al*., 2018). The students' participation in natural resources management by the students in Murang'a county was impressive. With an average 10 trees planted per student, and at least 50% survival on average, this translates to about 5 surviving trees per student. With about 100,000 secondary school students, Murang'a County students are able to plant and grow about half a million trees in a year.

There was also significant difference in behavior in environmental concerns between members of environmental clubs and non-members in Murang'a county. The p-value was0.034 ($p<0.005$). This shows that it is the environmental attitudes and individual's sense of responsibility towards the environment that really shape environmentally friendly behavior (Chen, 2011). There was also a highly significant difference in environmental concerns between students in Murang'a South and Kahuro sub-counties with the p value of *t-test* at

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0.000 ($p<0.001$). As outlined in the concerns, deforestation and soil erosion are more frequently experienced in the upper agro-ecological zones than in the lower areas. Indeed, the upper agro-ecological zones in Muranga also experience flash floods and mud slides which makes the students in these areas more environmentally concerned.

When all the different attributes are combined, the p value was 0.000 ($p<0.001$) meaning there was a very significant difference in environmental knowledge, attitudes and behavior between members of environmental clubs and non-members in Murang'a county. This shows that the clubs, through their experiential learning expose students to an active process of learning, where there is interaction between the learner and the environment, making leaning enjoyable (Anderson *et al;* 2015). The hands-on approach leads to heightened awareness and ultimately action (Chawla, 2015). The ultimate aim of education is to change human behavior (Harold, 2015) which is key to tackling and preventing environmental degradation. It can also be concluded that it is difficult to teach the values of conservation and preservation to persons who do not appreciate the natural world around them or who are afraid or loathe to venture into it (Chawla, 2015). On locus, the study also showed that there was a highly significant difference between the student's environmental knowledge, attitudes and behavior in Kahuro and Murang'a South Sub counties. The p value was 0.000 ($p<0.001$) indicating that the higher environmental concerns led to more pro-environmental behaviour. This finding is supported by Stern (1999) who established that there is a positive relationship between pro-environmental attitudes and the performance of pro-environmental behaviors.

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Table 1: t-tests results on various environmental conservation attributes

Environmental Attribute	Variables being compared	Means	95% Confidence Interval of the Difference		Difference of means	P-value
			Lower	Upper		
Solid Wastes Management	Membership of environmental clubs (Yes, No)	Y = 7.20 N =6.88	0.009	0.644	0.327	0.044*
	Sub-county: Murang'a South (MS) and Kahuro (K)	MS = 6.99 K = 7.11	-0.441	0.197	-0.122	0.454
Water Resources Management	Membership of environmental clubs (Yes, No)	Y = 4.09 N =3.96	-0.021	0.295	0.137	0.089
	Sub-county: (MS, K)	MS = 4.00 K = 4.06	-0.210	0.104	-0.053	0.506
Hygiene	Membership of environmental clubs (Yes, No)	Y = 2.88 N =2.81	-0.029	0.166	0.068	0.170
	Sub-county: (MS, K)	MS = 2.80 K = 2.88	-0.013	0.176	.082	0.090
Energy and Climate Change	Membership of environmental clubs (Yes, No)	Y = 6.18 N =5.90	0.034	0.519	0.276	0.026*
	Sub-county: (MS, K)	MS = 5.92 K = 6.19	-0.509	-0.030	-0.270	0.027
Natural Resources Management	Membership of environmental clubs (Yes, No)	Y = 6.59 N =5.85	0.350	1.125	0.737	0.000*
	Sub-county: (MS, K)	MS = 5.63 K = 6.99	-1.737	-0.985	-1.361	0.000*
Environmental Concerns	Membership of environmental clubs (Yes, No)	Y = 6.189 N =5.945	0.0184	0.4686	0.2435	0.034*
	Sub-county: (MS, K)	MS = 5.711 K = 6.521	-1.0181	-0.6028	-0.8105	0.000**
Overall Environmental influence	Membership of environmental clubs (Yes, No)	Y = 33.13 N =31.34	0.8734	2.7050	1.7892	0.000**
	Sub-county: (MS, K)	MS = 31.13 K = 33.66	-3.4255	-1.6433	-2.5344	0.000

(NB: *($p<0.05$), ** ($p<0.01$)

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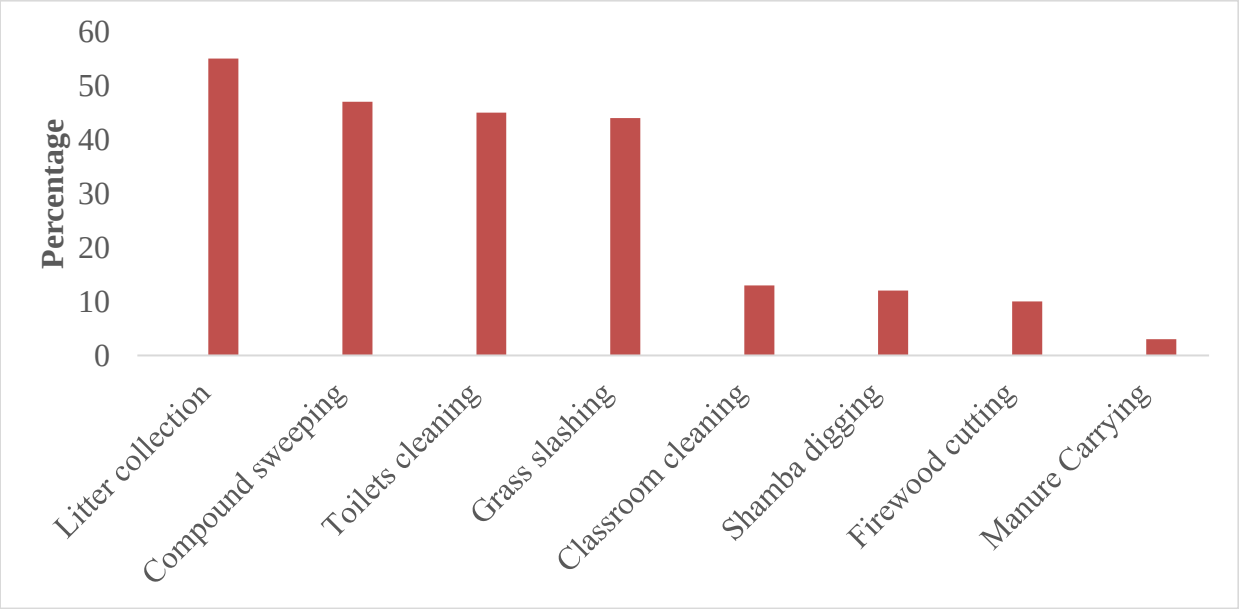
Policies and Institutional Frameworks for the Successful Implementation of Experiential Education Programmes in Murang'a County

Most of the experiential environmental programmes practiced in schools have no explicit policy or institutional framework, and thus face numerous challenges. There are however several policies on which the experiential environmental programmes can be anchored upon. These have however not been exploited and experiential programmes and conservation work are looked down upon, and other pro-environmental practices are regarded lowly, and even regarded as punishment, or work for the lowly in society. This creates a negative attitude among students about these pro-environmental activities.

In county schools in Murang'a, there is a thin line between punishment and environmental work as shown in Figure 1 below.

Figure 1: Ways Students are Punished in Schools



Resorting to environmentally-related punishments is tied to the Ministry of Education Policy of 'no caning' of students, with most school administrations using them to replace corporal punishment.

Dealing with environmental degradation and reduced natural resources will however only be achieved through long-term clear and explicit environmental policies, which are significantly important for participation and awareness towards environmental issues (Hemayatkhah, 2018). There are several policies at international, national, and local levels which are geared towards promoting the environmental competence of students.

The **Constitution of Kenya (2010)** is Kenya's supreme legislative document and gives the environment and natural resources management a special place, with the Bill of Rights (Article 42) stating that "every person has the right to a clean and healthy environment". The constitution also goes further to urge those efforts be made to achieve and maintain a tree cover of at least 10% of the land area in Kenya. Additionally, the constitution commits the government to: ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; encourage public participation in the management, protection and conservation of the environment; eliminate processes and activities that are likely to endanger the environment; and utilize the environment and natural resources for the benefit of the people of Kenya. In mentoring, moulding, and nurturing national values, the Constitution 2010 prescribes the national values

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and principles of governance that need to be inculcated into all Kenyans, and mentions education as one of the most reliable vehicles of inculcating values. Pro-environmental behaviour is however not among the values mentioned as compared to for example, integrity and not engaging in corruption.

Vision 2030 calls for a curriculum, which builds individual strengths and nurtures corporate social responsibility, moral and ethical values. It calls for the development of technical and entrepreneurial skills, competencies, skills, and talents. The content of basic education, therefore, shall need to be designed to equip all learners with relevant knowledge, skills, competencies, and values, enabling them to develop to their full capacity, enhance the quality of their lives and make informed decisions on issues including environmental management aspects. Education as implemented should predispose leaners to engage in life-long learning (GoK, 2007).

GoK (2019) in the Session Paper No. 1 of 2019: A Policy Framework for Reforming Education and Training for Sustainable Development in Kenya, states that education training are the primary means of social mobility, national cohesion, and socio-economic development. Among the national goals of education elucidated by the policy is the promotion of positive attitudes towards good health and environmental protection which thus gives environmental education some policy footing. This policy document proposes a Competence Based Curriculum (CBC) to replace the 8-4-4 system. The objectives of both primary and secondary education are to among others: Prepare pupils for global citizenship; develop desirable social standards, morals, and religious values; develop awareness and appreciation of the environment; develop necessary knowledge, skills, and attitudes for the development of self and the nation; and promote positive environmental and health practices. These thus give some foundation to all matters related to environmental education and conservation in schools. The policy also takes into account alternative provision of basic education geared to develop skills on environmental protection and sustainable use for individual, national and international development; and development aesthetic values which could be used to boost experiential school environmental programmes.

The policy also takes into account teacher education with respect to developing a learner's sense of citizenship. While this may be seen to encompass environmental protection and conservation, there is no clear mention of environmental aspects in teacher training. A key weakness in the policy is that environmental education is not among the strategic objectives like Information and Communications Technology (ICT) and entrepreneurship (GoK, 2019). The policy recommended that to make the curriculum specifically relevant to Vision 2030; strategies to be used include ensuring entrepreneurship, environmental, integrity and life skills education are embedded on the curriculum across all levels. Those skills and competencies are developed in an incremental way across all subjects, including co-curriculum activities that take into consideration the age of the learner. This when implemented will cover the experiential environmental programmes.

Kenya has also ratified the **Incheon Declaration** which was adopted at the World Education Forum (UNECSO, 2015) held in Incheon, Republic of Korea. This committed the government and the education community to Education 2030 and the 2030 Agenda for Sustainable Development Goals (SDGs), recognizing the important role of education as a main driver in ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all.

Kenya has developed an **ESD strategy** to provide an enabling environment and capacity for all sectors and stakeholders to effectively contribute towards the achievement of sustainable development (GoK, 2008). Key strategies provided include promoting the quality of education through diverse learning; and promoting teaching and learning that inculcates appropriate values, behaviour, and lifestyles for sustainability. This in a way covers experiential school environmental programmes though they are not explicitly mentioned. The strategy also aims at a citizenry that has stewardship of the environment and who know how to care for themselves and others and how to care for their home, school, and local environments

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Further, the country has developed a **National ESD Policy (Sessional Paper No. 11 of 2014** on National Education for Sustainable Development Policy) spearheaded by the Ministry of Environment and Natural Resources. ESD has also been entrenched in the 2013-2018 National Education Sector Plan (NESP). Several teachers and education officials have been trained and a number of schools are practicing ESD. The education sector has been implementing whole-school approaches to ESD through initiatives such as Eco-Schools and Child Friendly Schools. The eco-school strategy focuses on environmental action learning and embeds transformative thinking into everyday school life and communities (GoK, 2014).

ESD is also being implemented in schools through non-formal learning activities that include general clubs such as 4 K (Young Farmers Club), wildlife, scouts, girl guides, environmental, music, drama, journalism, and bakers' clubs among many others. There has also been mainstreaming of sustainability issues across higher education curricula and integration of ESD into institutional policies towards implementing whole-institution approaches. The Kenya Green University Network (KGUN) has been launched in collaboration with NEMA and Commission for University Education (CUE). KGUN comprises five key areas – performance contracting, green campus, green curriculum, community engagement and student engagement – that provide the basis for KGUN activities in the country (GoK, 2017). Public awareness creation has been mainly through national and international days.

Non-formal ESD initiatives and resources targeting the youth have been important in raising awareness of sustainable development issues. Non-formal learning opportunities in natural environments are provided by national parks, environmental education centres, and museums to provide learners first-hand experience or exposure to nature. Non-formal educational institutions such as museums and national parks have either initiated new programmes or reoriented their programmes to include ESD components to deepen understanding and develop a sense of place for school children.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The findings have found that environmental programmes actually improve student's pro-environmental behaviour and thus contribute to environmental literacy. This is because students who participate in school environmental clubs with aspects of environmental conservation have significantly more pro-environmental attitudes and behaviour than those students who do not participate in such clubs. The effectiveness of the clubs in promoting environmental literacy is due to the experiential learning methods where students learn by engaging in environmental activities which in turn transform their knowledge into action as regards environmental conservation.

Educational institutions play a significant role in the shaping of individual attitudes, cultivating healthy habits and imparting different types of skills (Kaur, 2020). They are therefore key in inculcating values of education and related practices so as to develop future responsible citizens (Anbalagan, 2015). Creating better environmental practices among the school students is one of such initiative to achieve environmental protection by inculcating moral values. These programmes aim to reinforce what has been learnt in class and to create positive perceptions and attitudes regarding nature, and the environment (Korkmaz, 2018). When children are exposed to environmental awareness from an early age, the society becomes naturally interested in environmental issues, engaging on problem solving, as well as various approaches to improve the status of the environment (Gunduz, 2017). The recognition that human behaviour has a detrimental impact on the environment is central to the environmental agenda (Pianosi, 2017).

Recommendations

- **Policy and Institutional Framework:** The clubs and programmes, having been seen as boosting environmental literacy, should thus be encouraged, and supported. Dweyer *et al.* (1993) reported that participation in nature-related activities led the students to appreciate

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the nature and accept the environmental issues. Their curiosity is also aroused, and their subsequent participation in the natural activities, helps develop individuals' sense of responsibility and motivation to take environmental action (Erdogan, 2011). This has started in a way through the Competency Base Curriculum which is being implemented in the lower primary classes at the moment. Ways to initiate a policy for informal environmental education in the current 8-4-4 system that is gradually being phased out should also be undertaken so that those who are already in the system do not loose-out with regards to environmental literacy whose success should be measured once it translates to pro-environmental attitudes and behaviour.

- **Targeting School Going Children:** For future environmental sustainability, it is especially important to target the youth and school-going children who will be the leaders of tomorrow in environmental education initiatives.

- **Giving more time and resources:** The experiential environmental clubs should be given more resources through schools. This will enable them implement practical programmes that connect students with nature and make them more responsible for nurturing for it. More resources will mean more activities, more trips, and ability to invite professionals to give technical input to some of the programmes. It will also help inculcate environmental behaviour and demystify environmental conservation issues.

- **Training of Teachers:** While the government has ratified the Incheon Declaration, little has been done on teacher and trainer education with regards to environmental education. Teachers' capacity should be built through on-going training and environmental education also initiated in the teacher training programmes. This will enable teachers come up with innovative environmental activities that increase students' environmental literacy. Teachers will also be assisted run and manage the clubs better. Teachers should also be role models in environmental management so that students learn from them.

- **Further study:** More research on making students more environmentally literate should be undertaken so that schools are able to empower students to become environmental responsible and able to combat the ongoing environmental degradation which can only be truly mitigated by changing human behaviour. Research should be undertaken to compare student's attitudes and behaviour between public and private schools; and also, to compare attitudes and behaviours between students under the competency-based curricula and the 8-4-4 system.

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