
Rationale for Educational Policies in Environmental Stewardship for Public Schools Leadership Roles

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ABSTRACT

The education sector is tasked with ensuring that all sustainable development goals are met. Practicing environmental stewardship in schools will ensure that schools produce environmentally conscious individuals for a sustainable future. This study, therefore, sought to establish the rationale of educational policies in enhancing environmental stewardship in the education sector. The study adopted a correlational research design. Primary data was collected from a sample of 260 teachers using a structured questionnaire and fifteen school principals using interview schedules. Quantitative data was analyzed through descriptive statistics. The study established that there was no significant difference in understanding of environmental laws between male and female teachers. However, understanding such laws was found to be positively influenced by both levels of education and length of stay in the teaching career. Further, the study found that only 29.42% of the sampled teachers understood the provisions of the law on leadership roles for environmental stewardship.

Lastly, a positive linear association ($R = 0.792, R = 0.913$) was established between knowledge of laws and leadership roles, knowledge of the laws and environmental stewardship respectively. The study concluded that educational laws remained inexplicit on the issue of environmental stewardship while teachers remained unknowledgeable of existing laws and their provisions. Implementation of laws was also greatly wanting. This study will therefore inspire educational policy review to address leadership roles for environmental stewardship in public schools in Kenya and beyond.

Keywords: Educational policies; Environmental stewardship; Public schools; Leadership; Education for Sustainable Development; Eco-school

INTRODUCTION

Environmental stewardship entails being a caretaker of the environment by living responsibly, upholding strict conservation practices, engaging in management and sustainable use of resources and being involved in the active restoration of degraded

environments for the sake of the present and future generations (Worrell and Appleby, 1999; Borhan and Ismail, 2011; Bennett et al., 2018). In addition, stewardship entails acceptance of responsibility to ensure a quality environment by all that influence it while striking a balance between private needs, interests of society, and other species as well as future generations (Worrell and Appleby, 1999; Environmental Protection Agency [EPA], 2005). The global incorporation of the concept into the education sector is anchored in UNESCO's Education for Sustainable Development (ESD).

The ESD is a contemporary educational approach that aims to reorganize the traditional functioning of schools in the areas of infrastructure, management and consumption of resources, teaching and extra-curricular activities in a bid to create in people the qualities, commitment and willingness necessary to make changes in existing systems for a sustainable future (Schröder, Wals and Koppen, 2020). Since its inception, stewardship efforts in schools have gained momentum, especially in the developed world under concepts such as Green Schools (Sweden), Enviro-schools (New Zealand), Eco-schools (Europe), Green School Project (China) and Sustainable schools (Spain/Mexico) (Gough, Lee and

Tsang, 2020; Gonzalez-Gaudiano et al., 2016; RoK, 2010).

In Kenya, it started as a pilot program in 2003 to promote environmental action-based learning for both secondary and primary schools. Its key components included school-community partnerships, environmental policy, infusion of content across the curriculum and micro-projects (Otieno, Wandabi and Dixon, 2020).

In enhancing environmental stewardship, legal mechanisms have been argued to be a motivator for stewards by articulating the expectations of society, duties and responsibilities through enforcement mechanisms and legal sanctions (Soliman, 2014; Reto and Garcia-Vega, 2012). However, stewardship activities in the past have been purely intrinsic (Bennett et al., 2018) while existing policies on ESD and Eco-schools in most countries have only been through networking support, consultant support and consultations which have been described as soft governance tools that are too weak to attain any substantial results (Lysgaard et al., 2015).

The first global effort to infuse environmental stewardship activities in schools is anchored in Agenda 21 which called upon the inclusion of youths in environmental protection (Gough, Lee and

Tsang, 2020; Ministry of Education [MoE], 2017).

Other global efforts have been international agreements such as Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), The UN Decade of Education for Sustainable Development (UNDESD) and the Global Action Programme on ESD among others. In response to these, Africa has since developed Agenda 2063 of the African Union and the African Environmental Education and Training Action Plan (AEETAP) (MoE, 2017).

Similarly, Kenya has adopted and domesticated most of the international frameworks and conventions that promote ESD and consequently environmental stewardship in schools (MoE, 2017). Through the support of the Japanese fund-in-trust, Kenya has been supported to advance policy on ESD (Otieno, Wandabi and Dixon, 2020). Kenya has since developed its ESD policy for the Education sector that aims at adopting the whole-institution approach to mainstream sustainability in the entire learning environment (MoE, 2017). Besides, Kenya has developed laws and policies that directly or indirectly address environmental stewardship in schools that include:

The Constitution of Kenya (2010); the Environmental Management and Coordination Act (1999); Basic Education Act (2013); and the National ESD Policy (2014) among others.

Leadership remains a key determinant of the success or failure of any organization (Ebrahim, 2018). As such, the success of environmental stewardship in schools and the successful creation of eco-schools shall to a great extent depend on the leadership of schools (Muller, Lude and Hancock, 2020; Sobri and Nurabadi, 2018; Warner and Elser, 2015; UNESCO 2014). Indeed, school leaders must ensure that they support other members of staff in stewardship activities; assist students in developing their initiatives; emphasize the need for ESD and sustainability and establish an environmental policy in schools (Muller, Lude and Hancock, 2020; Desfandi and Maryani, 2016; Kadji-Beltran, Zachariou and Stevenson, 2012). Despite their crucial role in enhancing environmental stewardship in schools, global literature remains limited in linking school leadership roles to the implementation of environmental stewardship in schools (Muller, Hancock and Wang, 2021; Mogaji and Newton, 2020; Veronese and Kensler, 2013).

Instead, most educational leaders put their interests in student performance, infrastructure in schools, enrolment, and teacher-student ratio (Tusyanah, 2023; Egim, 2003).

Environmental stewardship in Kenyan schools has been closely linked to the launching of the eco-school program in the country in 2003. The program has since grown from the initial twelve pilot schools to over 1000 schools in Kenya (Otieno, Wandabi and Dixon, 2020). While effort has been made, this number remains extremely low considering the number of schools in Kenya. It is based on these revelations that this study sought to establish the extent to which educational laws in Kenya addresses the issue of environmental stewardship. In addition, how well are teachers and educational leaders informed about environmental laws.

The study gives insight to my first objective: to establish the rationale for educational policies in environmental stewardship for public schools' leadership roles in Githunguri, Kenya.

LITERATURE REVIEW

Theoretical background: The Norm activation model (NAM)

This study was inspired by the Norm Activation Model (NAM) by Schwartz (1977). The model was designed to explain pro-social behaviours that are selfless acts aimed at benefiting other people rather than the self (Aronson, Wilson, and Akert, 2005). Scholars have categorized pro-environmental behaviour (PEB) as pro-social behaviour (Onwezen, Antonides and Bartels 2013) since it yields benefits for others without necessarily or directly benefiting those that engage in such behaviour (De Groot and Steg, 2009). A pro-environmental behaviour has been defined by Krajhanzl (2010) as any individual action deemed by environmental science, in the context of a certain society, as being protective and promoting a healthy environment. Such actions should also be seen to diminish, as much as possible, any harm to the environment (Steg and Vlek, 2009).

Schwartz's model extends an argument that pro-environmental actions are triggered by a realisation of personal norms (PN) that create in a person the moral obligation to engage or not in some actions. Such norms are influenced by four factors namely; problem awareness (PA), acknowledgement of responsibility (AR), outcome efficacy (OE) and self-efficacy (SE) (Steg and de Groot, 2018).

Schwartz claims that understanding environmental problems caused by one's behaviour and taking responsibility for the problem without having to blame other people or the government leads to stronger personal norms. In addition, he argues that personal norms grow stronger when people believe that their efforts to solve the said problems will yield positive results (outcome efficacy). While personal norms in the original NAM were influenced by the four named factors, studies conducted later have mostly ignored self-efficacy (Steg and de Groot, 2010). The remaining three factors have a causal relationship where PA influences AR/OE which in turn influences PN and consequently PN influences intention and behaviour. The relationship is expressed in **Figure 1** below:

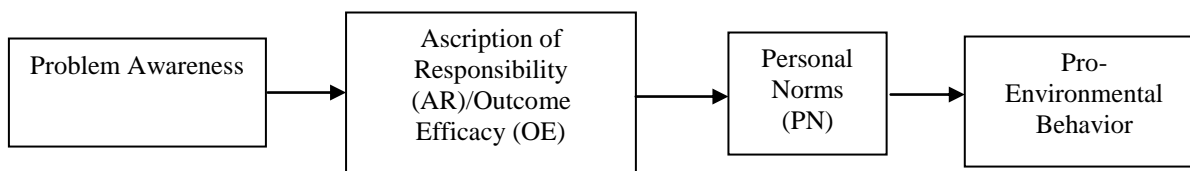


Figure 1: Model of Pro-Environmental Behaviour (Source: Steg and de Groot, 2010)

This study was however, inclined to outcome efficacy (OE) as far as creating pro-environmental behaviour. Outcome efficacy implies that personal norms will grow stronger when one feels that their actions will yield desired results.

However, since environmental problems require the cooperation of many people to yield significant results, then outcome efficacy will depend on the extent to which people expect others to take similar actions (Steg and de Groot, 2018). As such, there is a need to have a coordinated approach towards environmental stewardship in schools by entrenching environmental stewardship in school leadership roles through laws and policies. Indeed, laws and policies have been argued to motivate by articulating expectations of society and sanctioning contrary behaviour (Soliman, 2014; Reto and Garcia-Vega, 2012).

METHODOLOGY

The study was conducted in public secondary schools within Githunguri Sub-County, Kiambu County, Kenya. Kiambu county like other parts of Kenya is faced with a deteriorating environment majorly caused by population increase and pollution by industries and agricultural activities. Githunguri Sub-County is projected to have a population of 193,898 and a population density of 1,118 by the end of 2022 (County

Government of Kiambu, 2018). To curb the growing environmental deterioration, stewardship activities are required, and schools could become demonstration centres for such stewardship activities (Otieno, Wandabi and Dixon, 2020; MoE, 2017; Andreou, 2016).

The study adopted a correlational research design. The design aims at establishing a relationship between two or more variables by the use of correlational statistics (Creswell, 2012; Mugenda and Mugenda, 2008). The design was therefore deemed important in establishing the relationship between educational policies and leadership roles for environmental stewardship in the study area. Surveys were conducted using structured questionnaires while data from key informants (School Principals) was collected through interviews. A total of 260 teachers were sampled while fifteen principals were interviewed.

Data were collected using a mobile App, Kobo Collect, that made it easy to collect data from the large sample on time and cheaply (Beebe, Mika, Harrison, Anderson and Fulkerson, 1997; Rosenfeld, Booth-Kewley and Edwards, 1993). Data from the teacher respondents aimed at establishing their understanding of policies on environmental stewardship for public school leadership roles. Secondary data for the study was collected through desktop

reviews in a systematised literature review in a bid to ascertain the rationale for educational policies in enhancing environmental stewardship in public schools in Kenya.

Collected data were analysed using descriptive statistics to establish teachers' awareness of educational laws and policies on leadership roles for environmental stewardship in public schools in Kenya. Results from the key informant interviews were used to reinforce arguments about the rationale of educational policies for environmental stewardship in public schools in Kenya.

RESULTS AND DISCUSSION

General understanding of environmental laws

Sampled respondents in the study area were asked to identify laws that would enhance environmental stewardship in public schools. The responses were analysed in reference to teachers' demographic information including their gender, academic qualification and length of stay in the job and the results are presented in **Table 1**.

Table 1: Demographic statistics and general understanding of laws

		None		1/2		3/4		5/Mo re		Total	
		F	%	F	%	F	%	F	%	F	%
Gender	Male	252	20.2	51	41.9	42	33.9	5	4.0	14	11.7
	Female	286	23.6	50	40.4	44	35.3	5	3.7	16	13.3
	Total	538	43.8	101	82.3	86	69.2	10	8.0	30	25.0
Academic Qualification	Diploma	13	1.5	49	5.8	31	3.7	1	0.1	28	3.4
	Higher Diploma	20	2.4	1	0.1	3	0.4	0	0.0	4	0.5
	Degree	30	3.7	18	2.2	65	7.9	4	0.5	117	14.5
	Masters	85	10.4	12	1.5	21	2.6	3	0.4	14	1.7
Work Experience	Below 5	29	3.6	41	5.0	8	1.0	0	0.0	78	9.7
	5-10	16	2.0	38	4.7	24	3.0	2	0.2	80	10.0
	11-15	63	7.8	16	2.0	31	3.8	1	0.1	111	13.8
	16-20	27	3.4	46	5.7	22	2.8	3	0.4	103	12.9
	Above 20	0	0.0	67	8.4	21	2.6	4	0.5	94	11.7

The study reports that there were more female teachers ($n = 136, 52.3\%$) than male teachers ($n = 124, 47.7\%$). The study further established that there was no significant difference between male and female teachers when it came to identifying laws that are likely to enhance environmental stewardship. The study established that teachers had a difficulty identifying environmental laws in Kenya as most of the sampled could not identify any law ($n = 53, 20.4\%$) or were only able to identify one or two laws ($n = 107, 41.2\%$). Only 10 (3.8%) of the sampled teachers could identify five or more laws/policies that can guide environmental stewardship.

The study further established that in reference to academic qualification, most of the sampled teachers ($n = 187, 71.9\%$) were Degree holders while the least number of teachers ($n = 4, 1.5\%$) had Higher Diploma qualifications (**Table 1**). The study also established that teachers with higher academic qualifications were able to identify and mention more laws/policies as compared to those with lower qualifications. For instance, the majority of the diploma holders ($n = 13, 46.4\%$) could not identify a single environmental law. On the other hand, majority of master's degree holders ($n = 16, 39.0\%$) were able to identify 3 to 4 laws.

Finally, **Table 1** indicates that the majority of sampled teachers ($n = 85, 32.7\%$) of the sampled teachers had worked for between 5 and 10 years. Those that has worked for more than 20 years constituted the least cohort ($n = 22, 8.5\%$). Again, the length of stay in the profession seemed to positively correlate with an understanding of laws. For instance, majority ($n = 12, 54.5\%$) of the teachers who had served for more than 20 years were able to identify 3 to 4 laws/policies while a majority ($n = 29, 42.6\%$) of those that had a work experience of less than 5 years could hardly identify any law or policy related to environmental stewardship.

Knowledge of Specific Laws/Policies of Environmental Stewardship

Teachers were asked to express their knowledge about the provisions of identified laws and policies in regard to enhancing leadership roles for environmental stewardship in public schools. **Table 2** below presents a cross tabulation analysis of the results obtained from sampled teachers in the study area.

Table 2: Analysis of the Awareness of Educational Laws and Policies

	Policy	Yes %	No %
1	Knowledge of the National Education Sector Strategic Plan (NESSP, 2018-2022).	11.9 ± 1.8 ^a	88.1 ± 1.9 ^b
2	Knowledge of the provisions of the EMCA (1999).	12.3 ± 1.3 ^a	87.7 ± 1.5 ^b
3	Knowledge of the details of ESD policy for the education sector.	18.1 ± 5.7 ^a	81.9 ± 6.1 ^b
4	Knowledge of the CoK (2010) provisions for the environment.	25.4 ± 0.3 ^a	74.6 ± 0.4 ^b
5	Knowledge of Basic Education Act provisions for environmental stewardship in schools.	34.2 ± 1.0 ^a	65.8 ± 1.1 ^b
6	Knowledge of the TSC Act's leadership roles for environmental stewardship	36.5 ± 4.6 ^a	63.5 ± 4.9 ^b
Pearson Chi-Square value (123.902 ^a), <i>Asymp. Sig. (2 – sided)</i> = 0.000, letters ^{ab} in the same row differs statistically by Chi-square			

The study established that a statistically significant number ($n = 229, 88.1\%$) of teachers in the study area had inadequate information regarding the (NESSP, 2018-2022) provisions on environmental stewardship. More so, a minimal number ($n = 47, 18.1\%$) of the teachers were familiar with the environmental stewardship provisions of the ESD policy for the education sector. The study also established that a slightly higher number (34.2%) of the teachers knew the stewardship provisions of the Basic Education Act of 2013 (**Table 2**).

Notably, a considerable number ($n = 95, 63.5\%$) of teachers demonstrated limited knowledge of the TSC Act 2013 and its implications on school leadership roles for environmental stewardship. As follows, 87.7% and another 74.6% neither understood the provisions of EMCA (1999) nor were conversant with the Constitution of Kenya (CoK), (2010) provisions for the environment. Based on **Table**, the average positive (Yes) score is 29.42%, implying that very few teachers had knowledge about provision of laws for environmental stewardship of public schools.

Correlation between Laws/Policies, Leadership Roles and Stewardship Activities

A correlational analysis was conducted to ascertain the relationship between laws, leadership roles and stewardship activities among sampled teachers. The results are presented in **Table 3** below.

Table 3: Correlational analysis between environmental educational laws, leadership roles and stewardship activities

		Leadership	Laws	Stewardship Activities
1. Leadership	Pearson Correlation	1	.792**	.584**
	Sig. (2-tailed)		.000	.000
	N	260	260	260
2. Laws	Pearson Correlation	.792**	1	.913**
	Sig. (2-tailed)	.000		.000
	N	260	260	260
3. Stewardship activities	Pearson Correlation	.584**	.913**	1
	Sig. (2-tailed)	.000	.000	
	N	260	260	260
**. Correlation is significant at the 0.01 level (2-tailed).				

A correlational analysis shows a positive ($R = 0.792$) link between teachers' knowledge of the educational laws and the understanding of their roles in environmental stewardship. Also, the study established a strong positive association between teachers' knowledge of the laws and stewardship activities undertaken within their school environs ($R = 0.913$) (Table).

The findings indicate a likely positive influence of knowledge of the laws/policies on teachers' understanding of their roles as well as spearheading environmental stewardship activities in their school community.

The study established that there was no significant difference in understanding of environmental laws between male and female teachers (Table 1). These findings were in tandem with other studies that identified no difference in understanding of education laws among teachers by sex (Brookshire, 2002; Paul, 2001). Stella and Obikieze (2021) reaffirm in their study of Anambra State of Nigeria that indeed there was no significant difference in the means of understanding educational laws between male and female secondary school teachers in that state.

It also emerged that the majority of the sampled teachers could not identify any laws/policies pertaining to environmental stewardship. This study attributes the low understanding of laws among teachers to the fact that the environmental laws and policies are limited, inexplicit and have not been emphasized in educational institutions in Kenya. Literature is however largely lacking to establish teachers' knowledge of environmental laws. However, many studies among primary and secondary school teachers in India, Israel, the Philippines,

Brunei, Australia and Greece have all made one conclusion, that teachers have limited knowledge of environmental issue (Spiropoulou et al., 2007; Pe'er, Goldman, & Yavetz, 2007; Fien et al., 2002a). Another study in Botswana also concluded that the majority of teachers were either semi-illiterate or totally illiterate of educational laws. This is replicated in the US where Littleton (2008) describes teachers as having dismal knowledge of legal issues in their profession. This paper therefore calls for introduction of the study of laws in pre-service teacher training.

In reference to academic qualification and understanding of laws, this study established that teachers with higher levels of learning were able to identify more laws/policies as regard to the environment. The finding here is in tandem with Magali and Anne (2022) who indeed affirm that awareness of environmental issues and especially global ones is more among individuals who have completed higher education courses. While no study was found interrogate, in specific, teachers' knowledge of environmental laws, it is likely that those teachers who had taken further education were likely to have studied a course related to environmental studies studied environmental laws.

Finally, the study established that knowledge of environmental laws improved with the number of years that teachers had worked. This argument is supported by Littleton (2008) who argues that knowledge of educational laws improved with teachers' age. However other studies have reported the contrary arguing that experience did not have an influence on teachers' knowledge of educational laws (Brookshire, 2002). Even more interesting was a study that claimed that knowledge of educational laws was found to be minimal in teachers who had over 30 years of experience and those with less than 3 years of experience (Paul, 2001).

This paper further undertook a detailed review of educational as well as environmental laws in Kenya. We delved into Kenya's Constitution of 2010 (RoK, 2010); the Environmental Management and Coordination act of 1999 (RoK, 1999); the Basic Education Act of 2013 (RoK, 2013) and the Teachers Service Commission Act of 2012 (RoK, 2012). Besides the study looked at some policies in the education sector in reference to how best they address leadership roles for environmental stewardship. We particularly examined the National Education Sector Strategic Plan (NESSP, 2018-2022) and the Education for Sustainable Development (ESD) Policy for the Education Sector.

We affirm that the constitution of Kenya pronounces itself explicitly on matters environment and governance. Particularly, the preamble of the constitution that calls for respect and determination to conserve the environment for future generations. Article 42 further articulates that every Kenyan has the right to a clean and healthy environment while article 69(2) holds that every person has a duty to protect and conserve the environment (RoK, 2010). In addition, Article 10 Section 2(d) highlights the national values and principles of good governance which include among others 'sustainable development'.

In line with the constitution of Kenya, we also report that Kenya has an elaborate environmental law i.e., the Environmental Management Coordination Act (EMCA) of 1999. While the environmental law remains silent on stewardship of school environment, an amendment of the second schedule acknowledgement the establishment of schools and other learning institutions exceeding 100 learners in urban areas as high-risk projects (RoK, 2019). The conclusion made by this paper is that indeed the laws of the land in Kenya address environmental stewardship. However, understanding of such laws was found to be miniscule among teachers in the study area (**Table 2**). Indeed, as earlier stated., knowledge of laws among teachers has been

minimal as demonstrated by numerous studies (Ezeaku and Obikeze, 2017; Agaba, 2010).

While the constitution and EMCA are elaborate on environmental stewardship, laws governing the education sector in Kenya seem incoherent with the constitution and the environmental law. The Teachers Service Commission Act which outlines leadership roles of their employees remains completely silent on stewardship of environmental resources but instead only makes a mention financial and human resource management. On the other hand, the Basic Education Act only two mentions of the environment. Firstly, it mandates the school Boards of Management (BOM) to have an Academic Standards, Quality and Environment Committee (whose mandates and functions are not outlined) (Article 61).

Secondly, it mandates the National Education Board (NEB) to advise the Cabinet Secretary who shall in turn advise the government on the promotion of environmental education for sustainable development (Article 42[4]). The fact that these laws are elusive and inexplicit about environmental stewardship explains why very few teachers expressed understanding of their provisions for environmental stewardship (**Table 2**).

This study therefore calls for a policy review to align the educational laws to the constitution of Kenya as well as EMCA.

In a more direct effort to promote environmental stewardship in schools, Kenya developed the National Education Sector Strategic Plan. The NESSP gives attention to the need for governance in secondary schools for effective management of school resources. In that light, the plan proposes the need for capacity building among BOMs and school heads on environmental management as an emerging issue (MoE, 2018). Besides NESSP, Kenya also developed its Education for Sustainable Development (ESD) Policy for the Education Sector. The policy aims to promote the ‘whole institution’ approach in all schools and other training institutions.

The policy also appreciates the need to build capacity among teachers and educational administrators (MoE, 2017). While these two policies provide a more direct way of addressing environmental stewardship in educational institutions, school leaders who are expected to play a key role in the implementation remained ignorant of such policies (**Table 2**). Similar views are expressed by Nyatuka (2020) who affirms a situation of general vagueness in the understanding of the concept of ESD.

Indeed, this has hampered progress in the implementation of ESD in Kenya (MoE, 2017). Besides, Kenya's education curriculum has been blamed for being overloaded and exam oriented (Wandabi, 2019b; Opanda, 2013) giving little attention to environmental issues.

Finally, a correlational analysis was done to establish the relationship between knowledge of environmental law, leadership roles and stewardship activities. **Table 3** indicates that a relationship exists between the three implying that laws are likely to influence leadership roles and consequently enhance environmental stewardship. The results are in tandem with scholars' arguments. For instance, laws have been argued to constitute extrinsic motivation by articulating duties, responsibilities and expectations of stewards (Bennett et al., 2018). Similar views have been expressed by Soliman, (2014) and Reto and Garcia-Vega, (2012) who argue that laws and policies motivate by articulating expectations of society and sanctioning contrary behaviour.

As such, the deficiency of laws and policies that articulate expected leadership roles is likely to result to inaction towards environmental stewardship in schools. This is affirmed by studies that have pointed out the lack of a clear policy framework as a barrier to effective implementation of ESD

programs (Wandabi, 2019b; Opanda, 2013; Armstrong, 2011). This paper therefore calls on the government and stakeholders in the education sector to enhance laws and policies geared towards clearly outlining leadership roles for environmental stewardship in the education sector.

CONCLUSION

Kenya's constitution recognizes the environment and sustainable development as core values and every citizen duty. Kenya also has a comprehensive environmental law in the name of EMCA. However, this study established a disconnect between these laws and educational laws and policies. Nevertheless, the education sector has developed the ESD policy for the education sector that is supposed to guide stewardship activities in the education sector. Despite this, this study established that teachers possess minimal knowledge concerning laws and policies touching on environmental stewardship. The study established a positive association between knowledge of the policies, leadership roles and stewardship activities.

In this view, the level of awareness of the educational laws that promote environmental stewardship plays a crucial role in influencing teachers' norms in outcome efficacy in environmental conservation. However, poor implementation of the

relevant educational policies has hampered the motivation of teachers to take leadership roles in stewarding environmental conservation activities. Overall, the study finds a lack of clear policy frameworks to ensure the full and proper implementation of stewardship activities in public secondary schools in Kenya.

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