

Teachers and their Perception of Environmental Education, Awareness and Behavior in a Developing Country

A case study of Meru, Kenya

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The happy planet index (HPI) measures the quality of life including the ecological efficiency with sustainability as a key indicator. The index combines environmental impact with human well-being. The countries ranked highest by the HPI are not necessarily the ones with the happiest people overall, but the ones that allow their citizens to live long and fulfilling lives, without negatively impacting this opportunity for either future generations or citizens of other countries (Kenya 2015 Country Review, 162).

“We have to be willing to face reality and to see what is really happening and the first step would thus be to listen to those who are actually confronted with the question of education on a daily basis: teachers, for example. Therefore it would be advantageous to encourage them to make their experiences and knowledge public” (Liessmann 2014 translated from German by me).

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Abstract

In order to analyze the current situation of environmental knowledge and education in a developing country such as Kenya, from the perspective of the locals, ten teachers from five secondary schools in Meru County were interviewed. The semi-structured interviews aim to provide an understanding of the implementation of environmental issues in schools and its influence of the awareness and the behavior of people from the point of view of teachers.

The results show that teachers and students receive knowledge about environmental issues through various channels. In secondary schools in Meru County, it is conveyed as a complementary topic in all subjects. Yet teachers state that some subjects put a stronger focus on environment issues than others do. The results further highlight that differing characters and interests of a teacher influence the way and frequency of how environmental issue are conveyed during lectures. All teachers, however, point out that it is an important issue and that humans should take care of the environment. The majority of the interviewed teachers seem to be well informed about local environmental problems and this knowledge is then partly passed on to the students. With regard to implementation, there is nonetheless a lack of frequency and intensity. In practice, the focus strongly lies on natural science and rarely touches the social aspects involved. People do not act in accordance with what they have learned and the interviewees list various reasons for this behavior, such as not feeling responsible for it, not seeing the consequences of it or their own personal background. Through the means of literature and teachers statements, potential improvements of environmental education are discussed. Furthermore, this thesis points out the complexity and underlying aspects of environmental education and behavior.

Keywords: Kenya, teachers' perception, environmental education, human ecology, environmental awareness, environmental behavior

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1 Introduction

The concept behind the Happy Planet Index represents what we all should take into consideration for our future: having a good and healthy life, living it sustainably and reducing the damage left behind for further generations. Increasing population and overexploitation of resources have created various environmental problems, which have drastic effects on nature and as such also on human beings. The environmental crisis may arise from industrialization and can therefore be connected to Western society. Nevertheless, most developing countries are catching up to the Western lifestyle and environmental issues have become a global problem, which will grow fast if we, as humans, do not change our behavior.

During my fieldwork in Meru, Kenya (Map1, Appendix) I observed a lot of waste lying along the roads, in the fields, floating in rivers, polluting the environment. Based on this it could be suspected that people do not care about their environment or are unaware of what is harmful to the environment. However, there might be many other factors influencing environmental behavior such as cultural and historical aspects, or politics and power structures. Pollution through waste is only one example of how humans influence the environment. Increased population and higher living standards have resulted in a drastic rise of greenhouse gases, which further causes global warming. Since the industrial revolution, an increasing amount of natural resources have been used for production and the desire for economic growth has led to a consumer society, which has become a global geophysical force (Steffen et al. 2007). The environmental problems induced by humans are characterized by destructive and uncontrolled resource extraction and depletion (Ndargua 2003). Developed and developing countries are affected differently by the consequences of environmental problems, yet both exploit natural resources (ibid., 110). Wealthy societies are occasionally presented as more environmentally friendly, dedicating parkland and cleaning up while developing countries are blamed for activities causing environmental damage, such as slash-and-burn agriculture, overgrazing, and mining (Kenya 2015 Country Review). However, the latter activities are often justified by the income and livelihoods that they bring to people struggling for basic needs (ibid.). On the other hand, consumption per capita is much higher in developed countries, despite attempts and progress in energy efficiency and conservation. Nevertheless, developing countries, such as Kenya (Map2, Appendix), are moving towards a modern lifestyle and are increasingly dominated by technology and economy. A continuing and development towards a high consuming society will most likely lead to more problems.

Therefore, it can be argued that, in the context of environment, rethinking and changing the human values and life standards of people living in this Anthropocene, the human epoch, will become necessary. Education can encourage this shift by creating awareness about what we are doing to the environment and about what we should do for the environment. If the information provided will create consciousness and whether this will further lead to a change of behavior, can however be questioned. It could be assumed that we gain knowledge through education and once people have awareness and knowledge they should act according to it. Can we simply assume that people not acting environmentally friendly did not receive enough information about environmental issues? Additionally, it can be argued that people in developing countries such as Kenya might have more essential issues to deal with and therefore do not mind the unpleasant picture of rubbish in towns and the countryside. For instance poverty, unemployment and crime are perceived as much higher threats by Kenyans than environmental problems such as climate change (Shisanya and Khayesi 2007). If locals do not define environmental issues as a problem, it cannot be

expected that they will treat them as such and take initiative to change their behavior. While most developing countries still have a lower impact on global warming, they nevertheless keep growing which increases consumption worldwide and creates even more environmental problems. What do people living in developing countries think and know about this increasing and urgent environmental struggle? What do Kenyans learn and teach about environmental issues?

Since one of the main channels of transferring and producing knowledge are schools, I decided to investigate in environmental education in public schools. My bachelor in education strengthened this specific interest in me. I decided to find out what local teachers state on said topic and how they perceive environmental issues, education and behavior. This idea was fortified by my strong agreement with Liessmann (2014), who argues that teachers know best about what is happening in the education system. Teachers are the ones that are daily confronted with the reality of education and as such with its context and struggles (ibid.). Thus, I interviewed eight teachers from five secondary public schools in Meru County in order to grasp what they know about environmental issues and how this knowledge affects their teaching and personal behavior. Furthermore, my aim was to get a deeper understanding of teachers' perception about the current environmental education and its implementation in public schools as well as its influence on environmental awareness and behavior with regards to possible underlying aspects. I believe that the way education and other determinants influence our awareness and behavior opens up a broader and general discussion on the topic of environment.

We should keep in mind that having the knowledge of what protects or harms our environment does not necessarily entail that we act on it. "It is one thing to know, another to do" (Lundgren 1999, 19). This can be clearly seen in wealthier people being well aware of the harmful consequences of, for instance, taking a plane but still deciding to do so. There are various subjacent factors influencing environmental behavior such as knowledge, means and will. The intention to act environmentally friendly arises from social and personal determinants and needs to go in hand with the ability to do so.

Thus, I am going to point out and critically discuss the underlying aspects of the complex relation between environmental education, knowledge and behavior in developing countries. Meru County in Kenya serves as a case study through which I am trying to gain a deeper understanding of current environmental education in public schools and its effects on individuals.

1.1 Aim

The aim of this thesis is to explore the complexities and links between environmental education, awareness and behavior. This thesis therefore investigates in what students and teachers in Meru County learn about environmental issues in order to grasp the connection between environmental awareness and behavior. Both, the perspective of teachers and literature in this field are taken into account. Ultimately, this thesis intends to find possible enhancements suggested by the teachers and literature.

1.2 Research questions

The following three questions will be in focus of my investigation: (1) What do teachers of public schools in Meru County know and think about environmental issues and environmental education? (2) How do they teach it to their students and how do they perceive environmental behavior in Kenya? (3) What are, according to the local teachers and literature, possible enhancements in environmental education?

1.3 Overview of thesis structure

First, I will give some background information about Kenya's history and its education system as well as environmental education and environmental behavior. This part provides the information necessary for the following chapters and aims to create an understanding of the complexity of environmental education and behavior in Kenya. The literature review relates and discusses the research previously done in this field and highlights the importance of reflecting on the issue discussed. Continuing with the analytical framework, in which I reflect on my position as a researcher, I will then state my concept of science and knowledge and further explain the theories that are of importance to my thesis. Before I present my empirical data and analyze the collected information, I will point out and describe the tools of my case study, as well as the process, in the methodology part. The results will show teachers thoughts about environmental issues and education. The discussion chapter analyzes the perception and ideas of the teachers in comparison with the literature. The current situation and possible improvements are discussed while keeping influential factors in mind. The conclusion will answers the research questions and gives a final overview of the thesis' content.

2 Background

2.1 A Brief History of Kenya

In order to get a clear picture of the present situation in Kenya a brief summary of its history is needed. Pre-colonial communities in Kenya had agricultural economies and pastoralist forms of production and adjusted to their given ecological surroundings (Ndege 2009). The work was performed collectively, rather than individually, which is customary in Western culture (ibid.). Many scholars such as Young (1990) agree that colonialism had a lasting impact on Africa and its nations. The Portuguese ruled Kenya before Britain established a Protectorate in 1895 following the Berlin Conference. The British opened the fertile land for British settlers, which were allowed to be politically active, while Africans were prohibited from direct political participation until 1944 (Kenya 2015 Country Review). In 1920 Kenya officially became a United Kingdom colony. Colonial rulers replaced indigenous leaders, dominated politically, and formed policies (Ndege 2009). The agricultural economy was replaced by a strong capitalist system, characterized by political and cultural domination and economic exploitation (Nedge 2009, 2). Production in Kenya was cheap and the motive of the British was simply economic benefits (ibid). Power structures between the colonizer and the colonized become clear and during World War II the political and economical power of the settlers increased even further (Sulfina 1992). Nevertheless, "many Africans responded effectively to the opportunities offered by expanding local and external markets" (Sulfina 1992, 203). Over time, productivity has increased due to modern methods of cultivation.

After the Second World War, Kenya was even more exploited and heavy production and inappropriate practice led to environmental degradation such as wood clearings for individuals and companies. Small local industries were destroyed and the country suffered cultural decline, caused by dominant Western education and Christian missionary activities (Nedge 2009). On the contrary, Sulfin (1992) refers to Zeleza who argues that administrative structures such as confiscating livestock, introducing taxation, building rail and creating financial structures had been established during the colonial period, hence highlights the economic progress that Kenya made during that time. However, it can be argued that in regards to the environmental problems we are currently facing, economic growth has had a rather negative effect on our natural surroundings.

Kenya gained independence in 1963 and became a republic under President Jomo Kenyatta in 1964 (ibid.). Throughout its history, Kenya has struggled with instability due to conflicts between different ethnic groups. For instance a clash between the Kikuyus of president Kibaki and the Luo of opposition leader Odinga caused riots and violence in the whole country after the election in 2007 (Kenya 2015 Country Review). Also during the presidential and parliamentary Election Day in March 2013 riots and violence were reported (ibid. 25). The security of the country suffered under several terrorist attacks such as the bombing of the U.S. embassy in Nairobi in 1998 as well as other violent attacks, killings, and kidnappings. In 2013 after an attack on a popular shopping mall in Nairobi further violence acts were committed and Al-Shabab, a jihadist terrorist group, made it clear that its main target outside of Somalia was Kenya (ibid.).

Another major issue dominating Kenyan politics, both currently and historically, is corruption. After the independence, income inequality and poverty have become more prevalent and the local bourgeoisie accumulates wealth and power through high-level corruption (Ndege, 2008). Plans for anti corruption strategies have been announced at various times, but Kenya is generally viewed as one of the most corrupt countries in the world, consistently ranked in the low end of the Corruption Perceptions Index (Kenya 2015 Country Review, 14). In 2002 President Kibaki ruled the government and directed attention at ending the widespread fraud in order to receive aid again. World Bank President James Wolfensohn said: "The reasons we diminished our support was because some issues had not been adequately addressed. But with the new government, we have changed our perception of Kenya and we are anxious and ready to support the country" (ibid, 14). Kenya's economy has been continuously been dependent on foreign aid and international monetary funds in order not to stagnate or decline.

2.2 Present Kenya

From a brief overview of Kenya's past, we are now coming to more current facts and issues of the country. The vast majority of Kenyans are Christians, ten percent of the population practice animist indigenous beliefs and an equivalent portion are followers of Islam (Kenya 2015 Country Review). The population growth rate is 2.79 percent and the fertility rate is 4.7 children born per woman. Life expectancy at birth for the total population is 56.6 years of age, according to recent estimates (ibid.).

Agriculture, manufacturing, and services constitute as the main sectors of Kenya's diverse economy (ibid.). Kenya's economy furthermore depends on tourism and the export of tea and

coffee; fluctuations in world prices of these have a strong impact on Kenya' economy. The unemployment rate is high and the value of the local currency, the Kenyan Shilling, is low. The spread of HIV/AIDS and other diseases is a struggle for the country. Furthermore, droughts have been common, especially in the North of the country. In 2000, tens of thousands were depended on the support of emergency food aid and another devastating food crisis occurred in 2011.

The "Kenyan country review 2015" states that the government has followed environmental policies and objectives for decades aimed at preserving and conserving its unique and diverse ecosystem but much of the results are due to the support of non-governmental organizations (ibid., 201). Kenya is currently struggling with a number of environmental problems: water pollution from urban and industrial wastes, degradation of water quality from increased use of pesticides and fertilizers, deforestation, soil erosion, desertification and threats to wildlife population (ibid.).

2.3 The School System in Kenya

Kenya's current school system is heavily influenced by the colonial past. Urch (1971) states that the newly independent nations have to deal with institutions that were imposed on them by the former British colonial power, and those institutions have only little connection to the daily lifestyle of Africans and their needs. "The modernization process in the Third World often presents situations in which western educational ideas are being transplanted into significantly different socio-political climates than where they first originated" (Kay 1975, 183).

Urch (1971) explains that in former British Africa, each territory had its own educational program since each governor had his own ideas on how to educate the natives. Hence, there was no uniform policy. Some colonial leaders tried to develop a program based on the locals and their life, despite their favor of rapid Westernization (Urch 1971). It was argued that maintaining the traditions and the African culture was important for the well-being of the individual African and therefore the advanced ideas should be integrated in the existing culture. Yet this approach admitted the necessity of modernization and of students getting used to the new modern world (Ibid.).

During the colonial era, European settlers developed conflicting policies and different educational programs were implemented in Kenya, for instance the missionaries, officials and governmental schools (ibid.). Traders and missioners concluded that the population should be educated in order to be able to spread commerce and Christianity. The curriculum at that time was dominated by reading and writing because it was necessary to understand the bible. This also created a trend towards the English language. Educational projects of the missions started to expand fast and the power and prestige of the Europeans grew. "The African was drawn toward Christianity in his desire to learn more about the white man's world [...]" (Urch 1971, 251). The Kenyans connected Christianity with the chance for education and better chances for a god job. The colonial government began to see the necessity of training Africans in order to fulfill the demands for skilled native labor and to implement a monetary system. Hence, the educational goals of the missioners and the government differed. In 1909 the colonial officials assigned Professor J. Nelson Fraser with the challenge to create a good over-all educational system without reinforcing plans for literacy education

but to develop a scheme for industrial training. He stated that the locals prefer their lifestyle and would only change if they were forced to. Therefore, the problem lies in inducing the African to participate in this form of education (ibid.). Furthermore, Fraser suggested that the government should take control for the whole country. However, as the government lacked the financial capacity to do so and since missionaries would only give financial aid if they could continue their education, he recommended assisting them, even though he did not agree with their form of education (ibid.). The government created three categories: "General Education"- carried out by missionary society for literacy, "Industrial Education" for example for carpentry, agriculture, tailoring, printing and medical work including literary training and the third category "Education of Sons of Chiefs and Headmen" designed to prepare young men to participate in the administration of the territory. "The one great hope for progress in Africa, they felt, was the application of European knowledge, experience and skill" (Urch 1971, 250).

The Commission report in 1919 stated that schools will not succeed without religious and moral instructions and that it would be best to utilize the existing organizations. "Christianity was considered as essential for the civilization of the native" (Urch 1971, 256). The commission recommended literary education with hand and eye training for pupils up to eleven years and afterwards students could attend schools for a specific industrial job (teacher or industrial training) while studying obligatory subjects such as English grammar, literature, arithmetic and history (ibid.). An official policy from the education department was published in 1922. All schools were categorized and received government grants and once assigned they were required to be open for inspection at any time. The principal was required to keep a logbook with a lesson plan, and a system of inspectors was organized.

After World War II the concept of development gained a lot attention and therefore, the colonial government had to take greater responsibility towards the Kenyan population. "There was a growing recognition that the education of the indigenous population was the concern of the controlling government" (Urch 1971, 257). The government invests in discovering the educational needs of Africans and resulting in a study on education of the African continent, the Phelps-Stokes reports. The researcher team stresses the arrogance of the Western civilization imposing a superficial imitation of European ways on them. The researcher team questioned the reason for teaching European and American history and geography while ignoring the moral essential elements of the local environment (ibid., 259). The reports recommended an adaptation to the African national and social environment. This concept was later accepted by the education department in British Africa (Urch 1971, 260). Each administrative area got a district education committee, which was responsible for the efficiency of each school within their district and to create cooperation between missionaries and government.

Urch (1971) claims that due to a growing interest in the developing Western society and the desire to become part of this world independent on how it affected the indigenous life, "the attempt of the government to introduce an education relevant to the traditional needs of the African in his tribal community was not well received. Instead, the African perceived in education an opportunity to become part of the Western World" (Urch 1971, 262). Concluding that the colonizer tried to educate Africans in accordance to their social lifestyle, while the Africans had the desire to become more Western (ibid.).

Leaving the colonial history, I will now highlight and discuss the postcolonial period. A rapid increase of school enrollments occurred, according to Buchmann (1999), as result of the importance and faith given to education. It was presented as the key for social and economic development and would lead to higher life standards. She argues that arising from the postcolonial time the state is responsible for two current problems in Kenya's education system: the unbalance between education and the labor market and the competitive education system.

After the independency, the government was not strong enough to provide more than primary school education, only a few secondary schools were provided. Local communities raised funds and rapidly built so called "Harambee" secondary schools. Harambee, in Swahili "let us all pull together", was originally meant for development in the general society sector but for most Kenyans, especially after independence, building schools for everyone was most important. By 1974 over six hundred secondary schools were built and these also strengthened the sense of national unity. In regards to trained teachers and the class size the quality of the Harambee schools was worse than in governmental schools and students therefore aimed for high grades in primary school so they could attend governmental secondary schools. President Kenyatta realized that he was losing control over the education system and therefore the Ministry of education made it illegal to build a school without permission and further introduced a law that the community must collect a high amount of money before building a school. These unpopular laws were generally ignored and the government did not have the organizational strength to keep up enforcing the law (Buchmann 1999). The Development plan (1970-1974) outlined government aid to 50 Harambee schools but only about 25-30 Harambee schools received that aid in the form of equipment, facilities and teachers (Buchmann 1999, 101). The Kenyatta era was characterized by uncontrolled education expansion, which resulted in having many educated people that were not able to find employment (ibid., 100).

Under leader Moi educational expansion continued and the introduction of the 8-4-4 system in 1983 gave greater educational opportunities to all Kenyan children. Economic stagnation, increasing unemployment and the rise of prices forced Moi's government to deal with a mismatch of education and employment (Buchmann 1999). They attempted to do so by increasing the amount of jobs in the public sector, and by encouraging "education for self-reliance" (Buchmann 1999, 103). The renewed curriculum was supposed to prepare students for agriculture or the informal sectors instead of higher education. However, adding vocational subjects to the curriculum raised the costs of schooling, which the government could not afford. The Ministry of education came up with the idea of "cost sharing" by parents and communities to maintain these schools. This gave more power to parents and teachers and governmental schools became more like Harambee schools. However, parents who could not afford it had to seek for other educational possibilities. Ultimately, the new policy did not solve the issue of unemployment.

In 1995 the government put limits to the school fees so that the majority could afford sending children to school. However, headmasters often ignored these laws (Buchmann 1999). In 1995 the government additionally announced a new ranking of secondary schools: national, provincial, district, high-cost private and low-cost private schools (Daily Nation May 26, 1995 in Buchmann 1999). Hence, some secondary schools were better funded and required higher grades from primary school. This created a high pressure on students to perform well

in primary school - an ongoing issue. Anne Mungai (2002), an international scholar, had personally experienced education in Kenya and explains in her work that in order to be able to go to national schools, students need to pass primary school national exam with high grades. National schools are the best in the country, but provincial and public schools also have teachers provided by the government (ibid.). Students with bad results are sent to Harambee schools (ibid.).

The current system is still based on eight years of primary and four years of secondary school plus four years of university. In order to graduate from secondary school students sit through a final exam, namely The Kenyan Certificate of Secondary School Education (KCSE), which is examined by a governmental agent. Various subjects are taught at secondary school though not all subjects are taken by every student, students can choose what to focus on. Environmental issues are supposed to be taught inductively, implemented in other subjects as a matching topic.

2.4 Environmental Education

I am going to outline the concept of environmental education including its history along with policies. Since I am focusing on the actual practice in Kenyan secondary schools from the viewpoint of teachers as well as their personal knowledge and perception of environmental issues, I am not going to discuss international policies and goals in detail. Yet, I see an importance in providing an overview of environmental education as such and to acknowledge what has been done and achieved in this field.

Throughout this section, we should keep in mind that politics influence the education system and its goals (Schleicher 1989, 259) - be it on a national or international scale.

Environmental education developed out of the growing environmental concerns during the 1970s in Europe (Schleicher 1989), hence it is a Western concept to which, over time, more attention and importance was given and it is now implemented on an international scale. According to Carter and Simmons (2010), the exact origin of environmental cannot be determined; it can be traced back to many scholars and events, however the UNESCO Conference on Human Environment in 1972 in Stockholm was certainly a major turning point. The declaration of the Conference highlighted the importance of promoting Environmental Education among the young generation and adults (UNESCO 1972).

In 1975 the International Environmental Education Programme was created through the United Nations Environmental Programme (UNEP). The aim was to progress environmental education on an international level, to extend the global networking and to exchange ideas and information. Furthermore, the program should coordinate research in order to gain deeper understanding and find new methods, approaches and material for environmental education (UNESCO-UNEP 1975). The UNEP (1975) favors an interdisciplinary approach as well as formal and informal education at all levels in order to reach out to the general public (ibid.) Current and future situations should be considered and the environment be seen in its totality, development and growth should be examined from the environmental perspective. Schleicher (1989) states that in the early stages of environmental education, only scientific physical aspects, including technical repair, were of concern. However, over time human behavior and social norms gained importance.

The Belgrade Charter, built on the framework of the Stockholm conference, suggested that environmental education should be a lifelong interdisciplinary process from primary to tertiary learning and described the goals, objectives, audiences and principles of environmental education (Carter and Simmons 2010). Carter and Simmons state that the commonly accepted definition of Environmental Education can be found in the Belgrade Charter (UNESCO-UNEP 1976, 2):

Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones (ibid).

The Declaration of the Intergovernmental Conference on Environmental Education held in Tbilisi (1977) gives a clear definition of what environmental education is and ought to be and highlights goals which are, according to Carter and Simmons (2010), the foundation for much of what has been done in the field since. The goals of environmental education are listed in recommendation No.2:

- (a) to foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;
- (b) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;
- (c) to create new patterns of behavior of individuals, groups and society as a whole towards the environment (UNESCO 1978, 26).

Schleicher (1989) refers to the Tbilisi declaration, which states that environmental education should focus on the complex connection between socio- economic development and the environment, hence the need to “consider the environment in its totality, including economics, political, technological, cultural-historical, moral and aesthetic aspects. Moreover, it should be interdisciplinary as well as local and international and provide the student with the opportunity to make decisions and accept the consequences” (UNESCO 1978 in Schleicher 1989, 266)

In 1987 a conference in Moscow was held in order to develop the International Strategy for Action in the Field of Environmental Education and Training. The goals of this overall strategy were concerned with creating effective models of education, create a general awareness about environmental problems, and create an acceptance of the need to address these problems and develop a strategy for training personnel (UNESCO-UNEP 1987, 6)

The United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, had the Agenda 21 document as an outcome, which in contrast to previous mentioned conferences not only focuses to strengthen the concept of sustainable development but also includes human well-being as a central aspect. Chapter 36 highlights the importance to extend the capacity of people that can be addressed with environmental issues, yet this cannot be solved through education only since it might not reach everyone (UN 1992). In regards to the latter, another important document is the Dakar Framework for Action in Education for All (EFA) from 2000, which introduces the underlying goals of ensuring education for all ages and groups and gender equality within its system in order to achieve improved average literacy and education quality (UNESCO 2000, 8).

Since all policies, mentioned above, are designed for international utilization, they can and should be applied in Kenya. Not only can vast international NGOs such as UNESCO act as

agents to educate the public and students about environmental issues also local NGOs such as the Kenyan Organization for Environmental Education (KOE) should be acknowledged. KOEE was founded in 1997 as a project regarding “Agenda 21” and encouraged to participate actively in addressing local environmental issues and struggles through national and regional programs, people and communities (<http://www.koe.org/>).

Carter and Simmons (2010) refer to four elements of environmental literacy defined by the National Project for Excellence in Environmental Education in 2004. Accordingly, environmental literacy can be achieved if the student is willing and able to ask questions about the surrounding world, seek and evaluate information, create hypotheses and develop answers and further on find and formulate potential solutions. Moreover, environmental literacy depends on the understanding of environmental processes and systems and on the students’ motivation and understanding of the fact that their individual and group behavior causes a difference in their world (Carter and Simmons 2010, 13).

After presenting the concept of Environmental Education, including important political documents and conferences I want to point out that these are idealistic goals and ideas that are very unlikely to be fully implemented in practice.

As exemplified by Schleicher (1989) who claims that the political concepts and policies are very optimistic, the school reality would look different. He gives the German education as an example and states that the main focus still lays on a scientific aspect, giving information to the students rather than focusing on their behavior and actions. The results of an in depth study in Germany showed that the policies are not applied in school practice (Schleicher 1989) and it can be assumed that this is the case in many nations worldwide. An analysis of the curriculum of the first year in secondary schools, in 1979 showed that about two thirds of environmental topics are treated within biology and geography and social subjects seldom touch up on it.

I argue that these policies are good guidelines, helping to improve creating environmental awareness and action among us humans. However, the practical implementation depends on available resources, cultural aspects and the will and importance that are given to environmental education.

2.5 Environmental Behavior

In theory, the outcome of environmental education should be awareness and a suitable pro-environmental behavior but “explaining human behavior in all its complexity is a difficult task” (Ajzen 1991, 179). Trying to predict and find reasons for why humans act or do not act belongs to the field of psychology, yet it is of importance in order to understand and change humans’ interaction with nature and its effects. From the perspective of human ecology, environmental problems arise from a “society crisis”; hence, they can possibly be solved through a new kind of consciousness and a responsible, sustainable lifestyle (Steiner and Nauser 1993). We could assume that students would act upon the information and knowledge, which they have received, but it does not appear to be that simple. I therefore want to touch upon the issue of behavior and action and discuss which factors influence them.

The common logic is that if people understand what pollutes they can employ this information in various situations and act less destructive towards the environment (McGuire 2015). Gifford and Nilsson (2014) refer to a study of knowledge surveys which had shown that children who were concerned about the environment had more scientific knowledge and conclude that making pro-environmental choices is difficult if one has incorrect or no knowledge. Hence, gaining environmental knowledge is important but if it influences decision-making can be questioned. Gifford and Nilsson (2014) state that in most countries individuals with more education are more concerned about the environment. Yet it can be questioned if and how this environmental concern leads to action. Schleicher (1989) stated that more attention in environmental education should be given to changes in values and behavior and less to external threats such as pollution since the majority of people do not act environmentally friendly despite a quite high environmental literacy rate. However, a behavior such as reusing a plastic bag and recycling is not enough to stop environmental problems such as climate change (McGuire 2015). McGuire (2015, 706) claims that environmental education has exactly this less-harmful behavior as a goal and argues that instead a method that leads to a long-lasting behavioral change and toward more ecologically responsible decisions would be needed (ibid.).

Psychology investigates closer and understands how information and its processing affects our behavior. McGuire (2015, 695) analyzes the effectiveness of environmental education in regards to an ecologically responsible behavior through the lens of psychology. He argues that knowledge and attitudes are misunderstood in the way they are used in the moment of making a decision. A decision or choice is made automatically, without further reflection, and hence is strongly connected to the personal identity (ibid.) Thus, McGuire (2015) claims the moment in which people make a decision must be addressed and understood and he favors the use of self-identity in environmental education as a mediator. Through developing a pro-environmental identity, decisions and behavior would be influenced positively. McGuire (2015) argues that a controlled process through an environmental frame, including contact with others and their perception of and action towards environment, an environmental identity will begin to form. In other words, a certain environmental frame given by others can create or lead to a specific personal environmental identity.

Keeping in mind that arguing for a change in behavior “implies that we know how an ecologically responsible person should behave in order to solve the environmental problems we face.” (McGuire 2015, 706)

The self-identity which according to McGuire (2015), leads to pro-environmental behavior regards to the actual character of a person and the perception about the self. Gifford and Nilsson (2014) include the personality and self-construal in the category of personal factor that influences pro-environmental concern and behavior.

Non-psychological factors such as geophysical conditions and political influences are the results of an attempt to categorize factors affecting environmental behavior on a macro scale (Gifford 2006 in Gifford and Nilsson 2014). On a smaller, individual scale, Gifford and Nilsson (2014) have created two categories by listing and referring to recent research – personal and social influences. Those personal and social factors include for instance childhood experience, education, sense of control, values, political and worldviews, responsibility, place attachment, age and gender, religion, urban and rural differences and social class (Gifford and Nilsson 2014, 141).

I will now give a more in-depth presentation of some factors that are of importance for my case study, starting with individual aspects. Since different generations have diverse environmental consciousness and action, age can be seen as a factor that adds to our behavior (ibid.). Personal worldviews strongly influence our decision-making and behavior. A Norwegian and an Australian study have shown that younger people seem to be less egocentric than older people and therefore care more about their surroundings. Another result that Gifford and Nilsson (2014) discuss in their article is about citizens who are less materialistic and tend to be concerned with “higher-level” goals and actions such as self-improvement, personal freedom and participating in politics. Additionally, individuals that have a strong attachment to a place feel responsible for it and want to protect it (Gifford and Nilsson 2014). Activities like watching news or documentaries and some kind of outdoor activities that do not involve consuming (e.g. fishing) create a higher environmental concern (ibid.). Moreover, the character of a person influences their behavior. For instance, emotionally unstable people tend to be more worried about the environment since they are generally concerned about various aspects of life (Gifford and Nilsson 2014). Studies have shown that openness, agreeableness and conscientiousness were strongly linked to environmental engagement among people and nations (ibid.). Gifford and Nilsson (2014) point out that many contradictory studies about gender have been done and concluded that there cannot be a strong difference in environmental consciousness between men and women.

Furthermore, the social aspects as determinants of behavior will be listed. By many authors, religion is often seen as the origin of environmental concern. Liberal religions in America are less likely to emphasize a domination of nature and “Christian beliefs seem to be associated with a stewardship form of concern (the responsibility to maintain and wisely use the gifts that God has given) and the structure of environmental attitudes might therefore differ from non-religious groups” (Gifford and Nilsson 2014, 148). Depending on whether you come from an urban or rural area, environment is experienced differently but if, and in that case, how that affects the environmental concern and behavior has been resulted contradictory in various studies. The belief in how things are usually done has a strong impact on our behavior.

Social class furthermore influences behavior and intentions. Various researchers have concluded that citizens of richer countries have a higher environmental awareness, demonstrated through the clear connection of the Gross Domestic Product and environmental concern (Gifford and Nilsson 2014). It is argued that a higher income leads to the demand of a good environment and the economic situation makes that easier to implement this requirement, secondly increased wealth develops people values beyond materialism, particularly since they do not have to worry to meet basic material needs and therefore can create an awareness of environmental issues (ibid.). Gifford and Nilsson (2014) add that this environmental concern might arise due to educational differences. However, studies have proved that citizens of poorer countries such as Nigeria appear to be more concerned about environmental problems than citizens of industrialized countries; people in developing countries have as much, or more, environmental concern as those living in developed countries (ibid.). According to Gifford and Nilsson (2014), this contradiction in research arises from former studies analyzing environmental concern of whole nations and not individuals, also interpreted as global versus local. In general,

respondents of developing countries seem to be more concerned about local environmental problems likely due to poor people having more environmental problems in their close surroundings (Gifford and Nilsson 2014). Gifford and Nilsson (2014) further acknowledge that some people engage in pro-environmental behavior without necessarily having any of the influencing factors mentioned above. They behave in a certain way due to their health, to save money (isolating the home), or recycle and reuse because they are poor. Gifford (2011 cited in Gifford and Nilsson 2014) refers to these people as “honeybees” since they are pursuing some completely different goal but provide an important side-benefit to the environment.

The main challenge that occurs when studying environmental behavior is how to measure and prove it. Studies based on self-reported behavior cannot truthfully examine the real behavior of the participants. However, the majority of studies addressed reported behavior, which is assumed to reflect the actual behavior of people (Gifford and Nilsson 2014). Zelezny (1999) analyzed previous studies and concluded that mainly weak, poor research methods were used and only a few of them have measured actual behavior. “[...] most of the studies measured self-reported or inferred environmental behavior rather than observed actual environmental behavior” (Zelezny 1999). Critics have claimed that few Environmental Education interventions lead to responsible environmental behavior because they do not actively involve students in environmental issues (Zelezny 1991). She refers to Disinger (Disinger 1982 cited in Zelezny 1991) who recommends that Environmental Education in nontraditional settings, outside the classroom may be more effective in order to change environmental behavior among students.

Zelezny (1999) conducted a meta-analysis, comparing the effectiveness of educational interventions in classrooms and in nontraditional settings. All classroom intervention studies reported improved pro-environmental behavior and were more effective than interventions in nontraditional settings (Zelezny 1999). Additionally active participation was more likely in interventions implemented in classrooms than in nontraditional settings (ibid.). Zelezny (1999) concludes that the study review showed that educational interventions can improve environmental behavior and an active participation influences it positively.

To summarize this section, shows that education is not the only factor influencing our behavior and this needs to be kept in mind when conducting investigations in the field of environmental education. Various underlying aspects add to our decisions and actions made in daily life, yet education and teachers contribute. Hence, an intentional change in behavior therefore needs to pay attention to education and its possible influence.

3 Literature review

Various studies and literature can be related to environmental issues in Kenya but only a few focus on the perception or environmental education, i.e. a low number of studies combine environmental education in Kenya and teachers’ perception of it.

The urgency of reacting to environmental problems can be seen in the effect on people’s daily life, for example in the melting of the ice cap of Mt. Kenya, which is the main source of water for many Kenyans (Gitau 2011, 311). Another current environmental struggle is pollution through industries, which causes health problems due to bad air and polluted water

(Gitau 2011, Omanga et. al 2014). Solid waste and its bad management also contribute to pollution of the natural surroundings. Njeru (2006) studied the issue of plastic bags, which are consumed in the high amount of 24 million per month and disposed improperly (Njeru 2006, 1046). Gitau (2011) relates the rapid population growth in Africa to the common perception that many children are a blessing for the family and highlights that this will further lead to more environmental problems.

Given these environmental issues as a threat for humans as well as nature, there is an obvious need for action and change. Shisanya and Khayesi (2007) argue that the government of Kenya has to develop a plan for mitigation and adaptation and should not remain at the level of discussion and formulating policies.

Environmental education is an important tool to change the environmental behavior in a country. However, this is often not prioritized due to other social issues. Shisanya and Khayesi (2007) state that “the global concern about climate change appeared like a mere drop in the oceanic context pervaded by problems of poverty, unemployment, crime and corruption [...]” (ibid., 271). Gitau (2011, 310) also sees a relationship between poverty and environmental destruction: he argues that poverty makes people either forget or ignore the issues at hand and that it is a luxury to be engaged in environmental conservation and discourse.

Since my study presents the perception of teachers on environmental issues and its education, I am going to discuss several outcomes on the perception of environmental problems. When reflecting on environmental problems, we should first question how people perceive this issue and if the locals see and define it as a problem. Shisanya and Khayesi (2007) investigated in, how much significance is given to the physical environmental threat of climate change in comparison to the socio-economical problems such as corruption, unemployment, crime and poverty by people in a developing world. They conclude that the respondents did not perceive climate change as a serious problem in Nairobi (ibid.). Shisanya and Khayesi (2007, 272) add that the problem needs to be defined as such in order to make people act upon them. An issue must be clearly perceived as a risk to people, a community or a government in order to take action and to manage them (Weber 2006 cited in Shisanya and Khayesi 2007). In their study, climate change was measured through global warming, i.e. temperature rise, El-Niño rains and flooding. The results have shown that unemployment (81 %) was seen as the highest significant threat, followed by corruption and crime (ibid.). Concerning the factors of climate change, flooding was seen as most significant (38%) after the El-Niño rainfalls and global warming. However, these issues have not been perceived as important as other socio-economical struggles (Shisanya and Khayesi 2007). Conversely do Omanga, et al. (2014) come to the conclusion that people in rural Kenya are well aware of the health risk of industrial air pollution. Their study investigated in environmental perception and knowledge as well as the perception of pollution threat to their health and the results showed that over 80 percent of the respondents see a considerable risk in the pollution from the industries around even though the economy in this area was depended on the factories (Omanga, et al. 2014). Omanga, et al. (2014) state that more and more people are nowadays afraid of environmental hazard; however the results have also indicated that the respondents have not taken action in finding solution to environmental challenges. This questions the idea of acting upon a perceived threat (Shisanya and Khayesi 2007). Omanga, et al. (2014) see the reason for people not taking action in their limited

capacity to defend themselves and a lack of information about their rights. Therefore, people from rural areas and low-income classes should be empowered to speak up and act (ibid.). All respondents were concerned about pollution which, according to Omanga et al. (2014), stands in contrast to the common view that people with low income have more important problems and do not have the capacity to worry about the pollution of the environment.

Perceiving environmental issues as a problem differs from simply having an environmental awareness. With regards to environmental awareness the study of Mutisya and Barker (2011), carried out in eleven primary schools around Narok in Kenya's Rift Valley evaluating the environmental awareness of 276 pupils, would be in line with Omanga, et al. (2014). Most pupils were aware of the key environmental issues in their local area and they mostly understood the causes and effects and further had ideas for solutions to some of the environmental issues (Mutisya and Barker 2011, 55). Both studies proofed environmental awareness among Kenyans, however one focuses on students while the other investigates rural communities living close to a factory. Another study on environmental perspectives, focused on the point of view of Kenyan community members and teachers and how the participants perceptions differ or overlap (Quigley, et al. 2015). Quigley, et al. (2015) concluded that many participants share the concern about environmental degradation as well as other perspectives on environmental issues, yet it is not surprising that the discussion about solutions would bring up disagreement and contradicting viewpoints.

Before I am going to discuss the different solutions that the authors suggested, I will now present the detailed outcome of the various studies. The study of Quigley, et al. (2015) showed that participants had a shared view in regards to the negative cycles of environmental degradation and economics. The group discussed the negative influence of economics on the environment and stated how those selling and producing charcoal are taking advantage of the poor people who will buy it because it is cheap despite knowing that it is bad for the environment. The participants further shared their opinion on inappropriate prices for important goods since they might be cheap but ecologically expensive. One of the teachers argued in the "we-intention" not to buy imported goods (ibid.). Additionally, the groups highlighted the importance of empowerment and utilization of indigenous knowledge and agreed upon the idea of incorporating parts of indigenous knowledge in the school curriculum (Quigley, et al. 2015, 1092). Group members disagreed on the extent to which the government and innovation should be involved in the solutions (ibid.). Some felt that solutions lay in communities while others felt that a change could only happen with the help of the government. The outcome of this study presents the thoughts of teachers and pays attention to their ideas, similarly to my study. However Quigley, et al. (2015) focus on social learning and on the group while I studied the personal opinion and knowledge of the individuals.

Mutisya and Barker's study (2011) focuses on students' awareness of environmental degradation. This results show that pupils are aware of deforestation in their areas since 83.6 percent of pupils have observed uncontrolled cutting down of trees in forests near their villages. Most homes in the area used water from rivers, rain and boreholes. Since only 43.1 percent of the pupils perceived this water to be dirty, it can be assumed that this is due to not directly observable water pollutants. Thus, the students do not identify all environmental problems (Mutisya and Barker 2011). The results revealed that 69.5 percent of the pupils consider Narok town as dirty. Additionally, solid waste disposal and poor sewage disposal

was identified as the main human activities lowering the standards of cleanliness. Breeding grounds for mosquitoes and spoiling of scenic beauty are problems associated with improper disposal of garbage. The causes of deforestation were seen in charcoal burning, as the major factor, clearing land for farming, the sale of timber and cutting firewood. Moreover, students have been asked how to handle solid wastes according to the provided options. Very few pupils proposed that organic and inorganic waste should be put in the same waste bin but similarly few pupils proposed that waste should be recycled or used as compost (Mutisya and Barker 2011). Omanga et al. (2014) concluded that air pollution through industrial and cigarette smoke was perceived as a great risk to health. However, in the center of the study was the perception of control and the majority of the respondents reported low levels of control in environmental and public health issues.

Ndaruga's studied the implementation of special days, which should be used to reflect on important issues and challenges of humanity and the environment. Such days should deal with wetland, water, resources, weather, health, families, wages and working conditions, refugees, drought, HIV, disabled people, human rights (Ndaruga 2003, 109). Fifty-nine percent of the respondents celebrated environment days in school, while forty-one percent did not. Environmental days are more popular in schools than at the community level, only thirty percent of the teachers celebrated at the community level. Moreover, rural teachers are more involved in celebrations than urban teachers are. The findings reveal that local environmental days were more popular than national days and international days (Ndaruga 2003). Activities during those days are physical action to maintain and improve the landscape, so called eco-management activities such as planting trees and cleanups, soil conservation day or water conservation day (Ndaruga 2003). The teachers gave various reasons as to why environmental days were not celebrated in schools. For instance, that the curriculum's emphasis on exams, due to a lack of information about these days, the school's ignorance of environmental days and a lack of motivation and interest by teachers (ibid.). Other problems mentioned by single respondents included lack of adequate knowledge about school issues, the school administration not being environment-friendly, lack of time, lack of qualified people to handle environmental activities, and missing funds to transport pupils to venues where environmental days are celebrated (ibid.). At the community level, the reasons were lack of local support and motivation, no opportunities for teacher to speak during meetings, no encouragement at schools, lack of knowledge and confidence to address the community or no interest from the community, lack of time or that the urban context prevents from reaching out to community (ibid.). Ndaruga (2003) argues that teachers may not be aware of the relevance to their work of celebrating environmental days.

Matthews (1995) study focuses on environmental mapping skills of students in a bush town Meru County and their general perceptions of daily surrounding and living areas. However, the social and cultural influence, which Matthew (1995) views as crucial to the perception of children's surroundings and the way in which children encounter place and make sense of their everyday worlds is of importance for my study (Matthews 1995, 285). He states that meanings are constructed and understood through culture; culture influences the view and way of seeing things as well as the pattern of everyday behavior (Matthew 1995). Additionally, Matthew (1995) points out that children develop differently depending on the environment in which they grow up in and that their attitude is strongly influenced by their parents.

All authors gave ideas for possible solutions to the environmental topic investigated. Quigley, et al. (2015), for instance, argues for a social learning approach, i.e. having discussions and finding agreement within a group. According to this, through social learning people become experts and it encourages collective action and helps in understanding how humans interact with their environment (Quigley, et al. 2015). Group conversations should shift towards an understanding of each other's perspective or even shared perspectives since this creates the opportunity to make decisions as a collective or act as such. In this case, various voices can engage with each other rather than having students that simply receive information (ibid.). The researcher group further states that people who have a shared point of view are much more likely to act upon those. The "we-perspective", a commitment made within a group, or the "we-mode", the willingness to act due to the viewpoint that "I am doing X because our group is doing Y, and doing Y requires that X be done" subsequently leads to possible action (Tuomela 2007 cited in Quigley, et al. 2015). Additionally, the group can conduct a joined action (ibid). Quigley, et al. (2015) point out that environmental education should provide context-based, real-life situations for students to discuss their perspectives on environmental issues. The concept behind the place-based education theory represents exactly these thoughts (Smith 2013). The study of Quigley, et al. (2015) involve community members as well as teachers with the goal to create a space for dialog which goes in line with the arguments of place-based education in order to gain experiences outside of the school and to include the local community (Smith 2013). Smith (2013) argues that this makes it easier to apply the knowledge in daily life situations. Furthermore, Ndaruga (2003) recommends to work closer together with communities to address environmental issues and that activities should go beyond eco-management to create critical reflection on the causes of environmental degradation (ibid., 115). Quigley, et al. (2015) refer to environmental problems as wicked problems, a term that is used to describe complex, unique and ill-defined issues, which are often political and economical entangled, exist in a unique context, are improperly defined. They are therefore hard to agree on and clear solutions are complicated to find (Quigley, et al. 2015). In accordance with most studies about environmental issues, Ndaruga (2003) highlights the complexity of the topic referring to its social and political connections. Quigley, et al. (2015) argue that in order to address these social factors, communities should be included in environmental learning. Similar to Ndaruga (2003) who argues that the physical activities implemented during environmental days simply maintain and improve the landscape but do not give real solutions to the problem, they mitigate the circumstances but do not address the underlying causes. Environmental day activities should deal with more complex issues such as access and distribution of resources or environmental justice (ibid.). Ndaruga (2003) states that it is the teachers' responsibility to give input to the pupils and make them reflect upon such complex environmental problems. Yet, the data of Ndarugas' study shows that teachers in Kenya currently do not give much attention to environmental days, which would give the opportunity to include the local community.

Mutisya and Barker (2011, 55) also argue that environmental education should be taught theoretically as well as practically and interactive teaching pedagogies should be used to enhance active learning as well as the search for solutions to local environmental issues. Moreover, according to Mutisya and Barker (2011), the Ministry of Education should implement environmental education policies.

Gitau (2011) has a different approach - he sees the solution in the African church as an agent. The church should create more environmental awareness and challenge

environmental unfriendly governmental policies (ibid.). He suggests that the church should make use of print media as well as electronic media to educate people on the effects of destructive environmental activities and additionally peaceful mass demonstrations against politicians could be organized by the church (Gitau 2011, 239). The Scripture presents God as the creator and owner of the earth but since God gave it to the humans it belongs to both (Gitau 2011, 319). Gitau (2011) argues that people need to realize that while they have developed a way to control and use nature, they are still depending on God and nature itself. Gitau (2011) further refers to traditional societies and claims that religious environments lead people to live in harmony with nature. Morality being taught, and with it the consequences of evil doings and that whatever one person did was bound to affect the whole community either for good or for worse, the church should therefore feel more responsible and spread awareness on environmental issues.

Finally, I will take the opportunity to critically discuss the various methods used for the studies mentioned above. Ndaruga (2003) used questionnaires as well as semi structured interviews and observations. The questionnaires were given to fifty-four primary school teachers from seven Kenyan provinces, which led to a wide outreach - albeit subsequently only ten teachers were selected for the interviews. Ndaruga (2003, 108) argues that "the interviews and observation enabled deeper understanding of teacher perceptions and practices in the local context." The study of Mutisya and Barker (2011) used questionnaires only, with thirteen questions covering environmental issues experienced within Narok North District, namely, deforestation, water pollution and land pollution and students were asked to answer what the causes, effects and solutions to these environmental issues according to their own opinions. Mutisya and Barker (2011) state that the study is based on a social critical approach, through which knowledge is constructed by social interaction. Furthermore, the importance of the social factor in environmental issues was mentioned many times (ibid.). However, the method used by them does not give much opportunity to include social issues. Similarly, Omanga et al. (2014) investigate the risk perception of residents neighboring a factory, situated in a rural township in Kenya, through a quantitative method. Surveys with a given scale (no risk, low risk or high risk) may not be the best method to discover what people think about a specific struggle. For instance, if the participants never thought about being at risk they might do so when filling out the survey, additionally the results do not show underlying aspects or a deeper understanding for the risk perceived from the participants. On the other hand, Quigley, et al. (2015) managed to adjust their method to the social factor and the complexity of the issue and implemented the theory of social learning directly. Each participant received a Smartphone to take pictures of surrounding environmental issues and to send these with a narrative description to the other group members (Quigley, et al. 2015). In the first part of the study, the photo documentations were collected, then the pictures were analyzed by the researcher and participants and later an atmosphere for a group discussions on these observed environmental issues was created (ibid.).

In summary, some studies give attention to the local settings, others to the complexity of environmental issues and some highlight the importance of environmental education and teacher's involvement. None of the research has looked at the teachers' perspective of environmental issues and education in general. Only a few studies deal with the affects of education on environmental behavior and in general little research has been conducted in the field of environmental education in Kenya.

4 Analytical Framework

This chapter presents my personal standpoint as a researcher as well as the theories and concepts used.

4.1 My Role as a Researcher

I am going to point out my philosophical approach and reflect on my position as a researcher. When conducting research it can be questioned what we define as scientific knowledge. Which knowledge counts as real knowledge and when is it scientific? Chalmers (2004) states that science is understood as something that can only be done by using specific methods, be it natural science or social science. The various theories of social science build up on different understandings of reality, i.e. ontology, and can therefore influence the outcome of the thesis. The theories reach from positivism, which tries to measure the society and where things exist by themselves and where we just need to discover the facts, to social constructivism, which argues for a reality that is simply constructed by culture and society (ibid.). Knowledge seen by social constructivism can lose validity if it is taken out of context, thus it might not be a suitable approach for the global issue of environmental education and problems. In this thesis I argue for the existence of environmental problems as a real issue and not as a struggle that is simply interpreted by society. Positivism on the contrary is analytical, mathematical and draws general conclusions (ibid.). However, the studied objects might change when they are measured, specifically since humans can behave differently in several contexts additionally, the researcher can affect the results.

I therefore argue within the frame of critical positivism, in which reality exists in the way that it appears to humans. Critical positivism argues for the existence of the reality, yet this reality is a result of human activity over a historical period (Luckmann 2008). Hence, the reality depends on systems, which are constructed by culture and society. However, these constructed systems are open, and individual actions have an impact on the social structure, and the social structure has impact on the individual (ibid., 281). Teachers have a lot of influence on the society through their behavior but in turn, society and regulations impact the teachers as well. Through these open systems, critical realism further admits that people have that capacity to learn and change (Sayer 2000). According to the theory of critical positivism, knowledge can be gained through peoples' actions and their behavior (ibid.). Critical realism goes beyond facts and looks for a deeper understanding of an object or issue (Luckmann 2008). For my study, this means looking at how environmental education and behavior is currently implemented in schools but analyzing the reasons and origins of it, to find connections and possibly explanations. Ultimately, these characteristics emphasize that critical realism favors case studies in order to understand an issue in depth.

Additionally to the epistemology, the background and the position of the researcher can be a challenge in creating objective and correct data. Despite the attempt to avoid bias, I am well aware that society, culture and other individuals influence me and that I am therefore approaching the issue from a Western perspective. Furthermore, researchers can take various positions when doing fieldwork and participate actively, emotionally, passively or reluctant (Diphorn 2012). Depending on the researcher's way of participating, interviewees and outcome can be influenced positively or negatively. Other limitations are discussed in the Method chapter. However, there can be a positive side effect of confronting and interviewing

the teachers with environmental issues and its implementation in school. It makes the teachers reflect and think about these issues and this could further affect their behavior.

4.2 Theories, Concepts and Models

When applying theories and ideas that exist on my chosen topic I would first like to point out development theory as such. Subsequently I will analyze various teaching methods suitable for environmental education and ultimately the theory of planned behavior is presented.

4.2.1 ***Development Theories***

This thesis puts a high importance to giving the locals a voice in order to gain a deeper understanding of the teacher's perspective and knowledge on environmental issues in the Kenyan education system as well as an insight into public knowledge and behavior. As stated above, the negative effects of humans on the environment are a global issue - be it a developed or developing country. The environmental issues may vary due to geological, cultural and political aspects and so do the reasons and further the possible solutions.

One could argue that taking development theories into account, is not necessary but discussing a global issue in form of an investigation in Kenya, a formerly colonized country with my personal background in a Western country with such a different developmental history, this topic cannot be set aside.

The participants of my study live in a country that is still under the influence of the colonial times and so is consequently the school system, which arose from the settlers and missionaries. Additionally, environmental education is a Western concept that is applied throughout the school system and only due to necessity for change and adaptation is now applied in a developing country. It is often questioned, in which direction humans should develop, for both developed and developing countries. However, in this thesis I look at Kenya, a fast growing and changing country, and ask if environmental education could play an important role for its future development. In which direction will Kenya develop, and on what or who does this development depend on? Who should the agents of development be? Further, we can question whether there is a final stage of development or if we might need to develop backwards. There have been many discussions on how development should be practiced and the concept of development has changed over time, influenced by various thinkers (Cowen and Shenton 1996). Cowen and Shenton (1996) present different approaches and point of views of important thinkers, found throughout history.

Point four of Truman's speech in 1949 is often interpreted as the beginning of development discourse (Rist 2008). "It is possible to speak of the invention of development in the early post-World War II period" (Escobar 2012, 30). Truman used the word "underdeveloped" world and stated that those less advanced in science and technical devices should be provided with such and supported. "In cooperation with other nations we should foster capital investment in areas needing development" (Truman in Rist 2008). According to Truman, human knowledge and skills could stop people in the underdeveloped places from suffering due to inadequate food, diseases and a primitive lifestyle. He sees the solution in increasing the industrial activity in the underdeveloped countries and emphasizes that "Greater production is the key to prosperity and peace" (ibid.). With regards to environmental problems, we are nowadays well aware that a high global consumption and production

opportunity for everyone would lead to environmental degradation, depleting all natural resources. On the other hand we cannot stop people from developing or experiencing the same lifestyle as Western countries do. According to Truman, some nations in the global world are more advanced than others and the less developed should receive help in order to have a better life for example by bringing the newest technology to them, but what would this result in?

Assuming that Adam Smith's idea of a clear market exists, overproduction, unemployment and poverty would not occur. In a clear market, we would all follow our own interest, thus our demand would influence and lead the market, even difficulties would be regulated through peoples self-interest, hence we would know the extent of production needed and this will further bring progress and development (Cowen and Shenton 1996, 13). However, a market like this does not exist, since many external aspects influence it. The circumstances change in relation to time and location. Globalization adds further complexity by creating interaction between countries in different developmental stages and locations. For instance, an extreme weather event that destroys the crop and consequently increases prizes on the market or the high demand of coffee from the global North leads to better economy. Not only does Smith connect development and progress to the market, Marx relates it to production, i.e. capital, and the productive of power, i.e. the labor. A development that is defined by production and the market would lead to more environmental problems and should rather not continue; therefore a different and new perception of development is needed to stop exploitation and degradation.

In line with the Saint-Simonians, capitalism is intrinsically egoistic - a progress with little concern about society and therefore they connected development to the state and found the solutions in trustees. The Saint- Simonians admitted to the progress of the industrial production but highlight that everything depends on the uncertain performance of individuals working in the industry (Cowen and Shenton 1996, 21). In order to create a structure and a balance between consumption and production, trustees, in this context banker, should mediate between the workers and the capitalist society (Cowen and Shenton 1996). However, by including trusteeship in the development discourse the issue of dependency becomes stronger. The same theory can be applied on an international level, where the Western countries act as trustees for developing countries by providing developmental aid, hence also creating dependence. Development, in which foreign interests dominate, allowed less national control and created dependence (Kapoor 2002, 649).

Hegel has a more philosophical approach and argues for internal development that takes place when a human being becomes for-itself. Hegel's concept supports a separation of humans from nature in order to develop. He claims that in Africa and Lapland there is too much nature and people who live there have to fight the rough conditions and cannot develop their thinking (Cowen and Shenton 1996, 119). Comte, the father of positivism based on natural law, assumes that everything is already out there and we just need to find it; he states that order and progress motivate each other and lead from one to another (Cowen and Shenton 1996). According to Comte knowledge leads us to development, therefore knowledge and the potential to understand and know the possibility of order is what makes humans unique (Cowen and Shenton 1996, 27). Hegel's as well as Comte's idea of development are strongly anthropocentric, focusing simply on humans but forgetting that we depend on nature and also stand in context to our surroundings.

Post-colonialism and Subaltern Studies

In former colonies, some power structures still remain after the colonial period - the educational system being one of those. Subsequently, the experience and input of those native to the country is not often utilized and development is often imposed on the locals. The postcolonial theory is about the experiences of people living in a former colony or in places where colonial dynamics still exist, for example through politics or economy. Post-colonialism highlights local aspects and local knowledge that need to be taken into consideration, emphasizing the cultural aspect. It is also concerned with the struggle of dependency in post-colonial countries, which can occur after the relinquishment of political power (Kapoor 2002). However, this is different from the dependency theory, which is based on the capitalist development and its control from the state, as the postcolonial theory focuses on the subaltern input and change of orientalist modes of representation (Kapoor 2002, 648). The postcolonial theory is often criticized for tending to ignore important materialistic concerns and capitalistic problems such as poverty and health problems (Kapoor 2002 and Chibber 2004).

The Subaltern Studies are related to the East; they focus on culture and forms of consciousness and describe the experiences and histories of individuals and social groups who have been dispossessed and exploited by colonialism (Morten 2002). Spivak argues that the colonized have lost their origins hence they search for an authentic identity and through writing their own history, empowerment can be achieved (Kapoor 2002). According to Morten (2002), Subaltern Studies focus on those people who might have been forgotten during anti-colonial movements, for instance women or small ethnic groups, albeit it is not a strict class analysis. Spivak questions whether the subaltern have the possibility to “speak”, or to voice their opinion and she states that they have never been empowered to do so, particularly due to economic exploitation and social and political oppression in the colonial and postcolonial time (Morten 2002). Thus, Spivak advocates for giving voice to the subaltern (ibid.). The Subaltern Studies explain the dynamics of the colonial and post-colonial time and how they have changed over time but in doing so, it compares the culture and structural development in postcolonial countries with that of the West (Chibber 2004, 618). Hence, the Subaltern Studies are criticized for highlighting the difference of the development of the East and Western world (ibid. 2004). By “giving” voice to the subaltern you assume a superior position to these countries, and emphasize the social differences and by that making it difficult to conduct ethical research through subaltern knowledge in a global development networks (Morten 2002).

“Orientalism” is another theory that focuses on this contrast created by the West, through the way we see, construct and represent the Orient, for example in media and novels. Said’s theory points out how the West creates strong pictures and imaginations about “the Others” in the way we construct and represent the Orient (Kapoor 2002). Nevertheless, they are all theories constructed in the Western intellectual society and therefore Eurocentric and biased. The Post-colonialism and the Subaltern Studies can both be criticized for labeling the colonized as ex-colonized societies (ibid.).

Post-Development and Knowledge Production

The discourse of knowledge is included in the concept of development and with it the question of which knowledge that is important. The importance of culture is one aspect that Escobar with his post-development theory have in common with the postcolonial theory. He further questions our Western concept of knowledge and states the necessity of letting the

locals speak. According to Escobar, the West has created the developing countries, often referred to the Third World, and therefore needs to unmake this division, even if this process takes time and has no simple solutions or prescriptions (Escobar 2012, 217). Instead of searching for optimal changing models or strategies, it would be better to focus on concrete local settings including the context of their culture and how it is influenced by modernization, collective action, and political mobilization (ibid., 19). With the knowledge of the locals we can create a new type of understanding even though we probably cannot think like the locals or understand their way of life completely (Escobar 2012). Escobar (2012, 216) states that it is a necessary to move away from the scientific Western modes of knowledge opening up for other types of knowledge and experience. He argues to seek for locally constructed forms of knowledge and local systems of power that regulates development practice (Escobar 2012). For that reason, I gave voice to the teachers, highlighting their perceptions and knowledge in order to understand their thoughts and concerns about the current situation in environmental education, its importance and possible development.

Unequal distribution of income and material resources is often seen as the basis of conflict and instability (Escobar 2006, 8). By trying to distribute these resources evenly, we assume that other countries and cultures need or want these recourses in the same way we do and by doing so shape them after the development and society we have in Western countries. This denies the difference existing between countries and cultures and while having the desire to create equality we have to respect the difference and accept that diversity will continue to exist (Escobar 2006). This is another aspect that taken into my thesis, seeing and accepting the difference between environmental education in Kenya and in the global North, not criticizing either way but understanding both and in a further step possibly learning from each other.

Summing up it is argue that it might be the best acknowledge the differences between developed and developing countries due to history and cultural aspects. That means, to respect this diversity and to listen to the local teachers in Kenya while considering their experience and perception of environmental issues and education.

4.2.2 Teaching Methods

Whenever education is being analyzed, we have to consider the process of learning itself as well as the people involved - teachers and students. In order to pass information on to the students, a teacher can apply various methods. The field of pedagogy is a wide one and ideas and opinions of how to gain knowledge differ within it. However, the most basic way of teaching is through communication, i.e. a message or information sent to the students. Transmission models of communication are routed in the simple concept of a sender transmitting a message to a receiver and encoding/decoding models focus on the importance of the production of the message and the interpretation of the message (Chandler and Munday 2011). Various communication models address the interaction through messages, considering influencing aspects such as relation, culture, background on how the information is given and received (ibid.). The different ways of how a teacher passes on certain knowledge and how it is perceived by the student is strongly influenced by the method applied. The recent trend is going from a teacher-centered teaching towards a more student-centered method. However, Kay (1975) refers to the "Minde Report" from 1964, which proposes that Kenya should strengthen the individual and its talents and claims that this does not contribute to the national goals. He states that the individual student is not that

important and that a free, student-centered education would not work (ibid.). Kay (1975) claims that due to a lack of resources for a massive teacher training scheme, teachers will stick to being strict authorities because this is the way most of the teachers themselves were taught and it is what the local culture of a post-colonial Kenya reinforces (Kay 1975, 189).

Teaching methods are strongly related to the general concept of education, which is ever-changing and always questioned critically. For instance, education can be defined as a planned influence on a person in order to lead someone into a direction or change the perception to one that is closer to the influencing power or person (Brezinka). Some might argue that we are born in a specific way while others see education through life, people, the environment, the culture as influence that makes us who we are. Education can change the person and form the character of a person. In this case, education is the most important thing for shaping humans into a certain direction. Education should give information, support to develop the individual character and form children into social humans that fit into society and its rules.

Three main leading styles in education can be defined: First, the laissez-fair style, which simply implies not to educate or lead but let the student develop freely. Secondly, the democratic style, through which students learn in arranged settings but can still make their own experiences and choices. The third style is the authoritarian leading style, which uses strong educational methods such as support and reward (Prätzold 2002). Generally, it can be said that people always need to learn by themselves - teachers, parents and educators can only support them.

Now, after a short discussion of education and teaching its method in relation to environmental education will now be analyzed. The way in which a teacher presents the information is often up to them, teachers who use the same syllabus still have diverse ways of approaching and presenting a topic. It very much depends on the character and interest of the teacher. Wolsk (1977) claims that teachers choose the methods used in their lectures very fast but if they are questioned why they used them the teachers will have good explanations and arguments for what they did. This might depend on the already existing knowledge of the pupils, their age, their style of working, the availability of material and other resources, the size of the class, the type of the school and the overall educational philosophy of the teacher and the school system. Wolsk (1977) further states that especially in environmental education, no clear categories or classifications for teaching methods are defined. "Environmental education is an approach to learning processes and content matter that brings together all methods" (ibid., 37). This is why environmental education is unique, it encourages the teacher to widen the perspective and create various learning situations in order to include the complex totality of environment and its relations to humans (ibid.).

An environmental lesson could be given by applying scientific methods, through experiments, by a communication process or by doing a fieldtrip. However, fieldtrips tend to take place infrequently since advance preparation and planning is required and expenses are often high. Yet fieldtrips have a positive effect on social interaction (ibid.). Wolsk (1977) introduces other methods such as mapping, outdoor activities including gardening, role play and excursions to museums. According to Wolsk (1977, 41) more importance should be given to the emotional reactions to different environments and the reason behind them. Exercises focusing on the senses such as walking with eyes closed feeling and smelling the

environment support exploring the environment around us and becoming aware of its impact on us (ibid.). Beside the method also the objectives, content, skills of the students and outcome need to be considered when planning a lesson, and not too much attention should be given to the activity itself. The pedagogical method should be in accordance with the age of the students, since it is argued that the perception of our environment changes and young children are have closer relation to the environment due to more fantasy and creativity and less abstract type of thinking (Wolsk 1977,44).

Kay (1975) states that Kenyan children learn traditions, values and attitudes through daily life with their family. Respect for elderly and so on are still practiced and taught to children before they enter the school system (ibid.). Importance is given to the story telling which sends a message to the children from which they should learn (Kay 1975, 188). Kay further points out that Kenyans are proud of their tradition and daily bring up the importance of keeping them while on the other hand the education system teaches values and attitude that are far away from them.

After pointing out the different possibilities of teaching methods, I am now going to discuss, in detail, the connection to the immediate learning environment and surroundings in the following section. "Environmental education programmes seek to encourage pupils to look at their surrounding and their own place within them with a more practiced eye, a more involved heart, and a more responsible mind" (Wolsk 1997, 47). Moreover, Environmental education has its original focus on nature studies, conservation education, and outdoor education (Carter and Simmons 2010). Schleicher argues that the methods and resources used need to motivate the students and the local society, including the school neighborhood to make the learning more realistic and practical (Schleicher 1989). Environmental behavior is more determined by personal experiences in nature and through society, than by knowledge (Schleicher 1989, 274) and therefore experience-based environmental education is necessary. Knowledge should be received through real life situations, through different study fields and increasingly through learning outside of school (Schleicher 1989). Winkler (2010) argues that children develop and learn within various surroundings such as the family and in school. Even the ritual of going to bed can be a kind of education, hence learning does not need to happen only within the formal school setting.

The theory of place-based education puts its attention towards the local community and environment and makes use of the place where students live (Smith 2013). It argues for an education outside the classroom and aims to involved citizens in protecting natural resources and areas (Smith 2013). School and the classrooms seem to isolate and separate from real life and therefore community and place should become and additional chance for students to learn (Smith 2013). A similar opinion is shared by project-based learning (ibid.)

Place-based learning is a method against the modernized lifestyle. Especially in industrialized and technology dominated nations, children's attention gets drawn away from their own experiences in nature by electronic devices (Smith 2013). Smith (2013) states that feeling responsible for community or spending time getting to know natural places around became hard for children. The relationship and attachment to nature is missing due to our modern time, lifestyle and culture and place-based education gives children the chance to fill this gap, to experience human and natural surroundings. Basic skills are taught by directing the students to people or issues in their own community; thereby students are able to learn

from other community members as well as their teachers (Smith 2013). Students investigate and report and these “learning experiences require students to become knowledge producers rather than consumers (...)” (Smith 2010, 215). The goal is to have more sustainable acting students as a result of their involvement and to make use of the intelligence, energy, and skills of young people in the process of community and environmental restoration (Smith 2010, 219).

Even though the involvement in community and the use of electronic devices in developing countries might still differ from those in Western countries, some ideas of the theory of place-based learning can be adjusted to that context, hence it is applicable worldwide. One of its benefits lays in giving the students a feeling of participation and potential to take action (Smith 2010, 220). Additionally, as the originally British education system focuses more on the performance of the individual, creating competitors for the job market, place-based education on the other hand goes back to the traditional thought of putting community in the center.

The Identity-Based Environmental Education (IBEE) model presents one approach that addresses the relationship between environmental issues and consumption (McGuire 2015). The IBEE model recognizes that every human action has an impact on our natural resources and seeks to influence extensive behavior and to produce less environmentally harmful, consumptive behavior across behavioral domains (McGuire 2015). Furthermore, there are the social learning and the socio-ecological learning theories, which focus on emotional experiences, learning from each other and critical engagement through discourse (Mutisya and Barker 2011).

4.2.3 *Planned Behavior Theory*

Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes towards the behavior, subjective norms, and perceived behavioral control; and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior (Ajzen 1991, 179).

The theory of planned behavior is an extension of the theory of reasoned action and focuses on the intention of an individual (Ajzen 1991). The motivational factors and reasons are captured in this intention and are therefore assumed to influence the behavior. The intention we have to act or behave in a certain way shows how much will and effort we will put into it. Ajzen (1991) concludes that, generally, the stronger the intention to engage in a behavior, the more likely it is to be performed. These completed behaviors depend on a combination of motivation (intention) and ability (control over behavior). Three independent determinants of intention are proposed: the attitude towards the behavior, how the person evaluates the behavior in question; the subjective norm, which arises from the perceived social pressure to perform or not perform a behavior; and the degree of perceived behavioral control, how easy or difficult we believe something to be (Ajzen 1991). “As a general rule, the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual’s intention to perform the behavior under consideration” (Ajzen 1991, 188). Moreover, beliefs are of a high importance for this theory since they strongly influence the three factors mentioned above (ibid.). Ajzen (1991) points out that in some specific contexts personal feelings of moral obligations or responsibility to act or not to act in a certain way needs to be considered. Ajzen claims that, “the theory of planned behavior provides a useful conceptual framework for dealing with the

complexities of human social behavior” (Ajzen 1991, 206) and helps to understand the behavior or to apply interventions in order to change it (ibid.).

In order to understand the idea behind this model, I am briefly going to present a study where the theory of planned behavior (see figure 1 in the appendix) was used to identify key beliefs underlying pro-environmental behavior in high-school students, reflecting on environmental education (De Leeuw et al. 2015). It is widely argued that people need to change their behavior towards a pro-environmental one, having less negative impact on our natural surroundings (ibid.). This theory states that attitudes, descriptive subjective norms, and perceptions of control contribute to the likeliness of a behavior. Subsequently holding a positive attitude towards the use of pro-environment behavior creates a higher intention to do so (De Leeuw et al. 2015). Simply transmitting knowledge is not enough to change lifestyles and behavioral patterns since having accurate information about an issue can be quite irrelevant for decision-making (De Leeuw et al. 2015, McGuire 2015). Thus De Leeuw et al. (2015) argue for the need to identify the subjective beliefs people have towards environmental issues and to understand how these beliefs affect their behavior.

If attitudes towards a behavior are based on a person's beliefs about the likely consequences of performing that behavior (Ajzen cited in De Leeuw et al. 2015), then it can be assumed that high-school students, who believe that adopting environmentally sustainable behaviors mainly has positive outcomes, will have a favorable attitude towards sustainable behaviors. Injunctive norms are based on people's perception of what important referents - e.g. parents, teacher, and friends - think that they ought to do, while descriptive norms are based on these referents' actual behavior. Further, moral norm was added to the model for this case study since the topic of environmental behavior can be seen as moral issue. The results of the data showed that many high school students who had positive pro-environmental behavior intentions failed to act on them. Their feelings of moral obligation were high, and considering attitudes, subjective norms and perceived behavioral control, which add to the intentions of engaging in eco-friendly behaviors made a good prediction of self-reported behavior possible. However, this study concludes that a meaningful intervention to influence behavior change participants need to have the means, skills and other resources to perform the behavior of interest.

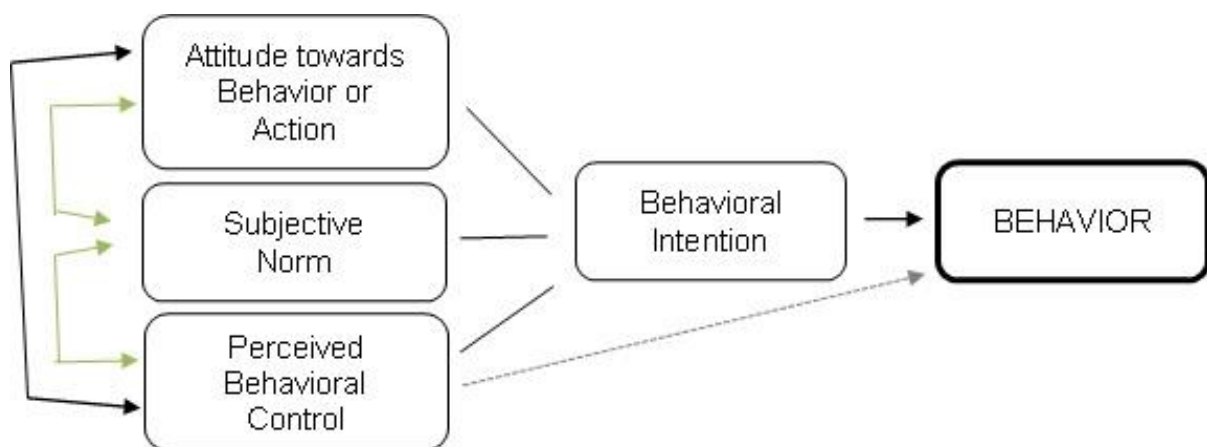


Figure 1: Model of the planned behavior theory (adapted by author after Ajzen 1991, 2016.)

5 Methodology

This is a case study based on ethnographic fieldwork. During September and October 2015, I have interviewed eight teachers from five different public secondary schools in Meru County, Kenya. The interviews followed premade interview guidelines with questions on the topic of environmental issues and environmental education. Therein I put the focus on education in order to get a deeper understanding of the complex issue of environmental awareness and behavior in developing countries. Departing from school education seen as one of the main channels through which knowledge, thus awareness can be created.

5.1 Ethnographic Case Study

The issue of environmental education and acting upon it is a worldwide concern but impossible to study globally since each place has its own conditions, I therefore decided to conduct a case study confined to one specific area. "Acknowledging the impossibility of studying society as a whole, the case study has been seen to this question, offering a vantage point from which to draw broader conclusions about social trends and developments" (May 2011, 221). However, various places and cultures have different given conditions and therefore I would argue that drawing general conclusions or searching for one overall solution is ineffective. Nevertheless, the issue of environmental education implemented in developing country and its various aspects included should be discussed in a broader perspective.

May (2011) states that the qualitative method of fieldwork creates the opportunity to get a detailed and deeper information and understanding about the complexity of an issue. Therefore, I have chosen a qualitative case study in contrast to a quantitative study, as I believe the complexity of the subject requires more in depth and detailed information. Additionally I decided to focus on the teachers and their perception and therefore to include the ethnographic approach, studying a group of people and their opinions. Ethnography highlights that the reality is complex and complicated and overlaps (Blommaert and Jie 2010, 11). Fieldwork, a method originally routed in anthropology, is a continual process which gives the researchers the chance to study people's thoughts, actions and behavior in their environment (May 2011).

This is an inductive study with no preformed hypothesis since the complexity of the subject does not allow it. The goal is to locate patterns from the data and then form a theory. Doing fieldwork implies having an inductive approach, collecting empirical data and subsequently creating a theory (Blommaert and Jie 2010).

5.2 Process and Conduction of the Data Collection

The following stages are usually performed in ethnographic fieldwork: "pre- field preparation, entering the field, observation, interviewing, data formulation, analysis, the return from the field" (Blommaert and Jie 2010, 2).

The pre-field preparation consisted of finding housing, preparing for internship as a teacher and preparing the interviews. I attempted to get in contact with local teachers and to find enough participants beforehand but this process failed and was therefore conducted after the arrival in Meru. When creating the interview guideline (see appendix) I tried to formulate

open, non-direct questions, in order to avoid yes or no answers and give the interviewees the chance for long, open answers (May 2011). I chose to have semi-structured interviews since “This enables the interviewer to have more latitude to probe beyond the answers and thus enter into a dialogue with the interviewee” (May 2011, 134).

During the period of entering the field, the first weeks in Meru were used to settle in and to establish contacts with local schools. Unfortunately, a teacher strike took place during the first three weeks, which made enquiries difficult since it was not possible to visit any schools or teachers during this time. Through local contacts and through my own work as a German teacher I eventually got in touch with teachers from public secondary schools.

I visited and conducted interviews in five schools within Meru County: Mwirine mixed Secondary School, Buuri School, Athwana Secondary School, Meru Kaaga Boys Secondary School and Kaaga Girls High School. In order to provide a better understanding of the schools I included some photos, see Figure 2 and Figure 3.

Upon arrival in this different culture, I started observe constantly and to compare these observations and feelings to my personal experiences and to my own cultural background. I kept a daily diary to record these observations. As mentioned above, observations are a part of ethnographic fieldwork and they should be done at various levels, different times and places (Blommaert and Jie 2010, 30). Observations should be done during daily activities, which the researcher participates in and the researcher should not make any in advance assumptions (May 2011).

The interviews were held at the schools in order to conduct them in the participants daily, known environment of the participants. This gave me the opportunity to not simply conduct the formal interviews but to frequently ask questions about motivations and to also have informal conversations. I tried to visit the schools once before the interview and if not possible, I spent the whole day there in connection with the interview. This was done in order to create a better atmosphere since not only the content of the interview guideline matters but also the surrounding setting. Additionally all interviews were made in seclusion, with no other person than the teacher being interviewed. The interviewee was meant to feel comfortable and not judged and ideally the participant should stay interested and motivated during the whole interview process (May 2011). The interviews were recorded as audio file and later transcribed. Each interview took between thirty minutes to one hour.

The focus of the interviews was to create a conversation in which the interviewee had the dominant role. According to Blommaert and Jie (2010) I tried to be open but still prepared for possible answers. Further, I was well aware that my own background and self-presentation could affect the outcome (Blommaert and Jie 2010).

After collecting all the data, I transcribed the interviews and tried to make sense of the information that I had received during my time in the field. Creating the transcripts was very time consuming and I am aware that a transcript is never a perfect copy of the recording as it is never neutral and complete (Blommaert and Jie 2010). I coded the transcripts and looked for important parts, agreement and disagreement among the participants and repetitive parts. Out of those identified codes, I created categories, also referred to as themes. These themes were analyzed in comparison with the help of different literature and a variety of theories.

Since the issue investigated, can only be understood if compared and put in relation to other data, the researcher needs to make connection between the various data collected (Blommaert and Jie 2010).

5.3 Limitations

When conducting qualitative research the problem of objectivity is often brought up. The researcher and his background influences not simply the data collected but even if presenting the results as objectively as possible the researcher's view will also lead the analysis in a certain way.

According to Blommaert and Jie (2010), it is more likely to conduct objective research when looking at an issue from the perspective of an outsider. My argument is that even though I worked a shorter period at the different schools and have a history of teaching, I still conducted the research as an outsider and kept an objective view since I was never indoctrinated in the Kenyan system. Blommaert and Jie (2010) state that despite having experiences in teaching and feeling familiar with the education system we stop being a teacher and turn into a researcher when doing fieldwork.

Being a researcher with a Western background put me in a clear outsider position and created a small difficulty since it could have influenced the answers of the teachers. I sometimes got the impression that the respondents answer according to what they think that the interviewer wants to hear from them or what they assume environmental education should be rather than answering truthfully. However, the statements have to be taken at face value since this is only subjective speculation. Additionally, being an outsider to the local culture, having a Western background tempted me to a constantly compare it to what I am used to and this could lead to a bias position. I therefore tried to approach every observation and conversation neutrally as possible. Not only were cultural differences a challenge, also the difference in language had a possible impact on the results. Even though English is an official national language in Kenya, their accent is very strong and sometimes made it difficult to understand, especially when transcribing the interviews.

Furthermore, I experienced that the formal setting of the interviews and the recording of it make some of my participants feel less comfortable and made them speak less freely than after I stopped the recording. I often had interesting informal conversations and this can add to the data of the fieldwork according to Blommaert and Jie (2010).

Another limitation that needs to be pointed out is that behavior as such, is hard to investigate and not measurable. My study does not analyze the actual behavior of Kenyans' - it simply discusses the reported behavior of the teachers.

As a last point the study focuses on Meru County but only looks at as few as five schools. It has therefore got to be pointed out that, more time and more resources would have allowed for a bigger study to be conducted, which was unfortunately not the case. To the best of my knowledge, I followed ethical guidelines such as informing my participants about the details and keeping them anonymous. The participants were randomly chosen, and participated out of free will. Moreover, the teachers do not have to fear any negative effects from participating or the outcome of this case study.



Figure 2: Meru Kaaga Boys Secondary School (photo by the author, 2015.)



Figure 3: Athwana Secondary School (photo by author, 2015.)

6 Results

In this part of the thesis, the outcome of the interviews is presented. I have used the original wording from my transcripts in the quotes throughout this chapter. Since I want to keep the interviewed teachers anonymous, I will not mention in which school they were employed. Moreover, I chose to code my interviewees with the following names: Teacher 1- Faith; Teacher 2- David; Teacher 3 - Linda; Teacher 4 - James; Teacher 5- Anne; Teacher 6 - Martin; Teacher 7- Brian; Teacher 8 - Erick.

6.1 Channels of knowledge generation/ education

I am going to present the various channels through which people in Kenya, according to the teachers I interviewed, could receive information about environmental issues. I do not only see my respondents as teachers but also individuals who experienced education within the local school and social system and therefore I mention various ways of receive knowledge regarding environmental problems and conservation.

6.1.1 **School**

Most of the interviewed teachers informed me that, according to the syllabus, environmental education should be integrated into the majority of all the subjects. Brian states that environment is treated as a “matching issues” in the syllabus and its aspects should therefore be included into the different subjects. Additionally, he explains that consequently it becomes a personal matter, depending on each teacher. Brian states that he teaches about taking care of the forest in Swahili class. David is a mathematics and physics teacher and he reports that some of the examples given to the students are in one way or the other connected to the conservation of the environment. When I asked Faith if she could tell me what the students have learned about environmental issues, such as pollution, recycling and overpopulation she only referred to the other subjects and stated that in her subjects (languages), it is not dealt with as a topic. Martin on the contrary, states that he sometimes comes across a passage in the English course book, which is about waste management or pollution and therefore he takes up this specific matter but does not go into detail. In line with the majority of the teachers, Faith refers to geography, chemistry, biology, physics, science and Christian religion as those subjects that deal with environmental issues. David states that biology includes the topic of ecology and additionally geography touches upon environmental issues. Likewise, Linda argues that landscapes, controlling flooding, irrigation systems and pollution are studied in geography and concludes that it is the main subject in which students learn about the environment. James and Erick also state that geography and biology are the subjects in which environmental issues and sustainability are taken up the most. Erick adds that the subject “life skills”, in which basic skills and knowledge are taught to the students and no exams are taken, occasionally includes environmental topics too. Anne, a history teacher, first claimed that environmental issues are not discussed in her subject, since it mostly deals with culture, European history and trade but then she realized a connection through industrialization. She states that agriculture, industrial revolution and its effects, such as pollution, are taught during some history lessons. Martin thinks back to his time in school and explains that he took agriculture up to secondary school level, through which he gained a lot of knowledge on the matter.

All teachers agree that students know and learn about conserving the environment in school. Yet many teachers add that it is lacking frequency. James, for instance states that not

enough environmental education is happening in schools as it is only taught through certain subjects and not on a regular basis. Additionally, not all the subjects are taken by all students, hence if students choose not to take geography they might not know a lot about environmental issues, says Linda. When I asked Anne if all students are taking history classes, she informed me that new students, coming from other schools, can choose other subjects if they did not take history in their old school. However, all students who started in form (class) one, participated in history classes and learned about industrialization and its effects on the environment. David states that theoretically environmental education in schools should be implemented since all schools “use the same curriculum and syllabus, so it should be, but it depends on the teacher’s efforts to do that”. Martin emphasizes that he does not see a lot of implementation of environmental topics. Ultimately, not much time in school or during classes is spent on environmental issues and activities. The majority of the teachers stated that less than an hour a week is spent on environmental issues. Brian claims, “much time in the curriculum is for other activities, aspects of environmental protection are just infused”.

Faith states that in their school, some students are in charge of making sure that there are no papers on the ground and that the other students do not dispose their rubbish on the compound. In addition, Anne talks about prefects, students who are leaders in school and who are in charge of environmental issues. These students are responsible for various tasks such as maintaining cleanness, taking care of the trees and closing the water tabs in case they break. Furthermore, they can assign other students to water the trees in school and to keep the compound clean. Anne: “So we need the leader to maintain the environment of the school and the role of the teacher is now to educate that leader.” At times, the leaders participate in courses or seminars where they learn how to take care of the environment and this knowledge can later be passed on to the other students.

Each school offers some afternoon activities and one of them is clubs. Faith claims that she gained a lot of information about the environment during her time as a member of the 4K club (which derives from Swahili words about the environment) at primary level. Every day after class, programs such as games or clubs are offered to the students (Faith). Brian states that at his school students can join a wild life club in which classes and activities focus mainly on conserving the environment. The club also participates in competitions in which the students give presentations. Three more interviewees mentioned afternoon clubs to me but related to them as possible change or idea about how the knowledge could be broadened among students. During a workshop, which is happening once a year at school, James saw how some students become very creative when making new things and ornaments out of garbage and he points out that this is an aspect of recycling.

6.1.2 University/ Campus

Nearly all teachers reported an environmental unit at campus that they had to take part in during their teacher education at university. This unit lasted a whole semester, so about three to four months, next to other units. David states: “When I was in first year at campus one of the units was environmental education and in fact it is a fundamental unit that each and everyone must do and it was highly extensive.” Both Linda and James state that they learned most things regarding to environment at the university level. In particular, James who studied physics, which entailed also environmental physics where global warming, climate change and its consequences were one of the major issues. However, when studying for an intense

time without repetition most of the knowledge will be forgotten after some time. David states that while he studied environmental issues at university, he knew that he needed to pass an exam, and he points out that now he does not remember much of this unit. Brian shares this opinion and states “most of the things I learned during the unit about environmental education I have forgotten”.

6.1.3 *Outside the school system*

Brian states that local campaigns about protecting and preserving the environment are sometimes carried out, for instance the promotion of planting another tree after cutting one. David told me about a TV advertisement which aimed to educate people to throw rubbish into the bin. It captured people throwing paper on the ground while finger with the thumb down indicated that this is a bad thing to do and after the correct disposal in a bin was shown. According to David, this advertisement had little effect on the public, mainly because it was only designed for urban areas. Faith highlights that generally, advertisement such as to use your bag twice can be found very rarely in Kenya. Martin on the other hand states that in the last years environmental issues got more attention and information can be acquired from different forums such as radio and television. Media, such as TV news or newspapers are the sources from which Linda got information on environmental issues and she states that she heard about how the government tries and strives to protect the environment. Similar to that, did James receive information through election campaigns, news and from what he observed. Observations such as the depletion of a close by forest and the subsequently effects on the rainfall is what added to Martins environmental awareness. He states: “I got aware because I saw”. Erick remembers songs and poems about the environment, specifically about trees, which attempt to create environmental awareness.

In line with some other teachers, Brian refers to Wangari Maathai, a Kenyan environmental activist who got the Nobel Prize and became very famous for promoting a green movement and states that many Kenyans have learned a lot through her commitment to protect the environment.

6.2 Teacher’s personal knowledge and perception on environmental pollution and conservation

Nearly all teachers define “environment” as the surroundings; some gave more detailed explanations than others did. David states:”environment to me is the surroundings, be it living or non living.” Linda, on the contrary, excludes us humans because we are the once affecting the environment. For Brian physical and social environment such as institutions, are included and he sees environment as is the totally of the things around a person. In this part, I am going to show what the interviewees know and think about environmental issues.

6.2.1 *Importance of taking care of the environment*

Most of the teachers mentioned at some point in the conversation why we should protect the environment and gave various reasons for that. Yet all of them were anthropocentric hence related to how it might affect us humans. Linda for instance states: “You know if it is a bad environment then people will be sick.” She points out that flooding can bring diseases but does not explain the problem in detail. Brian also argues that protecting the environment can reduce deceases and adds that a sustainable development needs to sustain the environment. Anne states that, for a better hygiene and to minimize health problems, the

environment needs to be kept clean. She explains that empty, improperly disposed containers are a hazard since they can fill with rain water in which mosquitoes can breed and therefore increase and later spread diseases. However, not only individuals can be held responsible for polluting the environment, also industries contribute to it, says Anne. She illustrates that industries pollute the air and sometimes dispose waste incorrectly, which might end up in the drinking water and this can cause diseases, especially if industries are built in residential areas. To sum up “It can affect the human’s life if we don’t take care of our environment” (Anne). James, on the other hand, gives a broader, global and less anthropocentric reason and argues that, because of “climate change that has come upon us, we need to protect the environment itself of human factors and educate on the environment because we are approaching an environmental crisis”.

6.2.2 Sustainability

The understanding of sustainability and related issues are presented here since it gives an idea of the teacher’s personal thoughts and point of view about the complex topic of environmentalism. David explains that through natural resources either the economy or the environment itself can be sustained. David defines sustainability as “the limit through which something can be withstood - the capacity to hold something”. Faith states: “Sustainable means making sure that it does not die from one day to the other.” Similar to this explanation, does Anne interpret a sustainable behavior as an interaction with the environment without destroying it, including to avoid cutting trees and throwing garbage anywhere and to minimize environmental pollution. Anne additionally explains that Kenya is lacking water and therefore an economically sustainable action is, to collect rainwater in big tanks, which can later be used for irrigation during very dry seasons. Furthermore, she claims that pastoralists do not sustain the environment, because their big amount of animals causes soil elution. Anne says: “So when we are carrying out agriculture now like this the soil loses fertility and this means that we are damaging the environment.” For Linda sustainability means to “make sure the level or the standards don’t decline, maintaining and making the situation better than it is.” She states that we all have to strive to make it best for the living of human being. Martin on the other hand states that despite the outcome a long existence of the nature should be guaranteed and gives the example of cutting down a whole tree or simply cutting branches, which can be used for fuel but will not stop the tree from growing new branches. He points out that “there has to be a balance in our activities and the resources that are there”.

6.2.3 Various backgrounds

The majority of the teachers I interviewed pointed out that there is a big difference in the knowledge and behavior of people depending on the background and where they come from.

By observing and talking to various teachers, I understood that in general there is a clear distinction between peoples’ common routines and interactions with the environment of in a city, a small town or the countryside. For example the system for picking up rubbish in towns where people pay the county government for the service of having the rubbish collected. David adds that in rural areas they usually do not come to pick up the rubbish. He says: “Okay at the rural areas actually we burn it but here in town we actually let it pick up.” Nevertheless, I observed that small piles of daily rubbish, were collected next to the streets or in gardens and later burned (see Figure 4). Faith claims that there is difference in behavior depending on where you come from “you do not expect someone who is from a village to be the same way than someone who is from a town”. David agrees and states: “There is a great

difference in the way people treat the environment, depending on where they come from. Rural or urban is one, also the age, whether young or old and the other one is the level of education. You don't expect someone, who studied much to behave exactly the same than a school dropout." David further states that the rural areas are less organized and the rule to conserve and take care of the environment does not exist there. However, the relation and behavior towards the environment does not necessarily depend on whether you come from the rural or urban area, it might be given from the parents house. Anne therefore concludes "some live in a very clean environment, they swipe their homes well, they collect the containers and burn them, while other families are just not interested." Linda however, relates environmental behavior to social classes and the lack of knowledge. She states that there are still families with a low social and financial standard, that are not able to take their children to school and therefore do not receive knowledge concerning the environment. Martin also states that the higher class is more aware of the negative effects of human activity on the environment, and those people are more likely to have nice gardens with flowers and many trees. Linda additionally claims that poor people tend not care about the environment. Martin and Brian argue in the same line and state that lower parts of the society lack money and information and that makes them care less about the environment. Low-income society might have other struggles. Brian states that people with low income tend to use what is available to them and since they cannot afford gas, they simply use firewood. At the same time, a lower possibility to consume might lead to an unintended environmental friendly behavior. For instance, not being able to afford a car forces people to walk to school or take public transport. In all schools in which I conducted the interviews students were walking to class or stayed there since it was a boarding school. In relation to that, James stated that "they may be taught about transportation and its air pollution but they would know even more in urban areas". James adds that a person from a poor background might affect the environment with garbage disposal or cutting trees but someone with a high income could have a factory or own a car. James says: "so social classes affect differently but I think they all do but in a different way but you cannot expect a person from a bad background to use a gas cooker instead of firewood." We could therefore sum up that everyone contributes to environmental pollution, some less and others more.

6.2.4 Nature

Teachers primarily refer to water, rivers and planting trees when reflecting up on harming or protecting nature. Faith states that "if you litter you will have dirty water and in return you will drink the water and become sick and have some health complication". David points out that here in town the water is already polluted so you have to boil it or drink bottled water. "But where I come from because we don't have factories around to pollute the rain and we have a lot of natural resources of water and very far away from residential places so that means that they have not been dumped with rubbish". Martin points out that people cultivating at the riverbanks cause big problems like water pollution and soil elution.

All teachers at some point talked about the importance of planting trees. Faith puts it straight "when we talk about environment what clicks in our mind, is trees and when it comes to conserving the environment, people know the importance of conserving and planting trees". She adds that people often forget about the soil, animals and insects and states that when you teach the students "about protecting you start with telling to plant a tree and when you plant a tree this tree will bring carbon dioxide and carbon dioxide is used in this and this is used for this". Anne points out: "forestation should be told in school and so to preserve the

environment we should now plant after cutting.” Erick highlights the importance of trees by giving an historical example: “A place in the Kenya the rainforest was cut down, the river was dried up and everything was chaotic, water was not there anymore.”

6.3 Implementation of knowledge and behavior

“There is a very big disconnection between environmental practice and what we are teaching” (Brian). Brian states that students are taught about pollution of rivers and deforestation but when you talk around you see people cutting down trees for charcoal and polluting rivers. Before looking into detail of possible reasons for this behavior, I will now highlight what teachers claim to do to protect the environment and what they teach about environmental issues.

6.3.1 ***In School***

As mentioned above environmental issues are supposed to be incorporated in all school subjects but Faith points out that “environment becomes a by the way”. In order to get a grasp of what is taught in class, the following paragraph is going to present the concrete, resent lectures on environmental issues, held and explained by the teachers.

Faith gives the example of how environment becomes a topic in Christian religion: “in form one students learn how God created the environment, in form two they learn about how God gave us the environment to take care of it and in form three students learn how people have destroyed and formed the environment.” In this given example, Faith reflects on her own experiences as a student and her observations since she teaches Swahili. David adds environmental education through examples into his subject mathematics. For instance, when talking about the rates he can give the example: “if in one hour thirty trees are burned, what will happen in one day, assuming all factors are kept constantly. So you know we have to calculate how many tree will be destroyed when you finished you always have to say something about fire.” He explains that usually he tries to connect it to something practical for instance to forest fires on Mount Kenya which can sometime be seen from Meru town and he informs the students about possible causes. David: “So bringing the environment in is just a small percentage and actually the information comes probably as examples from daily life calculation but not every day.” Linda is doing her internship as a teacher and says that “honestly I just deal with my friends and myself. I really don’t teach about these things because I am still being taught but I think after my master degree I have to pressure these things.” James does also not give a personal, concrete example. Similar does Erick state: “I do not teach as such but I comment.” Erick explains that when he enters the class or walks around the compound in the morning and he sees that it is not clean he would comment on it. For instance, he would tell the students to go and compare it to another, cleaner classroom and occasionally take three to five minutes afterwards to tell the students about the importance of the environment. However the history teacher Anne held lessons about the industrialization in Britain, in which she explained the students that “agricultural material were used as raw materials in the industry” and she concludes that it is important now to develop the agriculture “because of what happened there in Britain we try to apply here”. She further points out that when the students learn about the effects of industries, pollution and its causes become a topic. Anne claims that the history about industries is taught, since also in developing countries like Kenya, factories pollute the air while other causes, such as traffic, are not affecting the individuals so much. She states: “because we are developing mostly

students are not exposed to that but they know that there are gases that are admitted from vehicles and motor bikes, from which they should keep away as they are dangerous.” Anne additionally teaches about urbanization and its effects, including the problem of housing in big cities, having many people living in slums. Slums are often dirty (see Figure 5) and heavy traffic in big cities causes jams, says Anne. Brian explains that it was during the last term, that he was teaching about environmental issues and remembers that a passage in the Swahili book was about deforestation. The students read the text in the book, which was talking about how forests have been degraded and which consequences these cuttings have. Later on, questions about the understanding of the text including the understanding of the importance of the forest and what the government or the students can do on a personal level were given to the students. However, Brian emphasizes that a lot of the knowledge that the students receive is not really understood since effects cannot be clearly shown to the students. He states that teachers can only rely on the pictures of the textbooks.

All schools I visited had a clean school area and through the interviews with the teachers, I found out that students have to spend a certain amount of time on cleaning the compound. In most schools it was around an hour per day that was dedicated to collect the litter on the school compound which accumulated during the day. Linda states that environmental education is happening through cleaning the compound. ”So we don’t have classes or lectures but the teachers have to make sure, that the students are engaged in keeping the school area clean. Half an hour in the morning and another half an hour after class is spent on cleaning the compound.” Faith states that they have a communal day once a week where they look at the environment within the school compound and plant trees and collect rubbish. Therefore, schoolyards are very clean in comparison to public areas.

Erick explains that the last two years, the school in which he works, had been voted the cleanest school within the eastern province, despite the large amount of 1600 students. The school has put effort in putting up posters about responsibility and obedience and talking to the students in the assembly, says Erick. He describes how rugs that earlier were spread as garbage around the compound are now used use for mopping the school and papers are collected every morning. Each class and every corner has gotten a dustbin (see Figure 6) and students assigned as walkers have to go and burn the papers. Erick adds that the students are told to no mix bottles and papers but do not really follow this rule. All the schools have rubbish bins but in some schools they are used more than in other. Linda says: “We have rubbish bins in the school but only one big and after it gets burned and the students really use them because it is a rule, it is a law which they follow.” According to Faith, students use the rubbish bin in school because “in every institution there are rules, so it is a rule to not litter. We also give them the responsibility that if you want it to be clean, don’t wait for someone to do it, just do it yourself, so if students see a piece of paper they will remember and pick it up.” James on the other hand observed that students do not use the rubbish bins, they only clean up after class. Complementary explains Brian that the usage of rubbish bins has not been fully embraced by the local culture and students do not use it. Yet they clean the compound every morning.

6.3.2 *Teacher’s personal actions and behavior*

In this section, I am going to pointing out in which ways teachers apply their knowledge on a daily basis, keeping in mind that I was not able to observe these actions, hence it is based on their statements. Anne for example states that she collects all the containers, especially

during the rainy season, because the mosquitoes breed in those containers if they fill up with rainwater. Anne adds: "I plant trees because when I cut trees I don't beautify the environment so trees to human life are very important." James, David and Martin have their own garden, where they plant trees in order to conserve the environment. Erick is currently living at the school but he explains that at home, at his farm, he has planted around five hundred seedlings. David collects the biodegradable rubbish and uses it as humus and he burns the non-biodegradable rubbish, such as plastic items that are no longer usable, since his home should be as clean as possible. Also Anne burns her rubbish at home, she says: "I did a compost bit with the litter, all the containers that I no longer use and then I just burn them to be on the save side." Erick explains that at his home he a two rubbish bins, one for plastic bags and similar items and the other one for food. Outside he dug a pit in which he disposes the collected rubbish from the dustbins. Disposing the rubbish correctly is important for Linda too and she states that she also pushes her friends to do so. At the same time, she explains that when she was in high school she hated cleaning. Linda says: "I was like, can I please do something else and when I just passed by and saw litter I wouldn't collect it." Faith states that in order to conserve the environment she reuses her plastic shopping bag and if she wants to dispose it she burns it. Additionally she does not dispose waste randomly: "I don't throw it on the ground, I put it in my bag and go and then burn it, because not everything composes in the environment". Martin states that he does not drop litter anywhere and as a teacher, he motivates his students to dispose rubbish properly. Martin makes sure that he uses gas instead of wood or fuel; James also claims that he stopped burning charcoal. David talks about a project that he did in a town in central Kenya within the university where he picked the rubbish to clean the whole town and even distributed small rubbish bins there. He states "But I don't know whether the people there accepted this culture and kept it or if they once we left gave it up again."

6.4 Reasons for why people act the way they do

Through the perception and answers of the teachers, I am attempting to find possible reasons for the actions or non-action of people in regards to their natural surroundings. Additionally I want to highlight the local teacher's opinions and thoughts about environmental behavior of Kenyans.

6.4.1 ***Lack of information and responsibility***

In accordance with most teachers, Faith believes that it is not simply a lack of information. However she adds that "people do some of the things because they don't know. When someone has got the right information they change, they change their attitude, they change the way they do things". Anne also explains that there are still people who do not have enough knowledge and did not learn to value the environment "so they just do it without even knowing what they are doing, they don't take it serious." Martin states that people recycle as a default, they will keep a plastic bag simply because they need it for the next time when they go to the market and not because they are aware of the concept of recycling. Furthermore, he states that people will simply know that they should plant trees to protect the environment but this knowledge often does not go beyond, sometimes people got little information and additionally they do not care. Linda states that the students really do know about what harms the environment, so they have the knowledge but the problem is that they do not use it.

Linda thinks that another possible reason could be that “sometimes they maybe do not have so much time or they think it is just not so important, but other than that there is ignorance in human beings, like I am wasting my time.” Likewise does Anne state that it is “carelessness of people, whenever their garbage does not enter the dustbin they do not bother, people just don’t care - they know but there is ignorance.” At this point, it should be noticed that the word “ignorance” is not properly used by most of the teachers; it is interpreted as knowing but not caring about environmental issues. David first explains how a student receives information, goes home and passes it on to the parents, who will then realize and know what they did wrong and further pass this information on to the public. However, subsequently David states: “Theoretically this should work but practically, from what I see it is not working and I will put it only in one word: ignorance.” He explains that a walk from school to town will show that the information is not working, it is not in the public and people do not apply it, otherwise the town would be clean. David says: “I think if you look at ignorance, it is the mother of all problems. I would say that they have the information but they just choose not to use it.”

Giving the task of caring for the environment away to others seems to be an explanation. David states that people sometimes just do not bother because they have other things to worry about or think that it is not their duty. The public often tells itself “someone else is supposed to do it for me and therefore it is not my responsibility”, says David. Faith also argues that, “throwing a paper doesn’t mean anything much and then there is this notorious thing with us, that conserving the environment is the work of the city council”. Towns like Meru have employees who collect the garbage and Faith explains that dropping rubbish anywhere is therefore not seen as a bad thing since you are giving work to those people.

6.4.2 Personal background

David sees the cause for whether we act or not act environmentally friendly in the culture, “depending on where you have grown up, that’s how you think things have been done so you tend to blend in and you do things exactly the way you see others doing it.” He argues that students returning to school after the long holidays, often do not follow the rules anymore, most likely they have forgotten about them. To David that means “at home, they do not have that organization, like you have to take the waste where it belongs so that is why students throw it anywhere, because nobody is watching them.” Martin believes that it is a generation issue; since the public and older generations are not acting environmentally friendly, the students see no reason in doing so either. He states: “if the older generation does not do the right thing you cannot expect the younger once to do so, even if they get all the information at school”. Likewise, does Erick state that at date younger generation care less about the environment and this might result from a lack of role models in the older generation, their behaviour is copied and interpreted as a normal action by students. Brian sees the problem routed in the Kenyan culture and states that an environmentally friendly behavior should come out naturally, therefore the culture is lacking respect for the environment. He argues, “People really do not feel like they are offending anybody or that they are doing something against the environment, for example if you drop a paper, you should feel some sense of guilt”. Brian adds that this comes due to weak and primitive regulations and incorrect mechanism became normal because of the corruption. He explains that for instance you are caught smoking in a forbidden area and you simply buy your way out.

James states that some people are not alert about environmental issues because they are still cutting trees and burning charcoal as a source of income, so if they see trees they see

money or building material and use charcoal for cooking, simply because it is cheaper. On the sides of the streets, specifically in poor areas, charcoal can be purchased (see Figure 7). Anne claims that people with no income are often responsible for the rubbish on the ground. She says: “street children pick whatever there is to find, so they can sometimes throw everything that is in the dustbin on the floor so that they can pick what to eat and then they just leave it there they don’t bother to return whatever they have got from the dustbin.”

6.4.3 Further Perception

Martin states that students know about environmental terms but they do not practice and fulfilling those. They know what air pollution means but people still ride motorbikes and cars. Martin argues that this is due to the reason that people neither have seen the long-term effects nor feel personally affected by it. Similarly do Linda and Anne see the problem of not behaving environmentally friendly, rooted in the fact that students do not understand why they should act a certain way, they have just been told what happens but have not seen the major effects in reality.

David gives a very distinct reason for why people throw rubbish on the streets. He says that “if you have something, it looks exactly as if, what is done by the people who are somehow insane, so if are caring rubbish, you are categorized as being insane so you decide to actually dump it where you are.” Brian sees a part of the problem in a weak structure and in poor urban planning, where there is no place created to properly dispose the rubbish. James does not have an explanation for why individuals act the way they do. He stated: “I know that they know what they do is wrong but still they do it but I never understood what the problem is.”

6.5 Possible future changes, enhancements

As a last point, I am going to list possible changes stated by the teachers who are all locals and have gone through the education system themselves and currently work within it. I therefore believe that their ideas and opinions should be considered. David states that trying to change the behavior of people could be possible but very difficult, especially because the problem affects the whole country. He gives an example, explaining that even if the litter in towns is eradicated and people there educated, once the people from the rural areas come, they would drop rubbish even on the way because they might not know how cleanness is done. Faith is more optimistic and explains that the school is an extension of the community so if students have the correct information they can share it with the public and further change the public behavior. However, many aspects need to be taken into account.

6.5.1 Education

“More time, more topics, more...more should be done” (Faith) this is the opinion that most of the teachers have in common. Faith states that not enough information is given to the students. James concurs, “the very first thing is to just inform” and then individuals can choose to act upon it or not. In his opinion it is not about laws, it is about creating consciousness, to be alert about environmental issues and this can only be achieved through knowledge.

This paragraph focuses on potential enhancements within the school system. Faith points out “most of the people that teach about the environment are actually not confessed to the

environment.” She explains that it would be better to have a specialist, who is educated in this field, teaching about environment issues and not a religion teacher. Bounded in the curriculum every school could have a teacher who studied ecology and environment. David also suggests, “[to have] a subject dealing with the environment itself because the environment and its conservation is wide”. Anne and Brain argue that currently it is not taught purely, it is only routed in other subjects but creating a separate subject would bring consistency and lead to a higher impact. James states: “I think we would need frequent information otherwise the students forget about it.” James and Linda claim that there is probably not enough environmental education since subjects that include environmental topics more intensively, such as geography or biology, do not need to be taken by the students. Hence, the information does not reach all students and therefore James and Linda argue that the syllabus should change.

The method of teaching plays an important role as well, how the information is presented to the students might influence their understanding of it, their ability to make use of this knowledge and if they will remember it. Linda and David favor a practical approach to environmental issues. Linda: “If students have done it even practically, maybe creating more space for people to go out to learn, to go straight to the community or fieldtrips, so then they have knowledge and skills. And then this will always be in their life.” In addition, David promotes a practical lesson once a week in all forms so over time the information could grow among the students and further spread to the public. Brian suggests that schools should have competitions and projects and do trips but he also points out the financial struggles to do so. Martin argues for adding films, songs and drama pieces to environmental education in school, he states that a drama piece would give the opportunity to act out, watch, and reflect on a topic such as the damage of the environment. Additionally web pages and internet forums should be used in class and various platforms within and outside the school should spread information, and sensitized people.

Some teachers argue that the awareness should be created everywhere and not only in schools. David says: “it can be done in school but I think this will not be enough. It has to reach the public as well.” He therefore suggests having a community extension program for the schools where students go to town, for example to clean up. In this case, students would experience and see the outcome of environmental pollution in a daily setting, a learning-by-doing approach. Faith concludes that the focus should lay on the broad public since everyone should become responsible. James argues in lie with her and emphasizes the need to educate the public. He states that the public can be reached through the parents (a parent’s day after class) or in church (teach them after service) or during some meeting.

6.5.2 Agents

Some of the teachers see individuals as important actors. James states “the chain is supposed to start with me first, and then others follow. I think if everyone takes initiative, we can move something also in the government.” Faith states that if you do not start with yourself you will be expecting someone else to do it. She says: “I can help to change the environment, not we, because when you say we, we may not have the owner, but I am the owner, I will do it by my own so it is no one else I am looking at; it is me and me and me.” According to Linda, it is important to prepare a good generation. She claims that through generations, there will be a change and if environmental issues are constantly taught from the primary level on, students will grow up with information and reasons for treating the

environment in a responsible way. Brian states that environmental protection needs to be a collective responsibility in which everyone plays a role; it should not be left to specific people. Linda hopes that once people take care of the environment the government will also be carrying their part.

Many of the interviewees give the responsibility to the government. Anne states that in order to protect people from environmental pollution the government should not build industries near residential areas, especially since the waste produced in these industries is sometimes tossed in the ocean or rivers around. Hence, the government should be asked to create laws to dispose the waste correctly so people and animals do not get diseases. Erick also argues that the government should come up with missions to sustain the environment, including the special Kenyan wildlife. He states that: "If I will do my part then someone else will come and destroy it, so I think that we should have policies." Erick explains that laws ought to be followed by everyone; i.e. a law against littering should not only hold people accountable for it but also leave room for punishment if it is broken. James points out that environmental education should get more importance in the syllabus and this change needs to be done by the minister of education. Martin goes a step further and suggests that every school needs to prove what they have done for the environment. For instance, how many trees they planted or how the school helped to educate the public to use resources responsibly (Martin). Faith on the other hand does not fully count on laws introduced by the government, she states that it will additionally take "someone's intrinsic motivation to do something". Nevertheless, she concludes that rules from the government would bring enhancement since students also follow the rules in school. Hence, the intrinsic motivation can arise from an external incentive such as a governmental law, which people should follow.

6.5.3 Other options and ideas

Anne argues that the teachers should demonstrate how to preserve the environment. "So as we teach the students and the communities and do the same, we become the role model, they copy from us" (Anne). Erick agrees that role models, from older generations, could lead students to an environmental friendly behavior.

A more practical idea comes from James, he suggests putting up signs "do not litter" in order to make people more aware. Since students do not really use the rubbish bins, sign could function as a reminder, says James. Similar does Erick state that posters and public systems should enlighten people and create knowledge. Anne highlights that "cleanness all the time is a solution to pollution" and therefore, she sees a need in educating people to keep the surrounding clean, especially in overpopulated places such as slums. Martin argues that people need to be sensitized, and carrying for the environment should come from within a person. He states there needs to be intrinsic motivation; people need to see it from a personal perspective. Additionally Martin suggests working with rewards since people will engage in activities if they can benefit from it, financially or otherwise. Erick recommends giving more information to the teachers and claims that this can easily be done through seminars.

I would like to end this chapter with a positive note and highlight that most teachers have pointed out how environmental issues have gained more attention in the last years and how the behavior of people started to change. Brian states "we started to see the environment in a new dimension, we started seeing the environment as live so now people started planting trees all over, you can see the effects that environmental activism has on the society".



Figure 4: Rubbish collected and burned at the side of the roads in Meru County (photo by author, 2015.)



Figure 5: Rubbish in the slums of Nairobi (photo by author, 2015.)



Figure 6: Rubbish bin at Meru Kaaga Boys School compound (photo by author, 2015.)



Figure 7: Selling of charcoal (photo by author, 2015.)

7 Discussion

I am now going to discuss the results of my case study in comparison to the literature presented above. First, I am going to present the current situation and potential reasons for it, according to the teachers and scholars, and further leading to a debate about possible solutions.

7.1 Current Situation

Throughout history up to the present and from there leading into the future, we can now see how the colonial past has influenced the current situation in Kenya, including the school system and the modern life. Kenya has developed fast and it will probably keep on doing so. From a Western point of view, many products and systems still have a need for improvement but at the same time a cultural influence has to be recognized and consequently the global way of progress should be questioned. Diverse contributions to environmental issues from both developed and developing countries are only one of the factors why we can conclude that environmental problems arise from social and cultural settings. Therefore, environmental issues cannot be addressed without a look into the historical, political, social and economical context.

The participants in my case study stated that environmental education, according to the syllabus, should be implemented in their subjects. However, only a few environmental lessons, held by the interviewed teachers were reported to me. A physics teacher, a history teacher and a language teacher explained concretely how they include environmental issues in their lesson. The remaining teachers simply stated that subjects other than their own teach this topic and, for example, put more focus on cleaning up the school compound. Additionally, many interviewees emphasized the importance of informing students to stop littering and cutting down trees. However, underlying causes, social issues and other aspects behind environmental problems, according to the teachers, were hardly ever brought up in class. The results indicate that environmental topics are taught more intensively in some subjects than others. Geography and biology were most commonly mentioned by the participants, hence the strong connection between environmental issues and the natural science still exists (Schleicher 1989). This creates a risk for overlooking social factors behind environmental issues that may further lead to simplified environmental awareness without a possible effect on the environmental behavior.

Moreover, certain teaching methods can influence the environmental concern and behavior. Mungai (2002), a former Kenyan student and a current international researcher, reflects on her school time in Kenya: She describes a school system that focuses on memorizing facts in which there was no room to ask why things happen. Mungai states: "I guess it is not important to know why things happen or why they are that way". Therefore, it can be argued that students who do not have the chance to discuss or question certain issues may not receive information properly and important aspects might be left out. I observed a strongly teacher centered education in all schools which are included in this study. A teaching method like this one may not give much opportunity for discussions, social learning or active participation which would be vital for environmental education (Quigley, et al. 2015). Environmental education should discuss the total of environmental issues and include all influential factors (Wolsk 1977).

The methods of the current environmental education are carried out through a teacher focused, merely theoretical, approach, focusing on natural science and leaving out the root of the problems will most likely not lead to behavior changes.

According to the various teachers' statements about their personal teaching behavior with regards to environmental topics, it can be argued that the amount to which students learn about environmental issues largely depends on the character and personal interest of the teacher. My findings shows that environmental awareness among teachers in Meru County does exist, and that they show attention and concern to this topic. The interviewed teachers are well aware of what harms the nature and what helps to preserve the surroundings. However, there is a clear difference between the knowledge people receive and the actions that they take. Yet their actions and awareness often overlook the complex underlying nature of the subject. Teachers' personal actions are similar and focus more on minimizing or repairing damage, such as planting trees after they cut them or collecting containers to avoid that mosquitoes breed, rather than preventing damage from happening.

This individual behavior and actions do not simply arise from education. According to Gifford and Nilsson (2014) personal and social factors influence our behavior too. We should therefore be aware that even with environmental education and common awareness people might still not act upon what they have learned. The interviewed teachers believe that the main reason does not lay in lack of knowledge, but in people not caring. All teachers agree that students have gained environmental knowledge through school, but fail to apply it in reality. The reasons given by the teachers differ. However, the majority of teachers, state that more information should be given to the students and environmental education should gain more attention in school. The teachers explained that the lack of environmental concern in students can be related to background issues such as coming from a rural or urban area or the home and family. Most teachers claimed that people with low income and those from the rural areas would be less concerned about the environment and have a bigger lack of knowledge about correct environmental behavior. There might be a connection between having a non-environmental friendly behavior and having social or existential struggles.

Taking the importance of environmental education for granted, other major struggles of the society of Kenya also need to be taken into consideration. It should therefore be questioned if locals see a need to put a focus on environment, despite their fight against poverty and violence. Individuals as well as the government, might be aware of the necessity to act upon environmental degradation, yet this awareness can be overlooked in light of other more substantial problems (Shisanya and Khayesi 2007). This is also reflected by the Kenyan government, which fights against insecurity within the country, violence arising from various ethnic groups and terrorist attacks, poverty, and the economic situation (Kenya 2015 Country Review). Since the focus is put on these problems, it can be claimed that environmental issues are seen as a secondary problem (Shisanya and Khayesi 2007). In addition, a problem needs to be defined as such in order to have people taking action (ibid.). Hence, to usefully apply the concept of environmental education, teachers must see a need in processing towards a pro-environment conscious direction. Teachers and students partly may not take action because they have not defined environmental issues as a problem or threat. One of the teachers stresses that students might not see the effects and therefore do not act according to their knowledge.

If individuals have to fight for basic needs and can therefore not be concerned about the environment, it could be claimed that developing countries need to develop first in order to be able to start creating an environmental awareness. In the case of developing, postcolonial countries, such as Kenya, development is often induced by the global North; for instance, the school system, which is originally a Western concept. Therefore, we should be very critical towards how we impose environmentalism and environmental education within this school system. Kay (1975) points out that the applied education is not fit for the local African context; subsequently the environmental education as it is implemented in Western countries, is likely to fail. Nevertheless, regardless of culture or historical background, and even of the extent of contribution to environmental problems, it can be argued that creating environmental awareness, being conscious and concerned about our surroundings is important.

There is a discussion on whether developed countries should support and lead the development progress of third world countries or not. Resources on this planet are not big enough for every person to live a Western lifestyle, however, stopping others from doing so would be unethical, unequal and would create an even stronger power hierarchy. Escobar (2012) sees a problem in the spreading modernity but makes clear that the third world should not be seen as a reservoir for tradition and culture.

In Western media, Kenya is often portrayed as a place with wild animals, safari, and people wearing traditional clothes as well as living in clay huts. However, Kenya is a modernized country and most of the cities have a Western structure and lifestyle. This misrepresentation by the Western media is what is referred to as "Orientalism". But even though many Kenyans have a Western influenced lifestyle I have observed that in some cases daily behavior has a much less negative influence on our environment than that of a Western citizen. For instance, food in general was always local even at schools. Students eat what grows in the surrounding area. The teachers and students therefore eat rice, beans, other vegetables and fruits. Faith states that "in the morning they take tea and porridge and for lunch time maybe on Mondays they take a, the take maize and beans and some vegetables, on Wednesdays they take rice and they take maize flour, we call it Ugali, generally it is cheap and local". David also points out "this is purely local and does not come from far." In another school, some vegetables come from the school garden "the cereals we buy and the greens we have them in the garden" (Anne).

Every school has their own school kitchen in which the meals are prepared. Students either live close by, and therefore walk to school every day, or often stay at school if it is a boarding school. Faith states "they walk to school, some of them come from town and many of them come from the slums actually most of our students in the school come from the three slums of Meru." In general, people make use of communal taxis, public buses but also cars, which results in traffic jams every day during rush hours. The consumption and production of clothing differs from the Western habit. In boarding schools, students wear their school uniform all week while students from day schools purchase their free time clothing at a tailor or at the market where mainly second hand clothes can be found. Linda explains: "at the market there is the new clothes and there is the Mtumba". She calls them recycled clothes and states that they are probably pre-used and are therefore cheap. These daily behaviors, such as purchasing second hand clothes, are not done due to environmental consciousness,

but rather a condition given by the system as some positive environmental behaviors are structural rather than conscious and so some negative behaviors might as well be.

The behavior of dumping rubbish everywhere, which was stated by the teachers and is easily observable, can be blamed on a lack of knowledge or to a bad waste management on behalf of the government. The results of my study have shown that teachers are very well aware of the negative effect on the environment caused by throwing rubbish on the ground. Furthermore, the majority of teachers stress that people generally know that throwing garbage everywhere is not appropriate, yet they do not act upon their knowledge. Since I started to investigate in this topic, I have observed many Western citizens in Sweden and Austria leaving their rubbish at places it does not belong, yet it seems to be much less common. Additionally, most European countries have taken up cleaner production technologies, and alternative methods of waste disposal such as recycling while regions in developing countries with a high population density have to struggle with solid waste disposal (Kenya 2015 Country Review). Hence, Western countries might only look clean from the outside due to a better structured waste management, which hides our high consumption.

In which direction we will develop, and with what speed is important for the planet and all species living on it, including us humans. I share the opinion that development must come from the people affected by it but has to be supported if the need for it exists and then it should be provided to a reasonable extent. Environmental issues are complex and therefore should be discussed in depth on a broader, more global scale. I argue that it is essential to create environmental awareness and knowledge worldwide. The discourse of environmental issues, in my opinion, should be carried out by teachers, students, subaltern, and individuals of all sorts, as well as by institutions all around the world as opposed to being treated only by experts and scholars. For this to become possible, teachers ought to give space and time to children to learn and reflect on environmental issues. Hence, I argue for environmental education and awareness in various settings and through a variety of channels, which will describe and discuss in the following section.

7.2 Possible Improvement

Leaving the discussion of current struggles related to environmental issues and environmental education aside, I am now going to provide some suggestions for possible improvement, including the thoughts of the teachers as well as literature. Corresponding to the topic of my thesis, I will mainly focus on solutions for a better environmental education in developing countries. Generally, I can deduce that environmental education is carried out in public schools in Meru County, though only to a small extend.

The results indicate that environmental awareness is present among teachers yet conscious, environmentally friendly behavior is rarely found in Meru County. I therefore argue that environmental education should focus more on behavioral change. This can be implemented through different teaching methods. The majority of the participants argued for a more practical approach in environmental education. Creating a learning-by-doing or more hands-on atmosphere through the means of schools, can help the students to visualize the concrete problems and can create awareness of what can actively be done to conserve the environment. One of the teachers proposes to include the community and through that reach out to the public as well. Also, fieldtrips were suggested by some of the interviewed teachers,

but rarely possible for financial reasons. This corresponds with Ndaruga (2003) and Carter and Simmons (2010) who point out that environmental education should exist in connection with local communities and begin close to home. These connections help the students to gain knowledge through a practical methods (Carter and Simmons 2010). Quigley, et al. (2015) favor social learning for wicked problems, such as environmental concern. Involving local communities can lead to addressing underlying problems in environmental issues and creates space for discussions and an opportunity for learning together and from one another; arguing for possible solutions, discovering agreement or disagreement within a group create a better awareness of the personal opinions and believes. Moreover, decisions or commitments made in groups are more likely to be acted upon (ibid.). Therefore, environmental problems should be addressed as social issues leaving the strict focus on the natural science behind. Instead of eco-management, i.e. cleaning up afterwards, they should focus on the root of the problem; be it social learning or place based learning as both methods agree on a practical approach, which needs to be seen as a vital element in environmental education.

The method used by the teachers should go towards a child-centered environmental education, focusing on the students being producers of knowledge rather than only receivers (Carter and Simmons 2010). Specifically, since information sent from the teacher can be received and understood differently by the student, disturbing factors can occur when decoding the message. Additionally, it became apparent through informal conversations and observations that the teachers are not to be questioned by the students. This leaves little space for critical thinking which is needed especially in environmental education. I am, however, not arguing for a strict student-centered environmental education but to open up the opportunity for various methods applicable to this field due to different characters of students and the complexity of the topic. These methods could then be implemented in different subjects.

Other factors than the method of education influence the environmental concern and behavior as well. Yet some of those factors can still be shaped through schools education and teachers. Therefore, according to the planned behavior theory (Ajzen 1991), education should positively influence as many factors as possible. This would contribute to our intention to do something that subsequently increases the chances to act according to it. Some background factors, such as coming from a rural or urban area, age or gender, are, however, simply a given and cannot be influenced. The three predictors of the planned behavior model - attitude, subjective norms and perceived behavior control - can partly be changed through practical environmental education. For instance, group discussions or active acquisition of knowledge can change attitudes towards a certain intended behavior. It can further shape the subjective norm, i.e. a social pressure perceived in a specific way, which might be recognized as a misunderstanding after investigating in the opinion of community members.

According to McGuire (2015) another aspect that is included in our intention to act, is the reason we see and give ourselves with regards to why we should care about the environment and its protection. Self-identity towards an environmental friendly identity can be shaped and influenced by other people. During childhood caregivers are particularly important, during adolescence peers and those with similar social-identities become more important, and later, as grown-ups, the self-concept becomes more stable (McGuire 2015, 706). Conclusively, teachers and classmates play a very important role in forming the identity

of students. Leading students towards an environmental concern and environmental behavior should therefore be one of the goals for teachers. Therefore, teachers must present themselves as environment friendly and act as role models. Two teachers have stressed the importance of a role model who people can follow, one referring to a Kenyan environmentalist and the other to teachers themselves.

Although big responsibility lies on the teachers, not everything should be up to them. Similar to the question of a trustee in the development discourse, we should question who should lead a change in environmental education and which agents are needed. Non-governmental organizations such as UNESCO or KOEE could be seen as important actors in educating the public. However, international policies and goals for environmental education are clearly thought through and while they are good in theory, they seem not to be implemented regularly or barely made use of (Schleicher 1989). None of the teachers mentioned the international policies or goals in environmental education. If promoted well, however, teachers still need to know what practical application could look like. Many teachers have referred to unit, a course, which all of them had to take at university, and some stated that this is where they learned most about environmental issues themselves. However, since it was some years ago, much of the information may be forgotten or has changed. One of the teachers stresses that this unit is good but still exists within an educational system that aims towards passing exams and not towards long lasting learning. Said teacher says that you study it all to pass the exam and then forget again and therefore argues for a more regular environmental education, also for the teachers. Hence, high responsibility lies with the government and the Ministry of Education. Frequent teacher education and access to material and information are crucial for a good environmental education. One of the teachers argues that this can easily be done through seminars and it can create more interest among teachers. Not only education of teacher, but also the one of students' lies in the hands of the government to a large extend.

The participants all shared the opinion that environmental education should be included more in the curriculum. The majority of teachers favor the idea of creating a new subject for environmental education. A subject of its own would give the opportunity of frequent implementation and show the importance of this present and current struggle. Moreover, some of the teachers points out that currently teachers, who are teaching matters of this subject are not properly educated to do so. This may indicate, that teachers themselves are not comfortable with the topic, and would therefore prefer a specific teacher with more knowledge in this certain field to teach it.

More responsibility should be given to the teachers to include environment education, yet my notion is that the teachers often project the responsibility on to the government or on to the individuals, who ought to take action, instead of focusing on what they can do themselves. This is a general, world-wide, problem with regards to many issues and maybe one of the core reasons as to why changing our behavior is so hard. People tend to wait for others to take action. This is understandable human nature; however, teachers, and the whole education system, have the ability to influence people's awareness of their environment and to protect and preserve it for future generations. Teachers thus have a strong responsibility and should create opportunities to guide people in experiential and critical reflection in order to help resolve local environmental problems (Ndaruga 2003, 111).

This study has shown that environmental education restricted to school and the classroom is not enough, especially not the way it is currently implemented in public schools in Meru County. The UNESCO conference has reported that not everyone has the chance to go to school; this is one of the reasons as to why schools as the single channel for creating environmental awareness are not enough. Furthermore, older generations cannot be reached through school education.

The more present the topic is in daily life, the higher are the chances to connect it to the personal intentions. Teachers suggested using public channels such as television and newspapers as well as politics in order to target a wider audience. Furthermore, some teachers recommended to include the public through school extension programs and to reach out to the parents and educate them during school meetings. Students can carry out information to family, friends and communities. As I share this opinion, I would argue for more information through various channels since it is not possible to create an intention of acting environmentally friendly without the received information.

Whenever a change in education is intended, it must be done in accordance with traditions of the country (Kay 1975). All suggestions stated above are therefore based on ideas and thoughts of the local teachers. An implementation of the originally Western concept of environmental education, can only work if all attention is given to the local context, including the given structure and the people's will. Many good ideas have therefore failed due to concrete implementation problems. Thus we need to consider all influencing aspects. Changes should be introduced and be performed by the people affected by it.

Some might argue that Kenyans have a stronger connection to nature and live a more sustainable life. Partially I agree with this since urban areas in Kenya are heavily influenced by the West and technology. As pointed out earlier, there is a gap between developing and developed countries and their contribution to environmental issues. However, this difference can be used positively, for example in a transcultural approach and in learning from each other. We cannot deny globalization and international environmental problems and should therefore also address the problem on a broader scale; hence opening up the opportunity for an exchange of knowledge.

How people behave and act is up to them. In line with the argument of some teachers, who stated that a change should come from the individuals, education can nonetheless lead people into a certain direction - in this case, towards a pro-environmental behavior.

8 Conclusion

At the beginning, I posed three research questions to which I will give concluding answers in the following four paragraphs.

The first research question posed in this thesis was: *What do teachers of public schools in Meru County know and think about environmental issues and environmental education?* - The majority of interviewed teachers are well aware of local environmental struggles and listed common behavior and actions that can harm and protect the nature. Deforestation, industrial pollution, water pollution through cultivating adjacent to rivers, harmful agriculture and solid waste disposal are environmental issues reported by the interviewees. The

importance of taking care of the environment was pointed out by most of the teachers and reasons for it were mainly anthropocentric. For instance, the problem of rubbish lying around and the pollution of water were seen as a danger to health. The various definitions and interpretations of sustainability, given by the teachers, emphasize their personal thoughts, such as the struggle of either sustaining the environment or the economy. Others gave concrete example of how cutting down a tree, rather than its branches, or agriculture by pastoralists are unsustainable activities. Various channels through which this knowledge was received, such as schools, university and news, were mentioned by the interviewees. The teachers argue that environmental education does not receive enough time and attention in schools and suggest different ways of improvement, which indicate that they are not in favor of the current situation on said topic.

The second research question was about *how teachers convey environmental issues to their students and how they perceive environmental behavior in Kenya*. According to the teachers environmental issues are predefined by the syllabus to be integrated in all subjects. However, only a few of the interviewed teachers gave concrete examples of how they teach their students about environmental issues in their lectures. Yet, many teachers referred to other subjects, then their own, which occasionally touch upon environmental issues as well as to general events, such as cleaning the compound or planting trees in the rain season. Three teachers explained their latest held lesson including environmental topics. One mathematic lesson about rates gave a calculation example of burning down trees, the history lessons was about the industrial revolution and touched up on industries and its pollution and in a language class a passage in the book talked about deforestation. The low number of actual implementations and the content of the teacher's answers and opinions indicates that environmental education in Meru County is taking place on an irregular basis and its implementation is lacking intensity. Additionally, environmental education seems to focus on natural science and eco-management and does not discuss the underlying social aspects or the complexity of the topic. Furthermore, the teachers agreed that there is environmental awareness among their students and within the Kenyan public. However, people do not act according to this knowledge. The teachers explained possible reasons for why people do not make use of the information they receive. For instance the difference between social classes and that low-income classes have more substantial struggles, consequently deprioritizing environmental problems. Additionally, a lack of information and knowledge, a none-caring mind-set as well as the lack of understanding the importance and consequences of actions are seen as determinants for bad environmental behaviour. Furthermore, the interviewees argue that the responsibility is passed on to others and that taking pro-environmental actions is not fixed in the moral guidelines of society. Not only is there often a lack of possibility to act upon environmental matters, but even the intention to behave environmentally friendly might be missing. Literature supports the statements of teachers and points out that the intention to act in a certain way arises from various social and personal factors, such as the culture, society, politics, history and the social background. Hence, the education system and teachers can be seen as one of the determinants influencing the character of a person. Over generations, a specific form of education can therefore lead the society and function as an influencing determinant of environmental consciousness and behavior.

The third main research question to answer was: *What are, according to the local teachers and literature, possible enhancements in environmental education?* - Teachers argue that more time and attention should be given to environmental education. The argument here is

that without information, there is no opportunity to create an intention to act or behave differently. Other suggested enhancements are having an expert teach the students about environmental issues or even to create a separate subject. Additionally, the majority of the teachers are in favor of a more practical approach, including fieldtrips, collaboration with the community and including movies, songs, drama or similar material in the lessons. Literature states the necessity of a stronger connection to the place where students live and learn, as well as the importance of social learning, i.e. having discussions and reflecting on problems and challenges. Thus, the applied teaching method is of great importance and should be adjusted to the topic and the given settings. When it comes to taking action, teachers refer to the responsibility of the government, which means that, in their opinion, the politicians and the Ministry of Education, should implement laws and rules of environmental education for the education system and for public. Yet, some of the interviewees emphasize the importance of the individual taking initiative, since, according to them, everyone plays a role as regards to the environment. Few teachers mention the importance of role models since it can further increase the environmental awareness and lead to a pro-environmental behavior in the society.

Finally, I would like to add some personal thoughts with regard to my own interest in environmental issues and education. I believe that environmental awareness and behavior and the chance to promote this through school education, including the discourse about the most efficient ways to teach and learn about the environmental issues, are of a global concern. Due to an increase of environmental problems, it could be argued that there is a need of broadening humans environmental awareness worldwide, independently from where we live and grow up. We should all be aware of the consequences of our actions and look for possible enhancements in our daily life. Some countries pay more attention to environmental issues and some schools might put a stronger focus on environmental education than others. Likewise, some teachers see environmental education as more important than others and therefore include it in their lectures more often. Teachers have a higher chance than many other individuals to lead humans to a change, in this case towards a more environmental awareness and behavior. Therefore, I believe that teachers should be empowered and feel more comfortable in speaking up and that society and science should value their statements and perception of environmental education.

Thus, further research of consulting people closest to the field and active within the studied area, giving voice to those who are not heard and considering all possible influences for the phenomena studied would be supportive and necessary. Nevertheless, this thesis specifically emphasizes the complexity of environmental education in a developing country; hence need to remember all possible determinants when arguing for improvement or change.

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11 Appendices

11.1 Interview Guideline

Environmental awareness and education in developing countries: To what extent are environmental issues from the perspective of teacher of public schools in Meru taught to their students? And to what extent do the teachers themselves know about environmental issues and see a need to broaden this knowledge among students?

Introduction

I am a student at the Lund University in Sweden and I am collecting some data for my master thesis which i will write next semester.

I want to find out more about environmental education here in Meru and therefore I would like to gain some deeper understanding from your perspective about this topic as a teacher.

I will inform the participants about the approximate time of the interview and that they will be recorded. Further I will let them know that their answers are very valuable to me, should be honest and that they cannot be wrong and will not be judged.

I will not strictly follow the questions but I will use them to guide me through the interview.

PERSONAL

- What does “environment” mean for you?
- What have you yourself heard about environmental protection?
- How did you get to this information? (Advertisement, classes, friends and family?)
- Is there something that you do for the natural environment around you? For example what do you do with your rubbish?
- In which contexts have you heard about sustainability? What does this word mean for you?
- Do you teach your students about environmental issues and sustainability?

SCHOOL

- Is there some kind of environmental education happening in this public school?
- How? In which disciplines is something about these issues taught?
- Can you give me an example how a unit or lesson about environmental topics looks like.
- What have the kids learned about topic such as recycling, air pollution, overpopulation, and sound pollution?
- Do you think that your students know what harms the nature?
- Do you think that your students what can help to protect the environment? And if so why?
- How much time is investigated in the issue about environmental protection?
- What do students learn about sustainability and in which context?
- Do you have rubbish bins in the school? How do they look like and where can they be found? Are they used by the students?
- How do most of the students come to school? Do you think that the students know which kind of transport is better for the environment?
- What do the students get to eat for lunch? Are the ingredients mainly local or imported products?

- Do the students wear a uniform? Where do most of the people here in Meru purchase their clothes? Are they second hand?

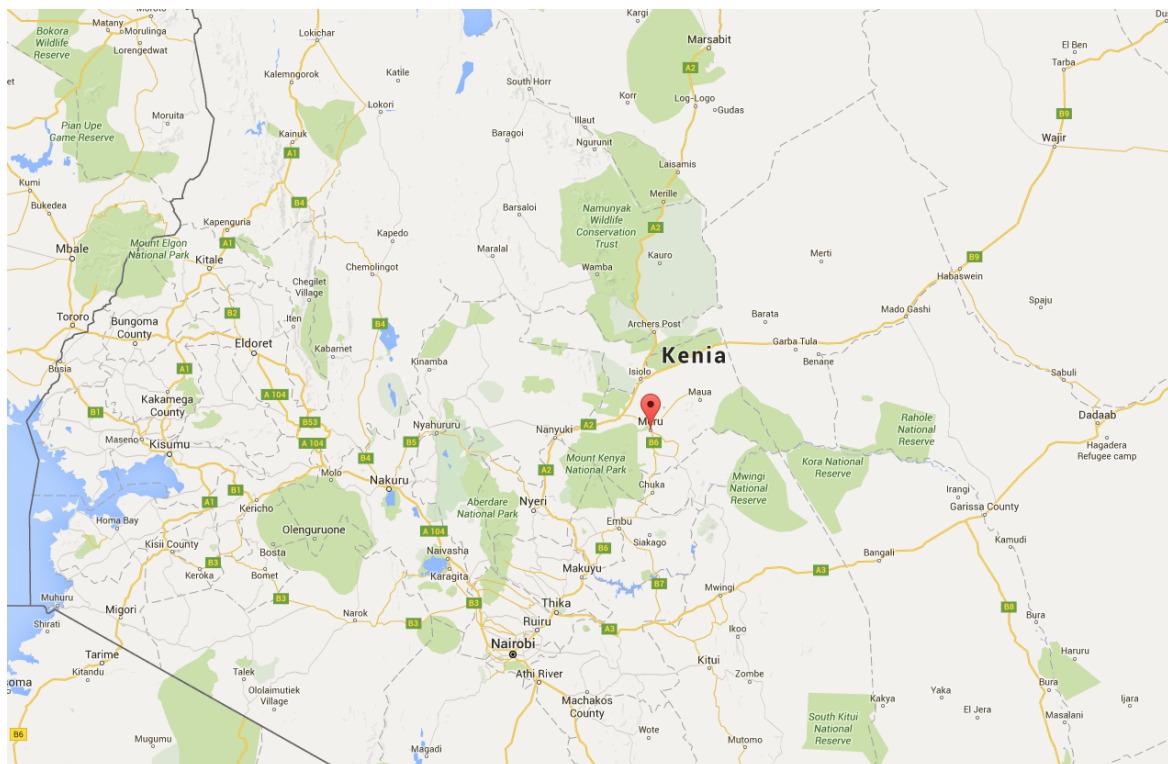
GENERAL/PUBLIC

- I have observed that often people here throw out their rubbish on the street, why? Could this be different if there would be more information given out?
- How can knowledge gained in school affect the public, hence also the population in Meru?
- Some people might say that everyone can help to protect our nature, what do you think?
- Do you think there is a difference in how various social classes treat their natural surroundings and if so in which way?

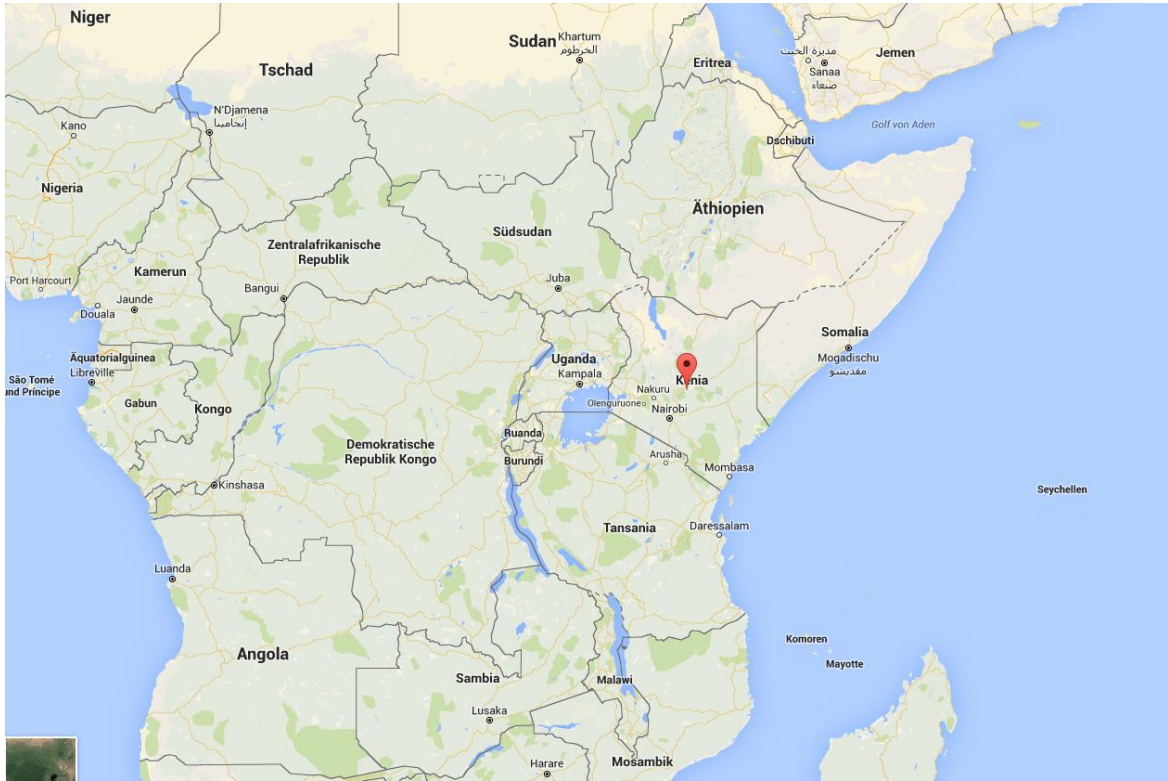
FUTURE (Workshop)

- Do you think that environmental issues are an important topic and that students/pupils should learn more about it?
- In which ways could it be useful to give out information?-
- Could education in this field be helpful for our future? What could students keep from lessons about environmental issues?
- In which way could education help to protect our environment?
- How could a productive workshop or lesson in environmental education in your point of view look like?

11.2 Maps



Map 1: Meru town (Google maps, 2016.)



Map 2: Kenya (Google maps, 2016.)