

The Extent To Which Climate Change Has Been Mainstreamed In Kenyan TVET Institutions

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Abstract

Africa, particularly Kenya, is one of the world's regions most severely impacted by climate change. Technical and Vocational Education and Training (TVET) has gained increased significance in international debates on climate change since education is the only thing that can genuinely bring about substantial change in society, the environment, or the economy. This paper's primary goal is to shed some insight into the extent to which the Kenyan government has integrated climate change into the educational system, notably in technical and vocational training facilities. Secondary research was used to examine the information from already-existing resources and publications to define and contextualize the concepts of TVET and climate change. To lessen the effects of climate change, this study found that most TVET institutions in Kenya still lack established institutional policies on greening TVET.

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I. Introduction

One of the regions of the world most severely impacted by climate change is Africa, particularly Kenya. The global warming rate is higher than the average and is likely to keep increasing, claims Jahonga et al. (2015). Disastrous floods and severe droughts have frequently made the news in recent years. In other cases, the impacts are irrevocable, at least in the near term, leaving the indigenous impoverished. The most significant environmental dangers to rural livelihoods in Kenya include droughts, frequently accompanied by floods, especially in ASALs (arid and semi-arid regions). More than 70% of Kenyans live in rural areas where rain-fed agriculture provides their primary means of subsistence. Sadly, droughts are increasingly a recurring issue with a high concentration of chronic vulnerability in the ASALs. Droughts have harmed agriculture and every other area of the economy, including tourism and the rate of modernization. However, the Kenyan government is committed to combating climate change nationally and showing leadership in the global effort. This study will show how far the government has incorporated climate change into the educational system, particularly in technical and vocational training facilities.

II. Background

Central to the growth process is education. Kenya's government has subsidized primary education and made secondary education accessible in recognition of education's crucial role in fostering socioeconomic development. In addition, there are 67 universities in 2023, up from just 4 in 1990. Also, the government has registered over 100 TVET institutions, providing over 278 authorized courses nationwide. As a result, the predicted literacy rate in 2022, defined as the percentage of adults over 15 who can read and write, is 87.4%.

According to Kenya Vision 2030 | Kenya Vision 2030 (2012), providing all its residents with a high quality of life by 2030 in a safe and secure environment is one of the social pillar's top priorities, and quality education is one of those priorities. Since 47% of Kenyans live in poverty, the country's high % literacy rate of 87.4% has had little impact on economic growth. According to Jahonga et al. (2015), there hasn't been much research to assess the value and applicability of education in economic development. In Kenya, the disparity between economic growth and literacy rates is attributed to the lack of empirical studies on the success of educational programs. Because environmental issues, particularly droughts, pose the greatest threat to Kenya's economy, this study sought to examine the role played by the educational system, specifically TVET institutions.

III. Objective

The study's principal goals were to determine how much climate change has been mainstreamed at Kenyan TVET institutions and how many students know it.

IV. Methodology

Secondary research was employed to evaluate data from existing resources and publications to define and contextualize the notions of TVET and climate change. According to Sun and Lipsitz (2018), some social *The Extent To Which Climate Change Has Been Mainstreamed In Kenyan TVET Institutions*

research issues can be answered using data that researchers have gathered for another purpose. Sun and Lipsitz (2018) credit the vast data volumes that academics have recently collected for the frequency of using existing data for the study. They continue by saying that using such data is a possible alternative. To evaluate TVET's reaction to the global difficulties of climate change, the paper first examined the data that is currently available on international practices. It then made several important recommendations that will allow TVET to continue to address the global challenges of climate change effectively.

V. Results and discussion

Jahonga et al. (2015) conducted a study to determine how students and staff felt about the availability of green technologies and green skills for young people and women in TVET institutions in the Western area. This was based on the observations that learners are increasingly responsible for their learning as they seek out, gather, synthesize, and impart their knowledge to others and that the role of the teacher appears to shift from knowledge transmitter to facilitator, knowledge navigator, and occasionally co-learner. The results showed that both respondents had a mean rating higher than 2.5 on whether students and staff were informed about different green skills and technologies in TVET institutions. This resulted in a broad agreement that staff and students are educated about the kinds of green technology and abilities available in TVET colleges. Solar energy, organic farming, tree planting, and biogas are examples of green technology projects and skills students might easily name. However, it was discovered through interviews that a small number of students had never heard the term "green technology." This result demonstrated that TVET programs in Kenya's western area do not entirely incorporate green technology. Managers were compelled to plan workshops and seminars on green technology to keep professors updated on the latest developments in this field because green technology was not included in the syllabus. TVET colleges have made progress in educating students about green technology. Still, this education has not translated into a practical approach to green technology, possibly due to the institutions' limited investment in green technology.

The majority of TVET institutions in Kenya, according to Miseda and Ahmed (2018), still lack explicit institutional policies on greening TVET (GTVET). A supportive institutional policy environment and structure are essential for effectively integrating GTVET into any educational system (Huho, 2015). According to Pavlova (2016), teachers generally lack confidence and greening expertise. Additionally, teachers' utilization of new greening skills in their lessons is influenced by their attitude, motivation, and greening talents. While green skills continue to progress in industrialized nations, Kenya still sees a lag in their implementation, which only serves to accelerate environmental degradation. These results demonstrate that the institutional administrations have not fully embraced the GTVET ethos inside their institutions.

Miseda and Ahmed (2018) state that the weak connection between national and institutional policies can be the main barrier to TVET participation in Kenya's efforts to combat climate change. Although there is a complex national policy framework, there is little evidence of institutional policies addressing climate change adaptation and vindication measures in the curriculum or TVET greening efforts based on the national policy framework.

In the words of researcher Jahonga et al. (2015), Green Technology (GT) aims to address the problems of promoting growth and the elimination of poverty, building new and thriving economies based on clean technology, and securing an ever-greener planet in a time of global economic crisis and climate change catastrophe. There has been a paradigm shift. Investing in and developing green technologies is ultimately essential in this century. A substantial portion of the world's CO₂ emissions, roughly 70% of all greenhouse gas emissions, are produced in cities, mainly in the building and construction, urban transportation, and energy sectors. Preventing catastrophic climate change is the most critical global challenge we are now facing. This prevention calls for a multifaceted strategy that includes training and education. It is a significant issue for Kenya and most developing nations to foster the transfer of green technology by developing technical capacities and institutional frameworks for adaptation and development. Because it considers environmental costs, green technology is typically more expensive than the technology it seeks to replace.

Miseda & Ahmed (2018) state that a lack of human resources and ability, knowledge, high implementation costs, and an absence of alternative process technologies are likely obstacles to adopting green technology. To address these issues, TVET institutions with a mandate for technical training would need a paradigm shift. Green qualification was demanded during the 2011 International Consultation Meeting in Bonn, which linked the economy to providing sufficient employment opportunities. However, this is only possible if a strong connection exists between TVET and the economy. Given this context, it is unsurprising that TVET systems deal with more difficulties than programs focused on the workplace. A sufficient number of personnel with the

necessary skills must be available to develop, install, and run environmentally friendly and efficient technologies and processes. Only then can strategies, programs, and actions for protecting the environment and its resources be implemented.

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If TVET is given a significant role in the green economy and sustainable development, public and private TVET institutions will be subject to high demands. The ideas and concepts of sustainability protection are critical development tasks at the micro level of training programs for the environment and resources. Here, practice-based vocational schools would demonstrate which competencies need to be fostered and trained among youth for them to be able to contribute professionally to societal transformation. Protecting the environment, natural resources, and sustainable development would become the main focus of accredited vocational schools. They would develop into much more than a supplementary, transient problem left to lone, dedicated teachers and trainers or receiving only peripheral attention through particular programs.

VI. Recommendations

Institutions should foster technical skills at the institutional level to transition to a greener economy. They should also plan workshops and in-service training for TVET instructors in the rapidly expanding green sectors. Additionally, TVET institutions must better align classroom and workplace learning through apprenticeships. To meet local, regional, or national needs, the government should develop education and training initiatives in coordination with pertinent ministries. In addition, the government should update TVET curricula to include courses in sustainable agriculture, energy-saving and cleaner technologies, and conventional technologies repurposed as green technology.

VII. Conclusion

In brief, this study aims to shed light on how the government has integrated climate change into the educational system, particularly in Kenyan Technical Vocational Education and Training Institutions. This study identified that most TVET institutions in Kenya still don't have defined institutional policies on greening TVET as a strategy to reduce the effects of climate change. Furthermore, teachers generally lack confidence and greening expertise. The weak link between national and institutional policy impedes TVET participation in Kenya's attempts to mitigate climate change. The government has to revamp TVET curricula to cover topics like green technology repurposed from conventional technologies, energy-saving and cleaner technologies, and sustainable agriculture.

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