

Assessment of Stakeholders' Perception of Campus Sustainability at Higher Education Institutions of the South West Region of Cameroon: Implications for a Sustainable Future

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ABSTRACT

This study sought to examine campus sustainability at universities with a focus on how universities are integrating sustainability concerns into their core functions of teaching, research, community engagement and university management operations. While Higher Education Institutions have been identified as key agents for improving sustainable development, there are few studies available to demonstrate what roles they play and what practices prevail in these institutions to achieve sustainability. In this vein, the main objective of this research work was to obtain an overview of higher education stakeholders' perception about campus sustainability principles and practices at some selected Higher Education Institutions of the South West Region that will promote the attainment of the global Sustainable Development Goals (SDGs). The study aimed to assist Higher Education Institutions to develop comprehensive institutional strategies that would enhance their overall institutional mission and action plans towards achieving sustainable development. Practically the study examined campus sustainability under two constructs; Institutional Governance and Campus Operations. Two research questions were therefore answered. Literature was reviewed, giving adequate attention from different conceptual, theoretical and empirical perspectives. A descriptive survey research design was adopted for the study, using a mixed method through which data was drawn from a sample of 456 respondents. The stratified and purposive samplings were adopted to select the respondents. A higher education sustainability assessment questionnaire (HESAQ) and interview were instruments used for data collection. The findings established that: a significant proportion of respondents indicated that institutional governance is limited in the incorporation of sustainability principles. Also more than half of respondents indicated campus operations do not foster sustainability. The fundamental recommendation was the need for Higher Education Institutions to create awareness not only through the universities' curriculum and research, but also via its operational practices and facilitate environments for all stakeholders as well as the local community to develop their

understanding and competencies towards sustainable living. It is hoped that the findings of this study will serve as a guide for higher education institutions in their on-going sustainability efforts in providing a basis for informing better policy and planning towards creating sustainable campus culture for higher education institutions to serve as precursors for the attainment of the global sustainable development agenda.

Introduction

Higher education is essential for human development, and the rate of people with this level of education has increased dramatically over the last decades (Schofer & Meyer, 2005). The positive role of Higher education institutions (HEIs), such as Universities and Polytechnic Institutes, in educating decision makers and leaders has been widely acknowledged (Lozano, 2006; Wals et al., 2010). However, there is also evidence that these institutions have been slow to respond to the global sustainability challenges and in some extent may even contribute to aggravate them by focusing on unsustainable models of development (Sterling & Scott, 2008).

The new Sustainable Development Goals (SDGs), with the prospect of 2030, emphasize among others, the relevance of higher education in endeavours toward a better future. More so, an increasing number of Sustainable Development-related missions and declarations in HEIs have been launched in response to the on-going concerns of sustainability and to guide universities to perform sustainably (Ramos, 2016).

In order to attain the global sustainable development goals (SDGs), sustainability principles need to be at the heart of higher education institution's strategy. University campuses themselves need to be sustainable so as to be able to cause a societal transition towards sustainability. Therefore, campus sustainability has become an issue of global concern for university policymakers and planners as a result of the realization of the impacts the activities and operations of universities have on the environment and society at large.

Campus Sustainability according to Alshuwaikhat and Abubakar (2018) is a strategy for the improvement of sustainable practices on campus to raise awareness among students and staff on sustainability and related issues. It is a strategy employed by universities to reduce ecological impacts while improving social welfare and economic wellbeing. Higher education institutions (HEIs) are frequently counted among the key players in creating a path for society towards sustainable development (Sterling, 2004). It has been pointed out that this requires a fundamental change in the culture, purpose, policy, and practice of higher education institutions (Huge, 2018).

In the past decade, higher education institutions have been called upon by the United Nations Conference on SD to commit to the development of sustainable practices (Rio+20, 2012). As a result, many higher education institutions (HEIs) around the world are engaging in sustainable practices with concrete and tangible programs on their campuses. Specifically, increasing numbers of universities are taking steps to integrate sustainability into different aspects of their facility operation and management, curriculum development, and research initiatives, as reviewed in a companion report prepared by the Institute for Sustainability, Energy, and Environment (iSEE) (Cai & Shafiee-Jood, 2017).

A sustainable university campus therefore connotes a clean and enjoyable campus environment that promotes equity and social justice, having a prosperous economy through energy and resource conservation, waste reduction and efficient environmental management that benefits the present and future university community (Faes, 2006). Genuine commitment to sustainability is evidenced in the critical dimensions of institutional life. For example, written statements of mission and purpose, academic programmes, energy and purchasing practices, and outreach (Calder, 2000). According to Jane and Card (2012), the recognition of all stakeholders' co-operation and participation is required to effectively achieve sustainability goals.

Statement of the Problem

The increase and inefficient use of resources has engendered pollution, loss of biodiversity, poor health and poverty that as well pose threats to humanity besides climate change. Despite the existence of a plethora of Higher Education Sustainability movements and protocols to help curb these challenges, most of the HEIs have been making but snail stride efforts towards signing most of these protocols to express commitment in incorporating and institutionalizing sustainability practices into their campuses. It was observed that most of the higher education institutions do not have eco-management policies; as a result, their waste is being disposed in an unsustainable manner (burning) that aggravates the sustainability challenge (ULSF, 1999).

According to University Leaders for a Sustainable Future (ULSF, 1999), HEIs, in a bid to minimizing their ecological impact, they emphasize operational practices that include waste management, recycling, carbon dioxide and air pollution reduction, energy and water conservation practices, sustainable production, sustainable transportation programmes and purchasing. Through careful observation and investigation, the researcher realized that the absence of these practices is glaring with limited and in some cases no institutional policies to address and enforce them. This is a call for concern as many scholars have advocated for a more inclusive and whole- of- institution approach to achieving sustainability (Alshuwaikhat & Abubaka, 2008).

Objectives of the Study

The study generally examined stakeholders' perception of campus sustainability practices to promote the attainment of the sustainable development goals (SDGs) in the South West Region of Cameroon.

Specifically, the study set out to:

1. Elicit stakeholders' views about higher education institutional governance that promote sustainable development goals (SDGs) attainment in South West Region of Cameroon.
2. Investigate stakeholders' perception about university campus operations that enhance the attainment of SDGs in South West Region of Cameroon.

Research Methods

Area of Study

This study was carried out in Buea. Buea is a historic town of the South West Region of Cameroon. It hosts the University of Buea, longest existent Anglo-Saxon university in the country. It is the site of several other higher institutions of learning. About 300,000 people live in Buea (Buea- Wikipedia). It is located at the foot and eastern slope of Mount Cameroon, the highest mountain in West and Central Africa. It was the capital of German Kamerun during German colonial rule, capital of Southern Cameroons under British colonial rule, the capital of the Federated State of West Cameroon, and now capital of the South West Region. Buea has a surface area of 870 Sq.km. (National Institute of Statistics), 67 villages, four distinct identified urban spaces (Buea station, Soppo, Molyko/Mile 17 and Muea). Buea has a subtropical highland climate.

Buea is an academic ground full of a plethora of educational establishments especially, higher education institutions. These higher educational institutions offer variety of programmes, ranging from undergraduate to post-graduate level. Among the higher education institutions in Buea, only one is state owned called the University of Buea, with several private education institutions and a few conventional university institutes.

Lately, the city of Buea has experienced an exponential growth in its population as a result of the socio-political instability characterized by insecurity, threats and unrest in many towns and villages of the South West Region of Cameroon. Many people had fled from their respective towns of origin to the city of Buea as they found it a haven of rest from all their socio-political threats and insecurity.

With this rural exodus and massification, has come new socio-economic challenges for the Buea municipality which include among others; housing crises, increased school enrolments, waste generation, increased consumption, pollution, traffic congestion with increased emission of greenhouse gases into the atmosphere, increased unemployment all of which pose a threat to the

viability of neighbourhoods. Educators have also seized the opportunity to create new higher education institutions to accommodate the amassing population of the young migrants.

Given this, the Buea municipality is faced with the challenge of meeting the diverse needs of existing and even future residents, and ensure a high quality of life and provide opportunity and choice for all through ensuring effective use of natural resources, enhance the environment, promote social cohesion and inclusion and strengthen economic prosperity.

Incorporating sustainability education into these higher education institutions will assist students to develop life-skills and competencies to take action for sustainability in their personal and professional lives within their community and also at global scale, now and in the future.

Research Design

This study made use of the descriptive survey research design because it set out to define higher education stakeholders' perception about sustainable practices found on the different campuses. The questions used to collect information have been grouped into predefined categories and are closed-ended. Grouping the responses into predetermined choices provided statistically inferable data that permitted the researcher to measure the significance of the results on the target population. The data provided statistical inferences for the target population. Thus this study was quantitative in nature and conclusive.

The study employed the mixed method specifically the explanatory sequential method. That is to say, both the questionnaire and interview were used to collect data. There was quantitative data collection and analysis which was followed up with a qualitative data collection and analysis and then the interpretation was done to determine what quantitative results need further explanation.

The parent population of the study was 32,800 which consisted of internal stakeholders of higher education institutions of the South West Region (SWR) of Cameroon according to World Bank Development Indicators of 2019. The target population was 31,660 made up of the students, lecturers and administrators of these institutions while the accessible population 27,729 was made up of these classes of stakeholders from 5 higher education institutions of the SWR of Cameroon.

A sample of 456 stakeholders was selected from the accessible population to work with. Both stratified and purposive sampling techniques were employed to get this sample. The descriptive survey research design has a number of advantages which include among others; multiple methods of data collection; fast and cost effective; comprehensive and a high external validity.

As earlier mentioned, the research employed a survey method. A sample survey as defined by Kothari (2004) is a descriptive study which seeks or uses a sample data of an investigation to qualitatively and quantitatively describe or explain the existence or non-existence of the phenomenon being investigated. In a sample survey, views and facts are collected from a representative population using instruments such as questionnaires, interviews, observation checklists and analyzed to answer research questions (Nworgu, 2006).

Based on the above examination, the descriptive research design, based on the survey method was therefore suitable for this study as it seeks to explore what perception higher education stakeholders have gained as to what sustainability practices exist in the various institutions that can go a long way to impact the stakeholders in adopting sustainable lifestyles.

Data collection and analysis

The instruments used for data collection were the questionnaire, interview and observation checklist. The researcher employed the face-to-face approach in administering the instruments doing mostly on-the-spot administration. The researcher ensured the face and content validity by submitting the instruments to a panel of experts who gave their judgment as to the clarity, relevance and appropriateness of the items. With necessary adjustments being done on the questionnaire and interview guide recommended by the validation experts, the questionnaire was pilot tested on 25 stakeholders who make up part of the target population, but not part of the sampled population. The

data generated from the trial test was used to establish the reliability of the instruments. The reliability was determined using the estimate of internal consistency (Cronbach’s Alpha method). The internal consistency of the participants was satisfactory for all variables with Cronbach Alpha coefficients values ranging from 0.801 to 0.891. The overall reliability of the instrument was 0.821 which was above the recommended threshold of 0.5.

Data was analyzed using quantitative and qualitative methods. The quantitative data were analyzed using the descriptive and inferential statistical tools. The descriptive statistical tools used are frequency count, percentages, and multiple responses set. On the other hand, the qualitative data derived from semi-structured interview guide were analyzed using the thematic analysis approach with the aid of themes, groundings/frequency and quotations.

Findings and Discussion

Table 1: Return Rate of Questionnaire

Participants	Number of questionnaires administered	Number of questionnaires returned	Return rate
Postgraduate students	324	305	95.8
Lecturers	102	96	98.3
Administrators	30	22	84.6

From Table 19 above, it is observed that out of the 456 administered copies of higher education sustainability assessment questionnaires (HESAQ), 423 were successfully returned to the researcher making a return rate of 92.9% as against 33(7.1%) not returned.

Demographic data of respondents

Table 2: Distribution of Post-Graduate Students by Demographic Data

Demographic data		Frequency	Percentage
Institution	University of Buea	254	78.4
	BIAKA Institute	26	8
	Catholic University	16	5
	HIMS	18	5.5
	PAID-WA	10	3.1

n= 324

Describing the post-graduate students by institution, 78.4% of post graduate students are from University of Buea, 8% from BIAKA Institute, 5% from Catholic University, 5.5% are students of HIMS and 3.1% are from PAID-WA.

Table 3: Distribution of Lecturers by Demographic Data

Demographic data		Frequency	Percentage
Longevity in service	0-5 years	46	45.3
	6-10 years	22	21.9
	11-15 years	9	8.3
	16-20 years	7	6.2
	Above 20 years	12	12.2
	Not specified	6	6.0
Institution	University of Buea	71	70
	BIAKA Institute	11	10.8
	Catholic University	11	10.8
	HIMS	4	3.9
	PAID-WA	5	4.9

n= 102

Describing the lecturers by institution, 70% of lecturers are from University of Buea, 10.8% are from BIAKA Institute, 10.8% are from Catholic University, 3.9% are from HIMS and 4.9% from PAID-WA. Based on longevity in service, 45.3% of lecturers have been in service for 0-5 years, 21.9% lecturers have been in service for 6-10years, 8.3% lecturers have been in service for 11-15 years, 6.2% lecturers have been in service for 16-20 years and 12.2% lecturers have been in service for above 20 years.

Table 4: Distribution of Administrators by Demographic Data

Demographic data		Frequency	Percentage
Longevity in service	0-5 years	22	72.7
	6-10 years	5	16.7
	Above 10 years	3	10.6
Institution	University of Buea	10	33.3
	BIAKA Institute	6	20
	Catholic University	6	20
	HIMS	5	16.7
	PAID-WA	3	10

n= 30

Describing the administrators by institution, 33.3% of administrators are from University of Buea, 20% are from BIAKA Institute, 20% are from Catholic University, 16.7% are from HIMS AND 10% from PAID-WA. Based on longevity in service as an administrator, 72.7% have been administrators for 0-5 years, 16.7% have been administrator for 6-10 years and 10.6% have been administrator for above 10 years.

Research Question One: What is stakeholders’ perception about higher education institutional governance that promotes the attainment of the SDGs?

Table 5: Respondents’ Perception about Institutional Governance that promotes Sustainability

Item	Stretched					Collapsed	
	SA	A	U	D	SD	SA/A	SD/D
1. The overall mission statement of the institution incorporates the concept of sustainability.	133 (29.2%)	206 (45.2%)	81 (17.7%)	11 (2.4%)	25 (5.4%)	339 (74.5%)	36 (7.8%)
2. My faculty plan includes goals and objectives that move the institution towards sustainability.	137 (30.0%)	241 (53.0%)	34 (7.4%)	24 (5.2%)	20 (4.4%)	378 (82.9%)	44 (9.6%)
3. My institution employs a whole-system’s approach in planning and evaluating sustainability.	48 (10.6%)	241 (52.9%)	78 (17.1%)	68 (15.0%)	21 (4.4%)	289 (63.5%)	89 (19.5%)
4. My institution commemorates the World Sustainability Day.	25 (5.5%)	126 (27.8%)	143 (32.3%)	137 (30.0%)	21 (4.4%)	151 (33.3%)	162 (34.4%)
5. There is a mission statement specifically for the institution’s sustainability program.	59 (13.1%)	177 (38.9%)	121 (26.3%)	78 (17.3%)	21 (4.4%)	236 (52.0%)	99 (21.7%)
6. My institution has a sustainability office to cater for sustainability issues.	3 (0.7%)	51 (11.3%)	106 (22.7%)	182 (40.0%)	115 (25.2%)	54 (12.1%)	297 (65.3%)
7. The institution has a sustainability coordinator.	8 (1.8%)	5 (1.1%)	161 (35.2%)	172 (37.7%)	110 (24.3%)	13 (2.9%)	282 (62.0%)
8. The university has the policy of rewarding departments for helping the	21 (4.8%)	12 (2.8%)	140 (30.9%)	187 (40.8%)	96 (20.8%)	33 (7.5%)	283 (61.5%)

institution operate more sustainably.							
9.The institution has a publicity and public relations component used to promote its sustainability programs in and out of the school milieu.	15 (3.4%)	149 (32.7%)	113 (24.8%)	158 (34.6%)	21 (4.4%)	164 (36.1%)	179 (39.1%)
10.My institution has a policy to issue a Staff Sustainability Assessment Form at the beginning of every school year.	0 (0.0%)	0 (0.0%)	181 (39.8%)	181 (39.8%)	94 (20.3%)	0 (0.0%)	273 (60.2%)
11.My institution has a policy to issue a Student Sustainability Assessment Form for all students to fill at the beginning of the academic year.	0 (0.0%)	0 (0.0%)	143 (31.0%)	180 (39.5%)	133 (29.2%)	0 (0.0%)	313 (68.7%)
12.To help in funding sustainability activities on campus, the institution has levied alongside registration fee, a meagre sustainability fee on its students.	0 (0.0%)	0 (0.0%)	168 (36.6%)	119 (26.2%)	169 (37.2%)	0 (0.0%)	288 (63.4%)
Multiple Response Set (MRS)	449 (8.4%)	1208 (24.0%)	1469 (24.8%)	1497 (27.2%)	846 (15.5%)	1657 (32.4%)	2343 (42.8%)

In overall, findings revealed that (32.4%) of respondents indicate that their institutional governance incorporate sustainability while (42.8%) of them indicate that their institutional governance does not incorporate sustainability with (24.8%) neutral. Specifically, positively, an overwhelming majority (74.5%) of respondents said the overall mission statement of the University incorporates the concept of sustainability while few (7.8%) of the respondents thought otherwise. Also, a landslide majority (82.9%) of respondents agreed that their faculty plan includes goals and objectives that move the institution towards sustainability while a few (9.6%) had a contrary response. Findings also showed that (63.5%) of respondents accepted that their institution employs a whole-institution’s approach in planning and evaluating sustainability while 19.5% objected. Furthermore, (52.0%) of respondents accepted that there is a mission statement specifically for the institution’s sustainability program while 21.7% disagreed.

Negatively, majority of respondents (65.3%) indicated that their institution does not have a sustainability office to cater for sustainability issues while 12.1% of respondents disagreed. Also, (62.0%) of respondents indicated that the institution does not have a sustainability coordinator. Similarly, (61.5%) of respondents indicated that the institution has no policy of rewarding departments for helping the institution operate more sustainably. In accordance to the view of 39.1% of respondents, the institution has no publicity and public relations components used to promote its sustainability programs in and out of the school milieu. Also, 33.3% of respondents indicated that their institution commemorates the World Sustainability Day while 34.4% of respondents thought otherwise.

Remarkably, no respondent (0.0%) agreed their institution has a policy to issue a Staff and a Student Sustainability Assessment Form at the beginning of every school year while 60.2% and 68.7 respectively disagreed their institution upholds such a practice. Likewise no respondent agreed the institution has levied a sustainability fee on its students to help in funding sustainability activities on campus while 63.4% equally disagreed such a practice exists in their institution. The figure below also presents the summary of findings on respondents’ awareness about institutional governance and the promotion of sustainability.



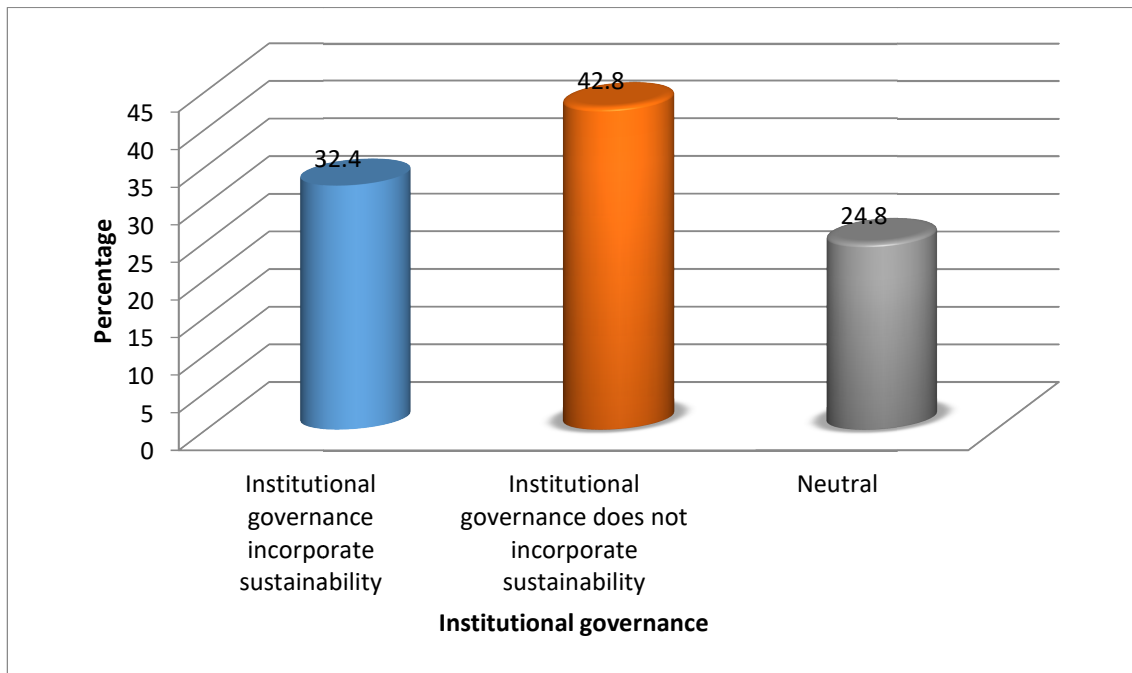


Figure 1: Respondents' Overall Perception about Institutional Governance that promote the attainment of SDGs

As depicted on the figure, findings revealed that 32.4% of respondents indicated that institutional governance incorporate sustainability while 42.8% of them indicated that institutional governance does not incorporate sustainability with 24.8% of them neutral.

Research Question Two: What is higher education stakeholders' perception about university campus operations in enhancing the attainment of SDGs in Cameroon?

Table 1: Respondents' Perception about University Campus Operations that Foster Sustainability

Item	Stretched					Collapsed	
	SA	A	U	D	SD	SA/A	SD/D
24. The institution recycles food and plant waste to other forms of fuel.	32 (7.1%)	70 (15.4%)	95 (20.9%)	165 (36.1%)	94 (20.6%)	102 (22.5%)	259 (56.7%)
25. The institution has the tree planting culture to improve the environmental air quality.	105 (23.0%)	183 (40.1%)	35 (7.7%)	84 (18.5%)	48 (10.6%)	288 (63.1%)	133 (29.1%)
26. Students are required to pay a sustainability fee alongside their tuition.	0 (0.0%)	0 (0.0%)	172 (19.5%)	145 (31.8%)	139 (30.5%)	0 (0.0%)	284 (62.3%)
27. The institution has an organic food market on campus.	38 (8.5%)	84 (18.4%)	64 (13.7%)	170 (37.4%)	100 (22.0%)	122 (26.9%)	270 (59.4%)
28. The institution prints on recycled paper.	23 (5.1%)	68 (14.9%)	91 (19.8)	153 (33.7%)	121 (26.5%)	91 (20.0%)	274 (60.2%)
29. My institution has a Refill Station Locator that describes the various points of Water Refilling Stations on campus.	0 (0.0%)	0 (0.0%)	177 (16.3%)	170 (37.3%)	109 (23.9%)	0 (0.0%)	279 (61.2%)
30. The institution practices waste segregation on campus.	0 (0.0%)	0 (0.0%)	84 (18.4%)	246 (25.6%)	126 (18.8%)	0 (0.0%)	372 (44.4%)
31. The institution has employed the green building technology to maintain indoor temperature in its buildings.	9 (2.1%)	4 (1.0%)	172 (38.1%)	147 (32.2%)	124 (27.3%)	13 (3.1%)	271 (59.5%)
32. The institution produces its own electricity locally from	0 (0.0%)	0 (0.0%)	56 (12.3%)	126 (28.1%)	154 (33.7%)	0 (0.0%)	330 (72.2%)

renewable energy sources.							
33. The institution encourages the use of non-fossil fuel transportation on campus.	0 (0.0%)	0 (0.0%)	151 (33%)	165 (36.1%)	140 (30.8%)	0 (0.0%)	305 (66.9%)
34. Authorities have implemented the carpool policy.	13 (3.0%)	49 (10.9%)	120 (26.1%)	146 (32.1%)	127 (28.0%)	62 (13.9%)	274 (60.1%)
35. My university has a biking culture, that is, makes available bicycles to its students and staff to commute on campus.	0 (0.0%)	0 (0.0%)	86 (18.7%)	148 (32.4%)	222 (48.8%)	0 (0.0%)	370 (81.3%)
36. The institution has implemented the “dark campus” policy (e.g. installing a device that turns lights off automatically when the room is unoccupied).	18 (4.1%)	36 (7.9%)	42 (8.9%)	163 (35.7%)	197 (43.3%)	54 (12.1%)	360 (79.0%)
37. The institution has developed an Environmental Purchasing Policy (EPP) that permits it to return used equipment to suppliers.	17 (3.9%)	44 (9.7%)	116 (25.0%)	145 (31.9%)	134 (29.4%)	61 (13.7%)	279 (61.3%)
38. The institution composts food and plant waste to fertilizers.	18 (4.1%)	42 (8.9%)	188 (41.2%)	128 (28.1%)	80 (17.6%)	60 (13%)	208 (45.7%)
39. The institution has student-managed farms to provide hyper-local and healthy produce to its catering services.	68 (15.1%)	134 (29.4%)	70 (15.4%)	113 (24.8%)	70 (15.3%)	203 (44.6%)	183 (40.0%)
40. The institution has implemented the “Trash for Cash” initiative as a strategy for waste reduction.	0 (0.0%)	0 (0.0%)	98 (21.5%)	158 (30.6%)	200 (28.1%)	0 (0.0%)	358 (78.5%)
41. The institution upholds the policy of double-sided printing as a strategy to save money and reduce waste.	55 (12.2%)	117 (25.7%)	55 (12.2%)	144 (31.6%)	85 (18.3%)	172 (37.9%)	229 (49.9%)
42. My institution commemorates the World Sustainability Day.	46 (10.1%)	108 (23.7%)	93 (20.4%)	123 (26.9%)	86 (18.9%)	154 (33.8%)	209 (45.8%)
Multiple Response Set	474 (7.8%)	939 (17.5%)	1616 (17.2%)	2522 (31.7%)	2247 (25.9%)	1413 (25.3%)	4769 (57.6%)

In aggregate, results showed that 57.6% of respondents indicated that campus operations do not foster sustainability while 25.9% indicated that campus operations foster sustainability and 17.2% neutral. Specifically, while 22.5% of respondents affirmed that the institution recycles food and plant waste to other forms of fuel, majority (56.7%) of the respondents opposed this point of view. Contrary to few (18.6%) of respondents, majority (69.7%) of the respondents indicated that their institution has the tree planting culture to improve the environmental air quality. Noticeably, no respondent 0.0% agreed that students are required to pay a sustainability fee alongside their tuition, majority of them (62.3%) denied. Over half (59.4%) of the respondents denied the existence of an organic food market on their campus while a few (26.9%) of respondents confirmed its existence.

Findings also revealed that majority of respondents (60.2%) indicated that their institution does not print on recycled paper. In the same trend, there was no indication of the existence of a Refill Station Locator that describes the various points of Water Refilling Stations on campus. Findings further revealed a significant proportion of respondents (44.4%) indicated that their institution does not purchase environmentally friendly equipment. Also, (59.5%) of respondents expressed that their institution has not employed the green building technology to maintain indoor temperature in its buildings.

Conspicuously, it was revealed that none of the institutions produces its own electricity locally from renewable energy sources. In the same trend, no institution has yet encouraged the use of non-fossil fuel transportation on campus. Also, (60.1%) of the respondents indicated that their authorities have not implemented the carpool policy. Remarkably, no respondent agreed its institution has developed a biking culture, that is, makes available bicycles to its students and staff to commute on campus.

As opposed to a majority of respondents (79.0%) of the respondents, only a few of respondents (12.1%) were of the opinion that their institution has implemented the “dark campus” policy (installing a device that turns lights off automatically when the room is unoccupied). Furthermore, contrary to (61.3%) of respondents, only (13.7%) of respondents were of the opinion that their institution has developed an Environmental Purchasing Policy (EPP) that permits it to return used equipment to suppliers.

Furthermore, based on the view of (36.5%) of the respondents, their institution composts food and plant waste to fertilizers while (45.7%) of respondents disagreed with this point of view. Going by the view of (44.6%) of respondents, their institution has student-managed farms to provide high quality local and healthy produce to its catering services but this however, was not true according to 40.0% of the respondents. The respondents disagreed their institution has implemented the “Trash for Cash” initiative as a strategy for waste reduction. Contrary to the views of (37.9%) of the respondents, (49.9%) of the respondents agreed that their institution does not uphold the policy of double-sided printing as a strategy to save money and reduce waste. Finally, opposing the view of (33.8%) of the respondents, (45.8%) of the respondents indicated that their institution does not celebrate the world sustainability day. The overall finding on campus operations is also presented on the figure below.

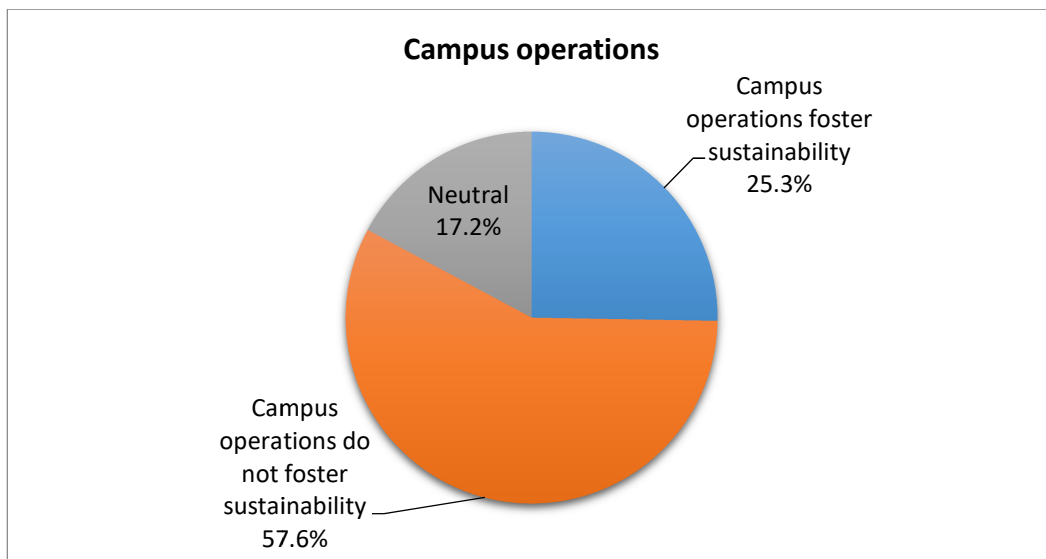


Figure 2: Respondents' Perception about University Campus Operations that Foster Sustainability

As depicted on the figure, 57.6% of respondents indicated that campus operations do not foster sustainability while 25.3% of respondents indicated that campus operations foster sustainability and 17.2% of them were neutral.

Conclusion and Recommendations

The study set out to explore higher education stakeholders' perceptions about campus sustainability at Higher Education Institutions of the South West Region. This study was prompted by visible unsustainable realities in some university campuses. Unsustainable practices contribute largely to global warming and climate change, and in a quest to avert these challenges, the United Nations through many international conventions and declarations has given due responsibility to higher

education to commit themselves to creating sustainable campuses.

The South West Region of Cameroon is rapidly urbanizing with increasing demand for shelter, food, water, energy, and means of livelihood and with increasing investment in building new universities there is the need for developing sustainable campuses so as to create awareness among university stakeholders and develop their skills and competences to curb the sustainability challenges.

Findings revealed that institutional governance does not adequately promote sustainability with little or no policies to enforce sustainability principles at universities' campuses. In spite of the fact that some institutions' mission statements reflect sustainability issues with the institutions having a sustainability mission statement specifically for the institutions' sustainability program, these institutions have not succeeded yet in translating their high-level goals and objectives into tangible projects and actionable implementation strategies. In terms of campus practices that foster sustainability, there exist very few initiatives in sustainable transportation, waste management, energy and water conservation, sustainable production and consumption and purchasing.

The study therefore recommends that universities should establish sustainability goals through institutional commitment. Signing documents such as the Talloires Declaration, Agenda 21, or the Kyoto Declaration can help institutions begin to set goals and create plans to implement sustainability on campus. Moore (2005) highlights the importance of infusing sustainability into all levels of decision making in order to shift the vision and goal of the institution towards sustainability.

Institutions can further their engagement by incorporating sustainability into the strategic plan. Embedding sustainability into the fundamental values of a university can help outline the goals and progress of sustainability efforts on campus and therefore assist the institution in creating future initiatives. This can also be done through a restructuring of the mission and values of the institution.

In creating a campus that is dedicated to sustainability, universities should set achievable goals and create administrative structures and positions on campus that is dedicated to accomplishing these goals, such as a Sustainability Coordinator and Sustainability Office. Literature suggests that the incorporation of an Office of Sustainability can help a campus become more dedicated to sustainability initiatives that will foster and maintain campus-wide collaboration.

One other effort to consider in order to helping universities more effectively implement sustainability initiatives is to produce a Higher Education for Sustainable Development (HESD) action-oriented handbook for university stakeholders.

Universities should advocate for student interest and participation in sustainability efforts. That is to say, institutions can create a campus focused on sustainability by fostering behaviour change through student interaction. If there are students interested in creating associations or groups dedicated to sustainability, then it is important to advocate for these groups and provide the necessary funding for their events and programs on campus. However, these student groups should not go without proper mentoring from staff or faculty members that are able to dedicate time and effort to helping the groups create and implement events on campus.

As a noteworthy recommendation, universities should also consider the aspect of issuing Sustainability Assessment Forms to stakeholders at the beginning of every school year and levy a sustainability fee to all stakeholders as a means to create awareness about sustainability issues. In addition, by introducing students to the effects of sustainable living during Orientation Days and special events on campus, institutions can raise awareness and foster behaviour change through showing new students that sustainability is a valuable practice at the institution.

With regards to campus operations that foster sustainability, the study recommends that, higher education institutions should adopt an Environmental Management Strategy (EMS). An environmental management strategy (EMS) is an approach to dealing with environmental problems that give responsibility to a university to implement environmental practices and regulations to ensure that environmental issues are managed consistently and systematically throughout the

university to enable it reduce its environmental impacts and increase its operating efficiency.

According to Barnes and Jerman (2002), EMS can be successful tool for educational institutions to effectively manage diverse environmental concerns and improve campus sustainability. Implementing EMS provides an effective guidance for universities to simultaneously establish, develop and review their operations and practices in more environmentally and socially responsible ways.

It includes defining specific environmental indicators like waste management, recycling, sustainable production and consumption patterns, energy and water conservation, to mention a few, that can be tracked and regularly assessed to determine whether operations are environmentally friendly. One of its most significant merits is in improving the environmental awareness of university stakeholders and in clarifying everyone's responsibility for environmental improvements.

As a startup, this study recommends that universities should introduce at the least the practice of waste segregation. This aspect is very important as it helps in reducing waste generation which is the leading factor of the sustainability concern. In addition, universities can frugally carry on energy saving initiatives to cut down their expenses on energy so as to improve their finance and stakeholders' health.

Universities are also being called upon to construct green buildings and green transportation facilities such as footpaths and cycle-ways and encouraging HOV (high occupancy vehicles) commuting on campus to reduce emission and congestion. Green buildings can reduce energy consumption and improve the well-being of the university community. The target of the energy-efficient green buildings is to have better lighting, temperature control, and improved ventilation and indoor air quality which contribute to healthy environments by reducing the dangerous air-pollutants that cause respiratory disease in campus buildings.

The importance of energy efficiency of buildings and control of the indoor air quality has been strongly emphasized at an international congress of building technology (CLIMA2007-Wellbeing Indoors) in Helsinki, Finland. The Austrian and Japanese study presented in the congress suggests that by adjusting the heating, cooling and lighting systems, energy savings up to 30-70% can be achieved. Energy efficiency and conservation could be achieved through the following ways:

- The use of more efficient HVAC systems (Heating, Ventilation and Air condition) with improved building control systems using the wide range of viable energy technologies and integrating them into overall design for maximum effect.
- The use of renewable energy sources and day lighting instead of electric light to illuminate classrooms and offices which offers dramatic reductions in buildings operations and maintenance costs.
- Reduce energy cost by installing centralized control systems to control off-hour heating, cooling, and lighting across campus.
- Reduce lighting loads by incorporating energy-efficient lighting such as motion sensors, occupancy sensors, photo sensors and dimmers.
- Water conservation can be achieved via the collection of rainwater for irrigation use and toilets flush.

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