

DEVELOPMENT OF A SUSTAINABILITY DESIGN GUIDELINES AND POLICY MEASURES FOR THE HIGHER EDUCATION INSTITUTES IN BRIDGING GAP OF CURRENT SITUATION AND SUSTAINABLE FUTURE ASPECTS

Dr. Ar. Yasmeen Ahmed¹, Ar. Harris Waheed², Ar. Uffaq Shahid^{*3}

^{*1}Chairperson Architecture Department, Lahore College for Women University;

²CEO, Express Construction;

^{*3}Instructor, Institute for Art and Culture

Corresponding Author: *

Received: 28 March, 2024

Revised: 28 April, 2024

Accepted: 10 May, 2024

Published: 15 May, 2024

ABSTRACT

Higher Education Institutes (HEIs) are essential institutions; they are a vital support of intellectual life in all societies, and especially in developing countries. Through its commitment and understanding of vigilant campus management, HEIs can set a paradigm for the society and also an example for other institutes. In order to enhance the mainstreaming of sustainability in HEI, sustainability assessment and evaluation can be seen as a milestone. Many promising sustainability assessment frameworks are developed. However, most of the present assessment framework apply to a narrow emphasis on specific aspects of sustainable development and are often sheltered into the deficiencies of pure economic numbers. Moreover, the frameworks are not based on participatory approaches i.e. involvement of major stakeholders and lag behind in completely addressing the multi-dimensional sustainability approach. As a result, sustainability could not be measured and implemented as a whole. The main objective of this paper is to make guidelines and policy for sustainable higher educational institution within the city of Lahore. This study involves case studies and data from literature for two different universities with reference to advancement of sustainability in higher education institutes.

Key Words: Higher Education Institutes, STARS, AASHE, CSAF, Lahore

INTRODUCTION

As defined by Brundtland Commission, sustainability is the assembling of the four major criteria: environment, society, economy and institution.

The involvement of key stakeholders of HEIs in enhancing the framework would be highly favored. Give an example of how different stakeholders can improve/enhance the framework. The aim of the study is to investigate different sustainability aspects in higher education institutes' system and to develop design guidelines and policy measures for the sustainability of HEIs.

The Problem Statement

The concept of sustainability has gained wide attention in higher education institutes across the world in the form of declarations, charters, tools,

systems and frameworks to evaluate sustainability in HEIs. Higher education institutes are the important drivers for promoting sustainability development, depending on the degree of integration of sustainable aspects in its intricate system.

It is the requirement of present times to implement different sustainable development strategies, because of the rising challenges to the societies in terms of natural resources and environment. Moreover, the shortfall in the monitoring and assessment of sustainability in higher education institutes is triggering an irrepressible unsustainable environment.

Therefore, different assessment and evaluation frameworks for the sustainability of HEIs are devised, acting as milestone in promoting sustainability. There are many effective approaches

among the assessment frameworks, which provide useful understandings for various audiences and addresses significant challenges of the sustainability of HEIs. Sustainability Tracking Assessment and Rating Systems (STARS), AASHE and the Campus Sustainability Assessment Framework (CSAF) approaches are more comprehensive than others.

In this study we examined different aspects and elements used by AASHE, CSAF and STARS in the approach to develop a campus sustainability assessment for three different universities of Lahore. These approaches of STARS, AASHE and CSAF are used by designers around the globe.

As these approaches and frameworks are available and executed in developing countries like the United States of America and Canada have worked on it intensively in their higher Education institutes. For Sustainable higher Education institutes, a descriptive and exploratory study is essential for analyzing of Sustainable assessment framework.

In this dissertation being a designer, there will propose development of sustainable design guidelines and policy measures for HEIs in bridging the gap between current scenario and sustainable future aspects of HEIs in Pakistan.

Aims and Objectives

The aim of the study is to investigate different sustainability aspects in HEIs by using comprehensive sustainability frameworks such as STARS, CSAF and AASHE. The purpose of this dissertation is to develop related sets of guidelines and policy measures for sustainability of Higher Education Institutes.

The main objectives of this dissertation are:

- To evaluate the sustainability of HEIs in Pakistan using internationally followed frameworks such as STARS, AASHE, and CSAF.
- To analyze three institutional case studies of Lahore w.r.t Advancement of Sustainability in Higher Education Institutes
- Development of an applied definition for sustainable higher education institutes (HEIs), based on the available published literature and key stakeholders' input.
- To develop Sustainable guidelines for the Higher Education Institutes to fill the gap of these case studies.

- To investigate the relationship of STARS, AASHE and CSAF regarding the Sustainable Higher Education Issue(s).
- To analyze common methods of analyzing urban external space of institutes and investigate the role of urban external Social Activities of Institutes

Limitations

Consequently, this study proposes to develop design guidelines with reference to environmental and social aspects of sustainability approach, into Higher Education Institutes' system, in the form of design guidelines and Policy Measures Approach.

Scope/Significance of the study

This study provides an extensive literature review of the principle elements of sustainability in higher education institutes in Lahore. Determining a fundamental definition of a 'sustainable university/HEI'.

A source of knowledge and research institution, universities around the world have responded to the implementation of the concept of sustainable development, to become an entity that can be role models and guidance to the community and other institutions. Various initiatives have been carried out by local.

Therefore, this study will contribute to provide the decision-makers with a global to local appraisal of integrated nature-society systems in short term as well as long term perspectives. It will facilitate them to regulate which actions should be or should not be approved of in an effort to create a more sustainable society.

Need of Sustainable Campus

The need for sustainable campuses is driven by the increasing awareness of environmental protection and the commitment to sustainable development goals. Sustainable campuses aim to reduce the negative impact of universities on the environment through various initiatives.

Key reasons for promoting sustainability on college campuses include:

- Attracting students who prioritize sustainability in their college choices
- Incorporating sustainability into the curriculum and campus culture

- Reducing the environmental footprint through energy efficiency, renewable energy, recycling, and sustainable transportation. Providing opportunities for students to learn about and engage in sustainability efforts.
- Sustainable campuses can serve as models for the surrounding community and inspire students to live more sustainably. By embracing sustainability, universities can improve the quality of campus life, foster innovation, and better prepare students for the challenges of the 21st century.

Research Methodology

The research methodology is based on literature review available in STARS, AASHE, CSAF, SDG and analysis of higher Educational Institutes. Sustainable Development has been further divided into different sections which involves Social, Economical, Institutional and Environmental Prospects. In this research dissertation, only two aspects; environmental and social will be covered.

These components were further elaborated through literative process of critical examination to define related factors and sub-factors, and structuring a hierarchy. Through this dissertation, a lacking gap of sustainable institutes will be filled through the proposed policies measures and design guidelines.

The stakeholders would be related to different sectors of HEI system, i.e. administrators, faculty, educationists, researchers, governing bodies, students, campus community, etc. A survey would be conducted among the key stakeholders to define the relative importance of the factors. It will help a lot in bridging gap through literature review, case studies conclusions , survey and questionnaires.

For this purpose, the two institutional buildings are selected which involves

- 1) Institute of Art and Culture
- 2) Beaconhouse National University

Literature Review

2.1 Sustainable development in universities

The papers analy sustainability initiatives across a range of geographies and geographical locations and pinpoint the main obstacles that colleges face in supporting the sustainability paradigm. The studies demonstrate that achieving sustainable development in higher education institutions calls for more than

just making declarations and creating documents—it also calls for taking actual action.

This study aims to reorient the emphasis on both teaching and learning processes in institutions' curricula and competencies by incorporating SD-related ideas, values, and practices. Although many institutions are including SD-related themes in their courses, it is thought to be challenging to teach students about sustainability.

The contribution of science and technology to the transition to sustainable development (SD) must be significantly strengthened, according to the Statement of the World's Scientific Academies, by

- (1) sustaining long-term basic research and connecting it to societal goals;
- (2) globally coupling or pairing national and local institutions in conducting effective research into systems;
- (3) establishing collaborative research partnerships between academia, government, and the private sector; and
- (4) integrating (Hassan, 2001).

Campus greening programmes are transforming how various activities are carried out in a big number of higher education institutions in an effort to incorporate sustainable development into routine university life. Like small communities, university campuses are beginning to include sustainable development ideas. In this area, universities are significant.

The three key areas that need to be improved are those that are related to the environment, the effective use of resources, and the elimination and disposal of waste. (Wright and Wilton, 2012). In general, sustainability initiatives can range from very small activities to significant ones (such as the creation of an environmental assessment system for the management of a university restaurant [Nilsson et al., 1998]), to the measurement of a university's carbon footprint [Nilsson et al., 1998]). (Larsen et al., 2013).

Additionally, the university's involvement in the social and economic advancement of the community is referred to as engagement or outreach in many academic periodicals and universities. In actuality, these two ideas are interchangeable and cover a wide range of conceivable actions. Additionally, the university's involvement in the social and economic advancement of the community is referred to as engagement or outreach in many academic

periodicals and universities. These two ideas can refer to a wide range of potential actions in practice. The Committee on Engagement of the Committee on International Cooperation (CIC) identified three criteria of engagement, namely that it is

- (1) academic, involving both the act of bringing communities and universities together and the result of the collaboration;
- (2) overlaps with the three goals of the university and is thus not carried out independently from education, research, and service; and
- (3) is reciprocating and beneficial for both parties.

Significant efforts are made to document and share the university's work in this area as this function becomes more crucial in terms of a university's obligations. Aligning the goals of the teaching faculty with those of the institution is largely facilitated by the documentation of engaged research (Moore and Ward, 2008).

Reporting their efforts toward sustainability will help universities to justify their efforts (Alonso-Almeida et al., 2012). According to Lozano (2011) and Lozano and Huisingh (2011), the three primary goals of sustainability reporting are to assess social development (SD), communicate sustainability

efforts and progress, and create a tool for analysis across universities.

As a result, SR need to be transparent to all parties involved (Moneva and Martn, 2012), and it might even enable benchmarking and SD comparisons between universities (Lozano, 2006). Reporting their efforts toward sustainability will help universities to justify their efforts (Alonso-Almeida et al., 2012). According to Lozano (2011) and Lozano and Huisingh (2011), the three primary goals of sustainability reporting are to assess social development (SD), communicate sustainability efforts and progress, and create a tool for analysis across universities.

Within higher education, SD is a clearly defined concept. Some HEIs have adopted the SD tenets, and their leaders are steadfastly dedicated to incorporating the tenets into the missions of their institutions. In four different contexts—curriculum, research, campus, and outreach—HEIs implement SD concepts. A strong SD vision needs transparent reporting to explain the advantages of SD to the HEI stakeholders.



Case Studies

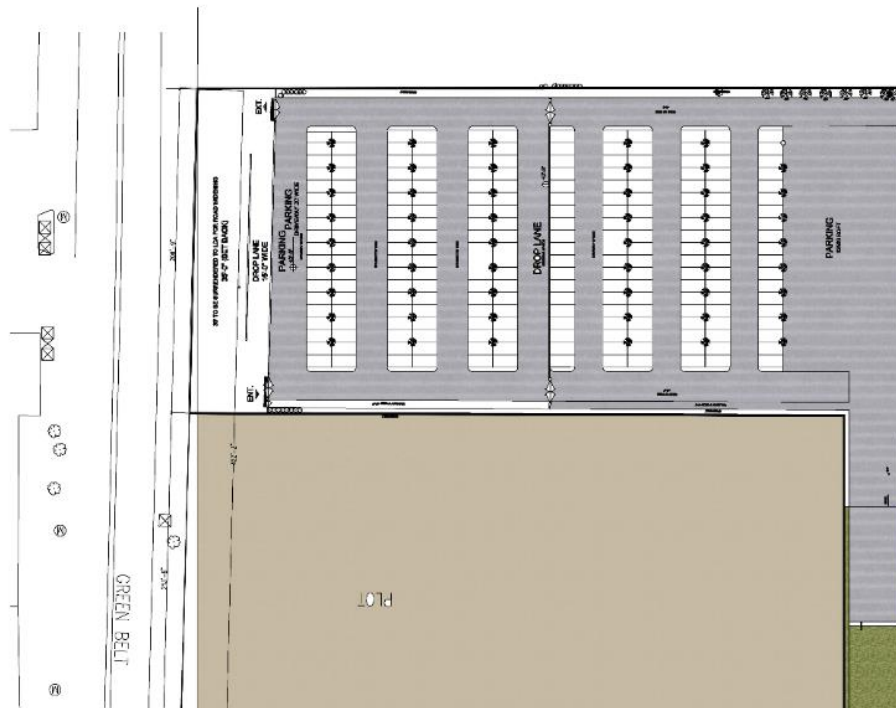
Institute of Art and Culture

Introduction

Masterplan of Institute of Art and Culture



Parking Area



Outdoor Amphitheater



Figure 1 Masterplan of Beaconhouse National University



Figure 2 Back Entrance of Building



- Well Lit and Ventilated Windows
- Studios have a great view of Courtyards
- Mezzanine floors are incorporated in Studios for multipurpose hall. Mezzanine Floors are used for office Space for instructors.
- Some of the Studios are double height because of the mezzanine floors

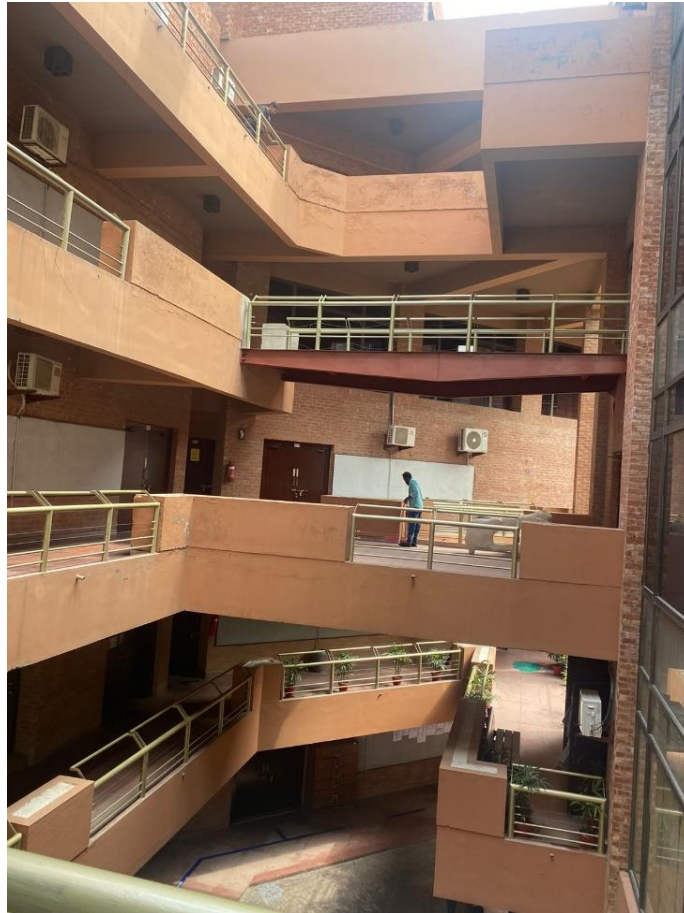


Figure 3 Courtyard View from Passageways



Figure 4 View 2 from Courtyard



Figure 5 Views of Corridors



Figure 6 Outdoor Sitting Area
International Journal of Contemporary
Issues in Social Sciences







Policy Recommendations/ Conclusions

In order to contribute to sustainable development at the local, national, and international levels, the university community needs to be forced to re-evaluate and re-build their environmental policies and practices. In order to maintain natural resources and support their sustainable use, university management should make campus sustainability the cornerstone of all campus activities, including operations, research, and teaching. This can be done by doing business in a way that protects the community's environmental health and safety.

The strategy can effectively convey participants' interests, accommodate their procedural needs, and streamline and organize operations and services to provide results that are intended to enhance university environmental performance.

The implementation of this EMS has far-reaching economic (job opportunities), environmental (sustainable resource usage), and social (improved quality of life) effects.

The coordinated strategy put forward was carefully crafted to answer the scientific community's and international organizations' calls for action. The

suggested framework for evaluating sustainability was effectively used to determine.

HEIs adhered to the fundamentals of sustainability when it was applied to a statistically representative sample of these institutions. The framework was composed of three connected indices. Most existing measures, especially those that focus on the environment, historically stress just one facet of sustainable development.

A sustainable university is one that integrates sustainability principles into its core functions of teaching, research, operations, and community engagement. Key elements for creating a sustainable university include:

- Incorporating sustainability values and principles into the university's vision, mission, and culture to guide all activities
- Developing a flexible, resilient sustainability strategy that is an integral part of the overall university strategy
- Building successful partnerships and collaborations with stakeholders to promote sustainability transformation
- Enhancing transparency through sustainability reporting and monitoring of sustainability indicators
- Strengthening leadership commitment and building green engagement among the university community
- Implementing a sustainable curriculum, adopting green technologies in learning, and developing a paperless office
- Improving the sustainability of campus facilities like water use, energy, waste management, and transportation

By embedding sustainability across teaching, research, operations and community engagement, universities can contribute to the Sustainable Development Goals and lead the way in creating a more sustainable future. However, barriers to sustainability in higher education remain, including lack of funding, resistance to change, and insufficient training of educators. Overcoming these challenges requires a whole-institution approach and commitment from university leadership.

References

1. A.D. Ursul, T.A. Ursul, Sociodynamics. 4, 1(2016)
2. L. Velazquez, N. Munguia, A. Platt, J. Taddei, J. Clean. Prod., 14, 810 (2006)
3. O.V. Saginova, Yu. L. Saginov, A.I. Grishin, Kazan Techn.Univers. Bulletin, 21, 214 (2012)
4. R. Lozano, R. Lukman, F. J. Lozano, D. Huisingh, & W. Lambrechts, J. Clean. Prod., 48, 10 (2013)
5. R. Lozano, K. Ceulemans, M. Alonso-Almeida, D. Huisingh, F. J. Lozano, T. Waas, J. Hugé, J. Clean. Prod., 108, 1 (2015)
6. N. Alghamdi, A. den Heijer, H. de Jonge, Int. J. Sustain. in HE6 , 1, 84 (2017)
7. M. Zhevlakova, Russian-German environmental information bureau., 105 (2013)
8. A. R. Kankovskaya, Procedia CIRP. 48, 449 (2016)
9. L.A. Bagrova, V.A. Bokov, T.V. Bobra, A.N. Rudyk, Geopol. and ecogeodyn. of reg., 1, 95 (2009)
10. V.T. Titov, Voronezh State University Bulletin. Series: Problems of HE, 1, 83 (2010)
11. O.A. Grishina, N.B. Zavyalova, O.V. Saginova (2012), <https://it2012.petsru.ru/>
12. E.V. Pesternikova, Interdisciplinary researches, 98 (2013)
13. A.S. Nasibulina, Materials of the annual scientific-practical conference Environmental education for sustainable development, 2, 318 (2015)
14. N.I. Koryakina, Siberian ped. J., 6, 131 (2012)
15. S. Caeiro, L. A. Sandoval Hamón, R. Martins & C. E. BayasAldaz, Sustainability, 12, 543, 1 (2020)
16. Raiting AASHE 2020, <https://stars.aashe.org>
17. UI GreenMetric World University Ranking 2020, <http://greenmetric.ui.ac.id>
18. L.P. Kichenko M.V. Pesternicova, Perm University Bulletin. Series: Economics, 1, 140 (2014)
19. M. Bauer, I. Bormann, B. Kummer, S. Niedlich, M. Rieckmann, High. Educ. Policy, 31, 491 (2018)
20. B. Giesenbauer, G. Müller-Christ, Sustainability, 3371, 1 (2020)
21. O. Scharmer, <https://www.huffpost.com/> 6 E3S Web of Conferences 208, 09030 (2020) <https://doi.org/10.1051/e3sconf/202020809030> IFT 2020
22. K. Lee, M. Barker, A. Mouasher, J. Clean. Prod., 10, 20 (2013)
23. M. L. Jorge, J. H. Madueño, M. Y. C. Cejas, F. J. A. Peña, J. Clean. Prod., 106, 34 (2015)
24. Bakos, N., & Schiano-Phan, R. (2021). Bioclimatic and regenerative design guidelines for a circular university Campus in India. *Sustainability*, *13*(15), 8238. <https://doi.org/10.3390/su13158238>
25. Benevides, M. C. D. S. E., de Andrade Guerra, J. B. S. O., Birch, R. S., & Deggau, A. B. (2021). Corporate Sustainability Benchmarking in Academia: Green Campus, Living Labs, Socioeconomic and Socioenvironmental Initiatives in Brazil. In W. Leal Filho, A. L. Salvia, L. Brandli, U. M. Azeiteiro, & R. Pretorius (Eds.), *Universities, Sustainability and Society: Supporting the Implementation of the Sustainable Development Goals. World Sustainability Series* (pp. 141–12).