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# Financial Sustainability as a Catalyst for SDG Implementation in Higher Education: Evidence from Tribhuvan University

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## Abstract

*This study examines the role of financial sustainability and public investment in embedding SDG 4.7 at Tribhuvan University, Nepal's largest public university. This study is grounded in a social constructivist paradigm, a qualitative multi-method design was employed, including semi-structured interviews with university leaders, systematic review of policy documents, and analysis of institutional budgets over a ten-year period. Findings indicate that despite formal alignment with SDGs and supportive national policies, reliance on recurrent government grants constrains curriculum reform, sustainability research, and education for sustainable development initiatives. Project-based and performance-linked funding partially addresses these limitations, yet fragmented financing and limited institutional autonomy hinder systematic integration. The study concludes that financial sustainability plays a decisive role in integrating SDG 4.7 within academic, governance, and sustainability practices. However, SDG 4.7 remains weakly embedded due to limited program-oriented public investment and a predominance of administrative spending, which constrains effective SDG policy integration at the institutional level. The study contributed the evidence-based guidance for policymakers, UGC, and national SDG planners. Furthermore, the study encourages future research on the role of public investment policy in shaping integrated university financial systems for sustainable higher education in Nepal.*

**Keywords:** Education for sustainable development, financial sustainability, higher education, public investment, sustainable development goal 4.7

## **Introduction**

Sustainable development, understood as an integrated framework for social, environmental, and economic advancement or more recently conceptualized as development for people, planet, and prosperity, has become increasingly critical for the global community. Although its foundations were articulated in the agenda 21 global action plan adopted in 1992, the adoption of the Sustainable Development Goals (SDGs) in 2015 marked a renewed and more coordinated global commitment to sustainability (United Nations, 2015). The SDGs represent a comprehensive and interdependent agenda intended to stimulate action over a 15-year period in areas of critical importance for humanity and the planet. Central to this agenda is the principle of “Leave No One Behind” (LNOB), emphasizing inclusive and equitable development across regions and populations. The research, de Jong, E. (2025), Provides a recent academic foundation for linking LNOB to development policy and monitoring framework. The united nation continues to explain transformative promise of the agenda 2030, emphasizing that development progress must be inclusive of all (United Nations Sustainable Development Group, 2023).

Higher education institutions (HEIs) are widely recognized as pivotal actors in achieving the SDGs. Franco et al. (2018) argue that HEIs play a “paramount” role and bear a social responsibility to foster sustainability-related competencies among students and within wider communities. Similarly, Leal Filho et al. (2019a) contend that universities have a moral duty to contribute to the societies in which they operate. Over the past several decades, HEIs have increasingly integrated sustainability into curricula, institutional management, campus operations, and community engagement initiatives (Leal Filho et al., 2019b). International agreements and initiatives have further consolidated the role of higher education in advancing sustainability. The Copernicus Charter and the Higher Education Sustainability Initiative (HESI), supported by hundreds of universities worldwide, underscore the responsibility of HEIs to promote sustainable development through teaching, research, campus greening, and community outreach (Decamps et al., 2017). Through interdisciplinary learning, innovation, public engagement, and capacity building, HEIs are uniquely positioned to shape future leaders and decision-makers capable of addressing complex sustainability challenges (Ferguson, 2019; Vaughter, 2018). As emphasized by the Association of Commonwealth Universities and the UN High-Level Political Forum on Sustainable Development, none of the 17 SDGs can be achieved without the meaningful contribution of higher education and research (O’Malley, 2019).

Despite this growing consensus, scholarly debates continue regarding the effective embedding of SDGs within higher education systems. Numerous studies have examined sustainability integration in HEIs, focusing on governance structures, institutional culture, teaching quality, research, technology transfer, and societal engagement (Aleixo et al., 2017b; Blanco-Portela et al., 2018; Giesen Bauer & Müller-Christ, 2020; Verhulst & Lambrechts, 2015). SDG 4, which aims to ensure inclusive and equitable quality education, highlights the need to integrate the economic, social, and environmental dimensions of sustainable development into higher education teaching and learning. Quality education, when aligned with sustainability principles, can generate improved development outcomes for individuals, communities, and nations, thereby contributing to poverty reduction and social inclusion (SDSN Australia/Pacific, 2017).

UNESCO (2017) identifies higher education as a cornerstone of the SDGs, particularly through SDG Target 4.7, which emphasizes education for sustainable development (ESD), global citizenship, human rights, gender equality, and a culture of peace. However, while global policy frameworks and institutional commitments are increasingly visible, evidence suggests that SDG implementation within universities remains fragmented and at an early stage (Leal Filho et al., 2019a; Lozano et al., 2015). Progress has been slow despite decades of policy advocacy and significant financial investment (Ross et al., 2011; Higgins, 2020).

In the context of Nepal, the challenges are particularly pronounced. The country has formally adopted the SDGs and incorporated them into its Fifteenth Five-Year Plan, national development strategies, and the University Grants Commission (UGC)-led higher education reform programs. These policy alignments provide a strong foundation for advancing Higher Education for Sustainable Development (HESD). Nevertheless, empirical studies indicate that HESD literacy among university leaders and stakeholders remains limited, and institutional strategies for embedding SDG 4.7 are often weak or absent. Adhikari & Shrestha. (2023) concludes that lack of financial capacity, Nepalese HEIs is failed to manage the consistent budget for embedding the concept SDG4.7, in other hand, the SDG concept is becoming extra fruit for the Universities.

Existing research further suggests that awareness of the SDGs among high-ranking university officials and key stakeholders in Nepal is uneven, despite the country's formal commitment to the global agenda (Adhikari & Shah, 2021). Discussions on higher education reform rarely link global sustainability goals to the core structures and functions of HEIs, such as curriculum design, governance, financing, and research priorities. These gaps are

exacerbated by broader development constraints. Least-developed countries such as Nepal continue to face challenges in establishing basic educational infrastructure and ensuring adequate resources for higher education, limiting their capacity to prioritize sustainability-oriented reforms.

This study is significant as it empirically examines how financial sustainability influences the implementation of the Sustainable Development Goals particularly SDG 4.7 within higher education, using Tribhuvan University as a case. By addressing research questions on the adequacy of financial resources, budgeting priorities, and leadership roles in embedding education for sustainable development, the study fills a critical evidence gap in Nepalese higher education research. The findings offer policy-relevant insights for public investment, the University Grants Commission, and national planners, supporting more effective alignment between financial governance, institutional sustainability, and SDG-oriented educational transformation.

Although Tribhuvan University has formally aligned with the SDGs, empirical evidence suggests that financial constraints significantly limit implementation. Insufficient and fragmented funding affects curriculum reform, sustainability-oriented research, and institutional initiatives, raising questions about the role of financial sustainability in translating SDG commitments into practice.

Despite Nepal's strong policy alignment with the SDGs, empirical research examines how higher education institutions operationalize sustainable development within governance and in particular, little is known about the role of executive leadership in translating national sustainability commitments into institutional strategies and budgeting frameworks. Therefore, this study aims to review the extent to public investment and financial sustainability within institutional policy frameworks. Specifically, it explores the perceptions, practices, and challenges faced by TU in implementing SDG 4.7. By doing so, the study contributes to the emerging literature on Higher Education for Sustainable Development in developing-country contexts and provides policy-relevant insights for higher education reform in Nepal.

Considering the financial policy framework and its explicit linkage to SDG 4.7 within the higher education financing system of Tribhuvan University, this study addresses the following research questions:

(1) How does financial sustainability influence the institutional integration of SDG 4.7 within academic programs, governance structures, and sustainability-oriented practices?

(2) What role does public investment play in enabling higher education institutions to embed SDG 4.7-aligned principles of Education for Sustainable Development?

Financial sustainability is widely recognized as a prerequisite for higher education institutions to fulfill their academic and societal missions (OECD, 2020). In public universities, particularly in developing countries, public investment plays a decisive role in shaping institutional capacity and long-term planning (Johnstone & Marcucci, 2010). At the same time, the integration of the Sustainable Development Goals within higher education requires institution-wide engagement across governance, teaching, research, and community outreach (Leal Filho et al., 2021).

This study aims to examine how financial sustainability and public investment influence the integration of SDG 4.7 at Tribhuvan University. Linking institutional financing to curriculum, governance, and system-wide practices, it provides empirical evidence on higher education for sustainable development in Nepal, offering insights for policy alignment and strengthening SDG implementation in resource-constrained contexts.

## **Review of Literature**

The adoption of the Sustainable Development Goals (SDGs) in 2015 marked a transformative shift in global development thinking by establishing an integrated framework addressing economic growth, social inclusion, and environmental sustainability (United Nations [UN], 2015). Unlike previous development agendas, the SDGs emphasize universality, interdependence, and long-term transformation, recognizing education as both a standalone objective and a cross-cutting enabler of sustainable development. SDG 4, which seeks to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, which is widely conceptualized in achieving the SDGs 2030 Agenda.

In the process of embedding SDGs, higher education institutions (HEIs) play a critical role due to their unique position in producing knowledge, shaping future leaders, and influencing public policy and societal values (UNESCO, 2017; SDSN, 2017). Franco et al. (2018) describe the role of universities in sustainable development as “paramount,” arguing that HEIs bear a social responsibility to equip learners with competencies necessary to address complex sustainability challenges. Similarly, Leal Filho et al. (2019a) emphasize that universities have a moral obligation to contribute to sustainable societies through education, research, and community engagement.

Through curriculum development, research innovation, and institutional practices, HEIs influence sustainability outcomes at multiple levels. Universities act as knowledge hubs, generate context-specific solutions, and serve as living laboratories for sustainability experimentation (Leal Filho et al., 2019b). Graduates, in turn, function as agents of change across economic, political, and social sectors. Consequently, higher education is increasingly conceptualized not merely as a beneficiary of development but as a strategic driver of sustainable transformation.

### **Theoretical underpinnings**

This study integrates sustainability, public finance, and higher education governance theories to examine SDG 4.7 integration. Financial Sustainability Theory explains how stable and strategically aligned resources enable long-term investment in Education for Sustainable Development (Johnstone, 2018). Resource Dependence and Public Financing Theory highlights how government and UGC funding shape institutional priorities (Salmi, 2017). ESD Theory emphasizes transformative, competency-based learning requiring sustained investment (Wals, 2014; UNESCO, 2017). Institutional Theory explains how national policies and financing frameworks influence university alignment with SDG 4.7 (Scott, 2014).

**Table 1:**

*Financial Sustainability Indicators for SDG 4.7 Integration*

SN	Measurement Indicators	Author(s)	Framework / Theory
1	Financial Arrangement and Budgets	Adhikari & Prakash, 2023	Financial Sustainability
2	Needs Assessment, Costing & Financing Strategy for SDGs	NPC, 2019; NPC, 2020	Financial Strategy
3	Funding for staff, capacity development, and research	IAU, 2023	Fund Management
4	Addressing resource-related challenges through public policies	Singh & Segatto, 2022	Resource Management
5	Multi-pronged TU financing approach (grants, fees, loans, endowments, sponsorships)	TU Vision, 2019	Adoption of Multi-pronged Financing

*Source: Summarize by the Author*

## Empirical review

SDG Target 4.7 calls for equipping learners with the knowledge, skills, values, and attitudes needed to promote sustainable development, including Education for Sustainable Development (ESD), global citizenship, human rights, gender equality, cultural diversity, and peace (UN, 2015). Indicator 4.7.1 operationalizes this target by assessing its integration into education policies, curricula, teacher education, and assessment systems (UNESCO, 2017). In higher education, ESD has emerged as a core pedagogical approach, emphasizing transformative, competency-based learning that fosters critical thinking, systems thinking, ethical reasoning, and civic engagement (Wals, 2014; Barth & Rieckmann, 2012). While HEIs have increasingly incorporated SDG-related content into curricula and research, implementation remains fragmented and often driven by individual champions rather than institutional strategies (Aleixo et al., 2018a; Lozano et al., 2015; Giesen Bauer & Müller-Christ, 2020). Regional disparities persist, with HEIs in developing countries facing institutional, governance, and financial constraints (Farinha et al., 2018). In Nepal, SDG commitments are embedded in national plans, notably the Fifteenth Plan (NPC, 2017; NPC, 2020), yet SDG 4.7 remains weakly operationalized in higher education due to the absence of explicit mandates, indicators, and financing incentives within education policies and UGC reforms.

Financial sustainability is increasingly recognized as a critical enabler of higher education for sustainable development. It refers not only to the adequacy of financial resources but also to the stability, predictability, and strategic alignment of funding with institutional priorities (Johnstone, 2018). Without financial sustainability, universities struggle to maintain academic quality, invest in innovation, and institutionalize sustainability-oriented initiatives.

Multiple studies demonstrate that the integration of SDGs in HEIs is closely linked to funding structures and resource allocation mechanisms (Aleixo et al., 2020; Farinha et al., 2018). Sustainable financing enables universities to redesign curricula, train faculty in ESD pedagogies, support interdisciplinary research, and expand community engagement activities. Conversely, financial instability often results in short-term project-based sustainability initiatives that lack institutional continuity.

UNESCO (2017) emphasizes that embedding SDG 4.7 requires sustained investment in curriculum development, teacher education, learning materials, and assessment systems. These investments are particularly critical in public universities, where dependence on government funding limits institutional autonomy. When funding is insufficient or unpredictable, sustainability initiatives are often deprioritized in favor of immediate operational needs.



Performance-based funding and results-based financing have been identified as mechanisms that can incentivize HEIs to align institutional outcomes with SDG priorities (Salmi, 2017). However, the literature cautions that such mechanisms must be carefully designed to avoid reinforcing inequalities between well-resourced and under-resourced institutions. Financial sustainability, therefore, is not merely a technical issue but a policy concern with implications for equity, access, and long-term development.

Public financing plays a central role in shaping the sustainability trajectories of higher education systems, particularly in countries where universities rely predominantly on government grants. National policies, budgetary allocations, and funding formulas influence institutional behavior and strategic priorities (SDSN, 2017). When public investment frameworks explicitly link higher education financing to SDG outcomes, universities are more likely to embed sustainability within their core functions.

The literature suggests that coherent policy alignment between national development plans and higher education financing is essential for effective SDG implementation (NPC, 2019; UNESCO IIEP, 2017). In contrast, fragmented or short-term funding undermines universities' capacity to institutionalize SDG 4.7 across curricula, research, and community engagement.

Global initiatives such as the Higher Education Sustainability Initiative (HESI) and the Copernicus Charter have reinforced the responsibility of HEIs to contribute to sustainable development through education, research, and campus operations (Decamps et al., 2017). However, participation in such initiatives often depends on financial capacity, highlighting the link between public investment and institutional engagement with global sustainability frameworks.

Nepal has formally committed to the Sustainable Development Goals through their integration into national policy frameworks, including the Fifteenth Five-Year Plan and sectoral education policies led by the Ministry of Education, Science and Technology and the National Planning Commission (NPC, 2019). Localization of SDG indicators and coordination mechanisms reflects strong policy-level alignment with the 2030 Agenda. However, empirical evidence indicates significant implementation gaps within higher education institutions. Studies report limited SDG awareness among senior university officials and weak integration of sustainability into academic planning and governance, largely due to inadequate Higher Education for Sustainable Development (HESD) literacy and strategic leadership (Adhikari & Shah, 2021; Adhikari & Shrestha, 2023).



Financial sustainability constitutes a critical constraint. Nepalese public universities depend heavily on government grants that are often insufficient, delayed, and weakly linked to sustainability outcomes. Although the Nurturing Excellence in Higher Education Program introduced results-based financing to promote equity, governance reform, and labor-market relevance, its contribution to SDG-oriented transformation remains underexplored and only indirectly aligned with SDG 4.7 or ESD metrics (Adhikari & Shah, 2020; Aryal, 2020).

International evidence underscores financial sustainability as a prerequisite for institutionalized SDG integration. Stable public investment and diversified financing enable curriculum reform, faculty development, sustainability research, and community engagement, whereas weak financial commitment results in fragmented initiatives (Aleixo et al., 2018; UNESCO, 2021; OECD, 2025; Sterling, 2014; Sahin, 2025). Nepal’s LDC graduation and alignment with the Doha Programmed of Action offer opportunities to reorient higher education financing toward SDG 4.7 outcomes. As the country’s largest public university, Tribhuvan University provides a critical case for examining how financial policies and public investment shape institutional SDG integration, an area where empirical evidence remains limited.

**Table 2**  
*Empirical Studies on Financing, Policy Alignment, and SDG 4.7 in Higher Education*

Author(s) & Year	Study Context	Research Design	Focus	Key Empirical Findings	Relevance to SDG 4.7
Salmi (2017)	Global HE systems	Qualitative analysis	Performance- based funding	Results-based financing can incentivize reforms	Relevant for SDG-linked funding policies
Aleixo et al. (2018a)	European public universities	Mixed methods	Sustainability governance, finance	Financial constraints hinder sustainability initiatives	Links funding stability to SDG implementation
Farinha et al. (2018)	Developing- country HEIs	Comparative case studies	Governance, financial capacity	Limited autonomy and weak funding restrict SDG adoption	Relevant to public universities in Nepal

Giesen Bauer & Müller- Christ (2020)	European HEIs	Qualitative interviews	Organizational learning	Long-term financial planning essential for SDG integration	Supports need for stable financing
Aleixo et al. (2020)	Public universities	Survey- based analysis	Funding mechanisms, SDGs	Financing structures shape institutional SDG engagement	Justifies focus on public investment
Adhikari & Shah (2021)	Nepalese universities	Qualitative interviews	SDG awareness, leadership	Limited SDG literacy among leaders constrains implementation	Explains weak SDG 4.7 operationalization
UNESCO (2021)	Global	Comparative analysis	ESD financing	Sustained public investment enables ESD	Confirms finance as prerequisite for SDG 4.7
Adhikari (2022)	Nepal (Tribhuvan University)	Qualitative case study	HESD concept, policy context	Absence of explicit mandates and financing undermines HESD	Contextualizes SDG 4.7 in Nepal
Adhikari & Shrestha (2023)	Nepalese HEIs	Multi- stakeholder qualitative study	Knowledge management, SDG 4.7	Weak KM systems limit stakeholder engagement and SDG integration	Positions KM as an enabler of SDG 4.7

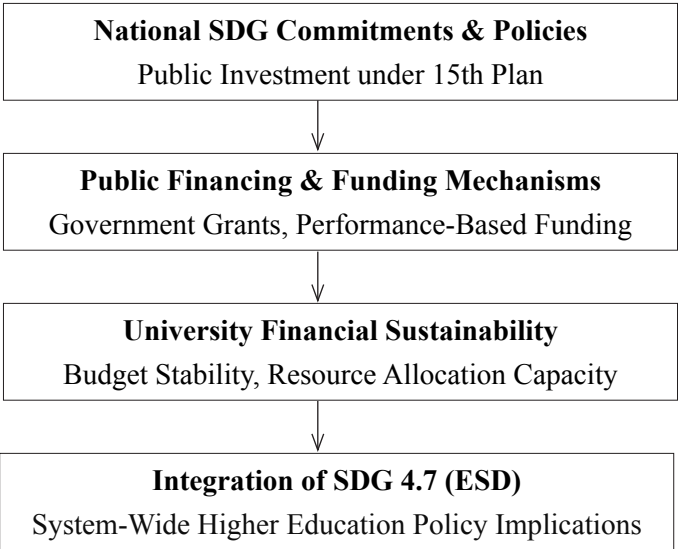
*Source: Summarize by the Author*

### **Conceptual framework**

Throughout the literature review, the study aims to examine the relationship between financial sustainability and the integration of SDG 4.7 within institutional sustainability frameworks, and to assess the role of public investment in supporting the implementation and institutionalization of SDG 4.7 aligned Education for Sustainable Development initiatives within higher education institutions following the conceptual framework.

**Figure 1**

*Conceptual framework*



This study positions financial sustainability as a foundational enabler of SDG 4.7 implementation in higher education, offering empirical insights from Nepal and contributing to global debates on sustainable higher education governance in developing countries. OECD (2025) discusses the *financial sustainability* of higher education institutions, defining it as the capacity to meet operational and long-term investment needs to deliver strategic goals and serve society. It also highlights that sustainable financing strategies are critical for universities to maintain quality education and support broader institutional objectives.

### **Research Gap and Contribution**

In Nepal’s higher education system, universities face persistent financial sustainability challenges stemming from limited public funding, weak long-term income streams, and inefficient expenditure frameworks (Adhikari & Shrestha, 2023). The absence of Higher Education for Sustainable Development (HESD) literacy and strategic leadership has constrained institutional advocacy for SDG 4.7 with government and funding agencies. Although national financial plans exist, HEIs often struggle to access and effectively utilize grants, resulting in unclear integration of SDGs within institutional strategies (Adhikari & Shah, 2021; Adhikari & Prakash, 2023). International literature further indicates that HESD research remains fragmented and context-dependent, particularly in non-Western settings

(Inkinen, 2016; Ma & Yu, 2010; Quarchioni et al., 2020; Hallinger & Chatpinyakoo, 2019). Nepal's Fifteenth Plan and Medium-Term Expenditure Framework incorporate SDG indicators, budgeting, and strategic financing mechanisms such as needs assessment and costing (NPC, 2019; NPC, 2020; IAU, 2023; Singh & Segatto, 2022). At the institutional level, Tribhuvan University employs a diversified financing model, including block grants, tuition adjustments, subsidies, research funding, endowments, and affiliation charges, aiming to enhance financial sustainability and embed SDG 4.7 within planning, governance, and academic programs (TU Vision, 2019).

### **Method of data collection and analysis**

This study is grounded in a social constructivist paradigm, consistent with Creswell's qualitative inquiry framework, which assumes that meaning is co-constructed through interaction and shaped by social, institutional, and policy contexts (Creswell, 2014). The research adopts a qualitative, multi-method design comprising archival analysis of policy and institutional documents, and semi-structured and unstructured interviews with key stakeholders. Data collection and analysis were conducted iteratively, with research questions guiding the selection and refinement of inquiry methods throughout the study.

This systematic review followed the PRISMA framework to identify and screen relevant studies. An initial set of keywords was generated through exploratory searches on financial sustainability on Sustainable Development Goals (SDGs) in higher education institutions (HEIs) with its domains; This study consists of four dimensions (Budgetary Arrangements, Fund Management, Cost Efficiencies, Income Incensement) as domains of financial sustainability, which are referenced from Adhikari and Shrestha (2023). Using the Scopus database, 50 systematic review articles were systematically identified and screened out of 500 retrieved articles, included "SDG4.7, "education for sustainable development" HEIs and financial sustainability.

Titles, abstracts, and keywords were screened to identify recurring terms and thematic patterns. These terms informed iterative keyword refinement, which was conducted through repeated searches in Scopus until irrelevant results were minimized and seminal studies consistently emerged. The finalized keywords are: "Budgetary Arrangement OR Financial Policy OR Cost Effectiveness OR Financial Strengthen OR Financial Empowerment OR Fund Management."

## Research Context

Nepalese higher education is complex, with multiple universities, yet Tribhuvan University (TU) accounts for over 80% of the student population, academic programs, and facilities (Bhusal, 2023). TU comprises 40 central departments, 62 constituent campuses, 1,052 affiliated campuses, four schools under five institutions, and four faculties. It manages 144 budgetary units and 181 cost units nationwide, promoting knowledge, research, and the development of competent human resources for Nepal's holistic progress (Bhusal, 2023). Research is facilitated through four research centers, a Research Directorate, and Research Management Cells across central departments and campuses. As a central university, TU aligns national plans and policies, playing a critical role in implementing SDG 4.7. Its mission focuses on promoting advanced learning, protecting and developing national culture, and engaging in empirical knowledge creation across arts, science, technology, and vocational disciplines (TU, IPRD, 2023).

TU's governance supports SDG 4.7 integration through four councils: the Executive Council executes Senate decisions, allocates grants, and appoints officials (7 members); the Academic Council oversees curricula, teaching, examinations, and research (50 members); the Research Coordination Council formulates research policies and coordinates university-level research (27 members); and the Planning Council advises on short- and long-term plans, annual programs, and program evaluation (29 members) (TU, IPRD, 2023). Collectively, these structures enable TU to foster a learning culture aligned with national and global education priorities.

## Research Design

This study majorly follows qualitative multi-method research design, complemented by a descriptive research approach. In Table 3 shows that data were collected from key executive leaders who possessed direct institutional knowledge and decision-making responsibilities relevant to the study. Clearly defined inclusion criteria were applied to ensure the relevance and adequacy of participants and to minimize potential sampling frame errors, thereby enhancing the rigor and credibility of the qualitative inquiry (Malhotra, 2019).

**Table No. 3***Sample Frame for the Study*

Research Methods	Sampling Frame
Semi-structured Interviews	Executive higher educational leaders,
Semi-structured Interviews	Division Chiefs
Systematic Review	Systematic reviews identified via Scopus database (n = 50)

*Source: Author's Own Work*

In this study, the researcher conducted a discursive and consultative dialogue with key executive leaders to purposefully identify participants who hold formal leadership positions under the Act and regulations of Tribhuvan University (TU, 2023). Interviews were largely unstructured and conversational, allowing flexibility for probing, clarification, and follow-up questions. This approach facilitated a nuanced understanding of executive leaders' conceptualizations and practices related to the research questions (Tribhuvan University, 2050). Sample size is determined not by numerical thresholds but by the principle of theoretical saturation. Data collection is considered complete when no new information emerges, analytic codes are fully developed, and relationships among categories are well established and validated (Strauss & Corbin, 1990). Although guided by descriptive–interpretive qualitative principles, Table 4 is presented the sample sizes, time commitment, and analytical depth required by the adopted research design.

**Table 4***Sample Size for Various Approaches to Data Collection*

Research Method		Size (N)	Total Hours/Units
Semi-structured	interview	4	3 hours
Academic Executive Leader			
Semi-structured	interview	2	2 hours
Administrative Division Chiefs			
Systematic Review		50 Systematic Reviews	
		Via Scopus Database with 5 Key Words	
Descriptive Analysis		10 Fiscal Years	

*Source: Author's Own Work*

Quantitative data were analyzed using statistical techniques, with descriptive tools employed to clean, summarize, and present the data, while mathematical procedures were applied to examine key components and relationships. Qualitative data analysis followed established interpretive practices. Interview transcripts and analytic memos were first reviewed to identify emerging ideas relevant to the research questions (Murphy, 2018). Verbatim excerpts

were then systematically coded and categorized by theme to enable deeper analysis (Cohen et al., 2000), is annexed.

Data were generated in compliance with established research ethics and safety standards. Informed consent was obtained from all participants through an information sheet outlining the study's objectives, procedures, and potential benefits, with participation remaining entirely voluntary. Participant anonymity was ensured through the use of pseudonyms. Interview transcripts were shared with participants for verification and amendment where necessary. The study adhered to approved ethical protocols throughout the research design, implementation, and monitoring phases. All data were securely stored on the university's official cloud platform, and confidentiality was maintained at all stages of data collection and reporting.

## **Results and Discussion**

This section includes the opinions of executive leaders and interviews at different phases. Interviews with university registrars, deans, and division chiefs were done to address the issue is raised by RQ1 and in Phase 2, financial data is reviewed to answer the second research question, RQ 2. Findings are reconciled with policy provisions to examine whether public investment is good enough to embed the goal.

### **National SDG Commitments & Policies on SDG 4.7**

The result of documents analysis (policy review) presents that Nepal has formally embedded the Sustainable Development Goals (SDGs), including SDG 4 targets, into its Fifteenth National Plan and related frameworks, signaling high-level policy commitment to inclusive and transformative education in line with the 2030 Agenda. The SDGs are assigned codes in the Medium-Term Expenditure Framework (MTEF), which guides annual budgeting and planning processes, thereby aligning national development strategies with SDG targets (NPC, 2019; NPC, 2020).

The major national level policies, plans and reports revealed that Nepal has embedded the SDGs, including SDG 4, into its Fifteenth National Plan and Medium-Term Expenditure Framework, aligning budgeting and development strategies with 2030 Agenda targets (NPC, 2019; NPC, 2020). The 2019 SDG 4 Education 2030 Nepal National Framework, developed with UNESCO, guides operationalization across all government levels, emphasizing education for sustainable development and global citizenship (4.7). While no standalone mandate exists, provisions in national policies, such as NEP 2020, promote value-based, inclusive, and multidisciplinary education, civic responsibility, human rights, and environmental awareness,



reflecting SDG 4.7 principles. Monitoring tools like 4.7.1 highlight gaps, and decentralized guidance ensures subnational alignment. Table 5 presents the SDG4.7 relevance provisions in policies.

**Table 5**

*National Policy Provisions for SDG 4.7*

Policy / Framework	SDG 4.7 Relevance
Fifteenth National Plan & MTEF (NPC)	“Mainstream SDG targets in planning and budgeting; includes SDG 4 but lacks explicit 4.7 operational details”. (The United Nations in Nepal)
SDG 4 National Framework (Education 2030 Nepal)	Defines strategic priorities for inclusive and transformative education, including peace, diversity, and citizenship concepts aligned with 4.7. (UNESCO)
National Education Policy 2020	Supports value-based, flexible education and lifelong learning that can advance ESD and citizenship education. (Public Administration Institute)
SDG Monitoring Tools (4.7.1 Indicator)	Mechanism to track mainstreaming of ESD and global citizenship, though current data gaps persist. (UNESCO UIS Download)

*Source: Author's Own Work*

Nepal's national education planning and frameworks conceptually acknowledge SDG 4.7 themes (sustainability, citizenship, diversity), but explicit mandates, operational guidelines, and financing incentives specifically dedicated to SDG 4.7 are limited.

Throughout the review process, it is found that the plan highlights mainstreaming Education for Sustainable Development (ESD), global citizenship, human rights, gender equality, and peace across curricula, teacher education, and assessment systems. While it provides a clear policy directive for embedding sustainability and citizenship principles, financing mechanisms and institutional-level implementation strategies remain underdeveloped, limiting transformative outcomes in higher education. Key policy provisions include:

- Fifteenth National Plan (NPC, 2019; NPC, 2020): “Mainstream SDG 4.7 principles in education, including global citizenship, sustainable development, human rights, gender equality, and peace, through national policies, curricula, teacher training, and assessment systems.”

- SDG 4 Education 2030 Nepal National Framework: “Target 4.7 aims to focus on mainstreaming global citizenship education and education for sustainable development in national education policies, curricula, teacher education, and student assessment.”
- SDG 4 Education 2030 Nepal National Framework: “Promote the culture of peace, civic awareness, sustainable behaviour, social harmony and shared values”
- SDG 4 Goals (UN Commitment adopted in Nepal): “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development through education for sustainable development global citizenship and appreciation of cultural diversity.”
- National SDG Status & Roadmap: “Target 4.7 education for sustainable development and global citizenship mainstreamed in policies, curricula, teacher education, and student assessment.”

### **Public Investment Provisions for HEIs in National Policy**

From the content-document analysis, it is explored towards public investment provision that although Nepal allocates a significant education budget, only 9 to 19% targets higher education, historically low compared to its neighbors. Public financing primarily covers recurrent and administrative costs, with limited emphasis on strategic investments like SDG 4.7 integration. The University Grants Commission (UGC) channels government grants for operational and developmental purposes, provides scholarships and research funding, and formulates grant policies. The Nurturing Excellence in Higher Education Program (NEHEP, 2021–2026) offers results-based, performance, and equity grants, alongside capacity-building support. Additional block grants and subsidies through the Ministry of Education and UGC, plus federal and provincial transfers, form Nepal’s public investment framework, yet explicit SDG-focused funding remains limited. The table below presented that the public investment mechanism to tie up HEIs.

**Table 6**

#### *Public Investment Provisions for HEIs in National Policy*

Policy / Program	Public Investment Provision
University Grants Commission Act (1993)	“Government grants for universities/HEIs scholarships and research support”
UGC Grant Allocation Mechanisms	“Block grants, formula-based, and performance-based funding to HEIs via UGC”

National Higher Education Program (2021–2026)	“Results-based financing to improve governance” access, equity, and digitalization”
Federal Budget Allocations	“Public subsidies channeled through MOEST and UGC to HEIs”

*Source: Author’s Own Work*

The provision for public investment present that Nepal’s public investment in higher education via the University Grants Commission, block and performance-based grants, the National Higher Education Program (2021–2026), and federal budget allocations- supports general institutional development, governance, and equity. However, no provisions explicitly earmark funding for SDG 4.7 integration, ESD curriculum reform, or sustainability-focused capacity building. And digitalization grant ensured the governance system of TU.

### **The Conceptualization Role of Leaders for Financial Sustainability**

In the case of analyzing thematic concentration about executive leaders regarding public investment policies 3 board thematic open-ended question were asked in in-depth interviews. During the interview, background is discussed and connected the result of documents analysis. The perception of Deans, Director of Planning Directorate and Financial Chief of TU to get the condition of Financial Sustainability in TU. The opinions of these officials are mentioned below.

**Table 7**

*Opinion of TU Leaders on Plan to Manage the Funds/ Budget for HSED*

University leaders	Statements
Dean_1	“However, despite the availability of grants, there seems to be a lack of sufficient proposals. For instance, at the Institute of Science and Technology, while there were nine collaborative grants available worth 30 lakhs, only seven applicants emerged. Furthermore, three of these applicants were eliminated in the initial screening process. It shows that we can plan and manage the fund and budget for HSED, and only the things that require leaders and concerns are addressed.”
Dean_2	“I have plans for financial resources; however, we received the grant only for Salary and other liabilities of employees, so fund management becomes a crucial part for TU institutions.”
Planning-Director	“To some extent, and looking for more support from the government.”

Chief	“Financial Sustainability largely depends on how the university manages its sources. Every program and activity must be planned to ensure the financial source.” TU has research, campus development, endowment, scholarship, and other funds.”
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*Source: Opinions of HEIs’ Leaders*

Table 7 indicates that Tribhuvan University’s difficulty in securing adequate funds for routine operations reflects a core challenge highlighted in financial sustainability theory which emphasizes revenue adequacy, diversification, and strategic resource alignment as prerequisites for long-term institutional viability (Johnstone, 2018; OECD, 2020). Overdependence on single-source public financing, TU remains largely dependent on government grants. The Financial Division’s observation that SDG-related projects attract funding when linked to clearly identified financial sources underscores the importance of project-based and earmarked financing.

### University Financial Sustainability Strategy

Regarding the next questions, in this context, the university’s financial strategy and fund management the following table presents the perceptions of key policy initiators and their role in supporting the implementation of SDG 4.7 at Tribhuvan University.

**Table 8**

*Opinion of TU Leaders on Strategy for Financial Sustainability for HSED*

University leaders	Statements
Dean_1	<p>“Nepal Government made a MoU with the World Bank for the Nurturing Excellence in Higher Education Program (NEHEP) in line with implementing SDG. In some frameworks/approaches is deemed inefficient and a misallocation of resources; thus, public fund investment should be in alignment with universities’ needs. Following Internal strategies may work to support to some extent</p> <ol style="list-style-type: none"><li>1. Fee Increment strategy (Existing and new Program Launch)</li><li>2. Endowment Fund Increment Strategy</li><li>3. Generate Fund strategy (Explore collaborative research /programs to attract funds from international and national organizations.)”</li></ol> <p>Additionally, a partnering strategy might promote the financial sustainability of TU, as we have many examples for it.”</p>

Dean_2	<p>“Public Investment is highly expected for this initiative however, following internal strategies is working to some extent;</p> <ol style="list-style-type: none"><li>1. Fee Increment strategy (Existing and new Program Launch)</li><li>2. Endowment Fund Increment Strategy</li><li>3. Generate Fund strategy (Explore collaborative research /programs to attract funds from international and national organizations.)”</li></ol>
Director	<p>“For SDG4.7, the government has a responsibility to invest in it; however, following the internal strategy will slightly work for Financial Sustainability;</p> <ol style="list-style-type: none"><li>1. Generate Fund strategy (Explore collaborative research /programs to attract funds from international and national organizations.):</li><li>2. Endowment Fund Mobilizing /Increment strategy:</li><li>3. Fee Increment strategy (Existing and new Program Launch)</li></ol>
Chief	<p>“We can enrich our funds and income by mobilizing the following (without interfering with the regular education program)</p> <p>Generate Fund strategy (Explore collaborative research /programs to attract funds from international and national organizations.):</p> <p>Endowment Fund Mobilizing /Increment strategy:</p> <p>Generate Fund strategy (through its physical resources that are not in use at present, may be leasing); we can align with industries with an MoU ie we can even establish a hotel for practicing and employing our students. Additionally, we can approach the Government for the public fund, as it is a national priority issue, with precise proposals and plans.”</p>

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*Source: Opinions of HEIs' Leaders*

TU officials emphasized the importance of public investment, particularly for the SDG program, which requires additional resources. To ensure financial sustainability, they propose seeking government support and adopting internal strategies: generating funds through collaborative programs, increasing endowment funds, and raising fees for existing and new programs. Public investment is prioritized.

### **Conceptualization the integration of SDG4.7**

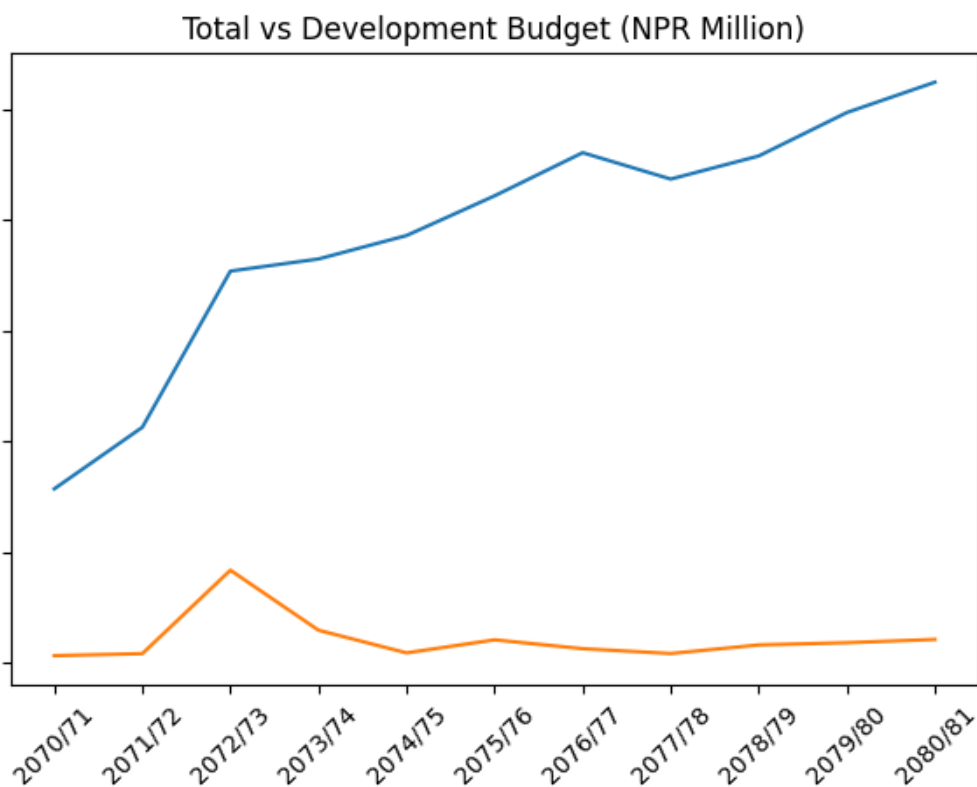
The study examines the university's budget, public investment pattern and financial condition over a ten years period from fiscal year 2070/071 to 2080/081, using SDG4.7 indicators as the analytical framework. The analysis described that the National Planning Commission has

estimated a total of NRs 306bn (US\$2.87bn) during 2016–2030 for achieving the SDGs in line with the targets (NPC, 2018). The budget trend in the past shows that the total budget allocated for HEIs by the government is about 1% of the national budget, which ranges between NRs 11–14bn per annum. On that basis, Nepalese HEIs require approximately NRs 22.8bn (US\$0.21bn) per annum to achieve SDG 4 (Adhikari & Shah, 2021). Tribhuvan University has very limited resources and is promoting the concept of SD, both in the sense of research and innovation and the transfer of technology and knowledge.

The Financial status for the integration of SDG4.7 in TU for the 10 years is presented in the following graphs

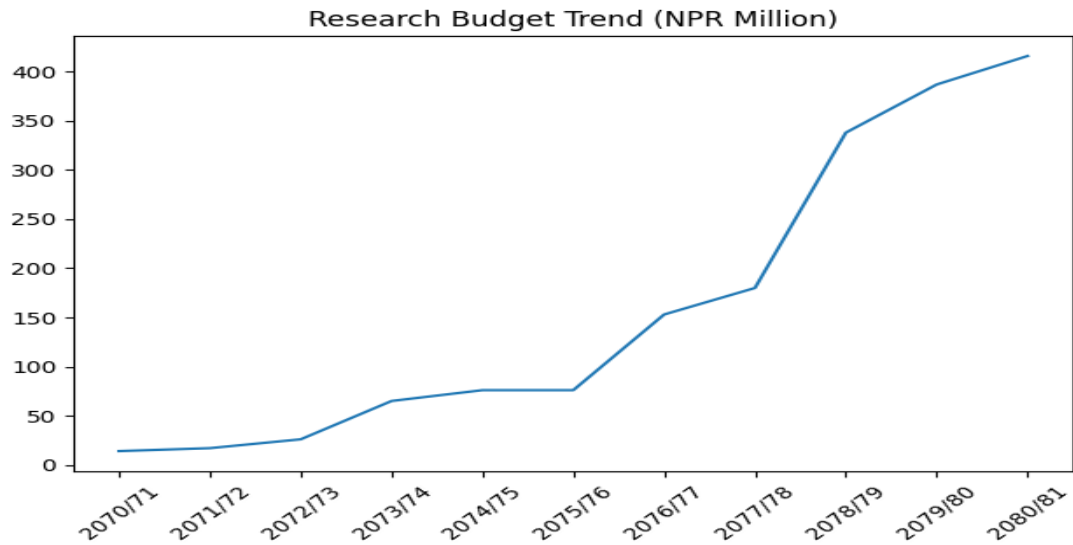
**Figure 2**

*The Weight of Development Budget on Total Budget*



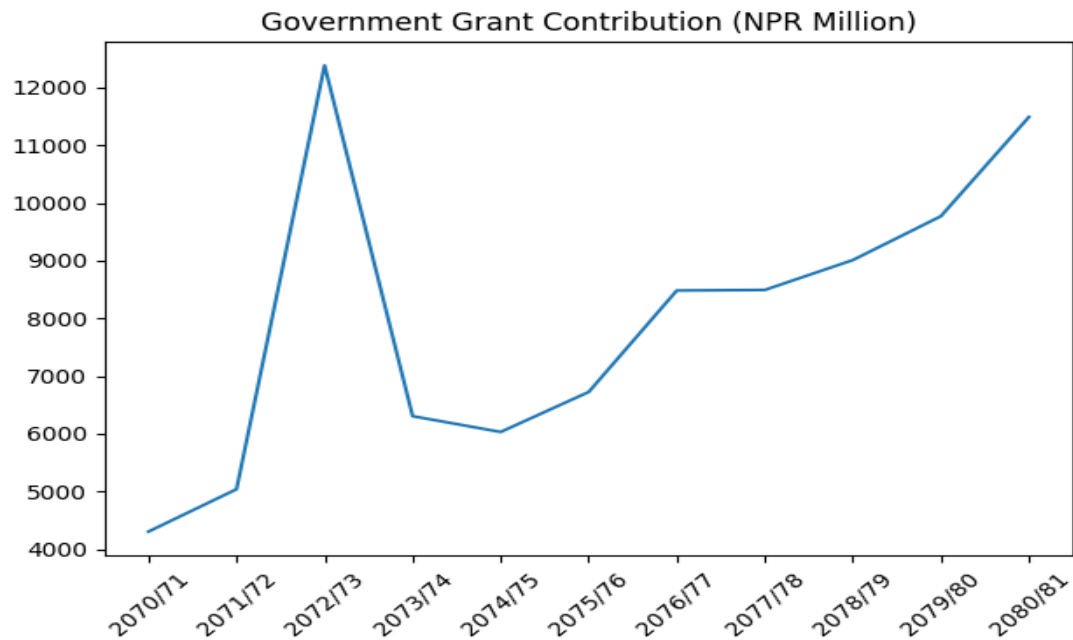
**Figure 3**

*Research Budget Trend*



**Figure 4**

*Government Grant Contribution*





The budgetary analysis of Tribhuvan University over the period FY 2070/71 to 2080/81 reveals structural constraints affecting the institutionalization of SDG 4.7. Although TU's total budget increased more than threefold over the decade, expenditure remains heavily skewed toward recurrent and operating costs. Development expenditure, critical for curriculum transformation, faculty development, and sustainability-oriented innovations, consistently accounts for less than 5% of total spending, except for FY 2072/73.

The findings of this study demonstrate that financial sustainability operates as a catalytic condition for the effective implementation of SDG 4.7 within higher education institutions, rather than as a peripheral administrative concern. Consistent with sustainability finance theory, the analysis shows that persistent dependence on recurrent government grants constrains Tribhuvan University's (TU) ability to invest strategically in curriculum innovation, research, and community engagement aligned with Education for Sustainable Development (ESD) (OECD, 2021; Salmi, 2018).

**Table 9**

*Results–Discussion Linkage on SDG 4.7 Financing in Nepalese Higher Education\**

Empirical Result	Evidence Source	Analytical Interpretation (Discussion)	Policy / SDG 4.7 Implication
Higher education receives a limited share of the education budget (9–19%).	National budget reports; NPC planning documents	Despite strong SDG commitments, fiscal prioritization of higher education remains low, constraining transformative learning investments.	Limits HEIs' capacity to mainstream SDG 4.7 through curriculum reform and sustainability programs.
Over 90% of HEI funding is allocated to recurrent expenditure.	TU financial records; interview with Chief of Finance Division	Developmental and innovation-oriented activities receive minimal funding, marginalizing SDG-related initiatives.	SDG 4.7 implementation remains peripheral and project-based.
TU struggles to finance regular operations.	Interview evidence (Financial Division, TU)	Structural underfunding reduces institutional flexibility for SDG-oriented innovation.	Highlights the need for earmarked SDG-linked grants.

SDG projects are feasible when funding sources are identified early.	Executive leader interviews	Financial constraints are procedural rather than absolute; planning and alignment matter.	Strengthening proposal design and SDG-budget alignment can enhance implementation.
NEHEP introduces performance-based financing but lacks SDG indicators.	NEHEP policy documents (2021–2026)	Results-based funding prioritizes governance and quality, not sustainability, and learning outcomes.	Missed opportunity to incentivize SDG 4.7 integration in HEIs.

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*Source: Elaborate by the author*

The findings of this study stated that financial sustainability strongly influence the institutional integration of SDG 4.7 within academic programs, governance structures, and sustainability-oriented practices. Hence SDG4.7 yet to be embedded effectively accordance with the national commitment. Similarly public investment is most of expected source for incorporation the them of SDG4.7. The data demonstrates that the indicators of SDG4.7 are yet to properly embedded in budget and program because the trend of public investment is on administrative budget rather to allocate program-oriented budget. Even, by the university, weak in financial sustainability, it remains unable to integrated SDG policy.

The disproportionately low share of development and research expenditure observed across the study period mirrors international evidence that SDG integration in universities remains symbolic when not backed by targeted financial commitments (Leal Filho et al., 2019a; Blanco-Portela et al., 2018). UNESCO (2017) emphasizes that SDG 4.7 requires systemic investment in curriculum reform, faculty development, and participatory pedagogies, areas that are highly sensitive to fiscal flexibility. The negligible allocation to curriculum development at TU after FY 2071/72 reflects a broader policy–practice gap frequently reported in developing-country HEIs (Tilbury, 2011; Aleixo et al., 2020).

Furthermore, the gradual increase in research funding, although positive, remains insufficient to support interdisciplinary sustainability research capable of generating transformative learning outcomes. Prior studies argue that research-led ESD is essential for embedding global citizenship, human rights, and sustainability values across disciplines, yet such integration depends heavily on predictable and diversified funding streams (Sterling, 2014; Ramos et al., 2015). The findings therefore support Leal Filho et al.'s (2019b) assertion that

universities cannot fulfill their moral and social responsibility toward sustainable development without structural financial reforms.

From a policy perspective, the study aligns with Nepal's Fifteenth Plan and the University Grants Commission's reform agenda, which recognize higher education as a strategic driver of the SDGs (NPC, 2019; UGC, 2020). However, the limited fiscal autonomy observed at TU suggests that national SDG commitments have not yet translated into institution-level budgetary prioritization of SDG 4.7, echoing concerns raised by Adhikari and Shrestha (2023) regarding weak HESD literacy and leadership advocacy.

## Conclusion

This study concludes that financial sustainability is a decisive enabler of SDG 4.7 implementation in higher education, rather than a contextual background variable. Evidence from Tribhuvan University indicates that constrained development and research financing significantly limit the institutionalization of Education for Sustainable Development, despite strong national policy commitments to the SDGs.

The findings reinforce that SDG 4.7 cannot be operationalized through policy rhetoric alone, but requires deliberate financial alignment, diversified funding mechanisms, and integration of sustainability priorities into core budgeting processes (UNESCO, 2020; OECD, 2021). For Nepal, strengthening endowment governance, expanding project-based public and donor financing, and embedding SDG 4.7 indicators into higher education quality assurance frameworks are critical steps toward sustainable transformation. One of executive leaders expressed the view regarding financial sustainability;

“For SDG4.7, government has responsibility to invest on it, however following internal strategy will slightly work for Financial Sustainability;

1. Generate Fund strategy (Explore collaborative research /programs to attract funds from international and national organizations.);
2. Endowment Fund Mobilizing /Increment strategy;
3. Fee Increment strategy (Existing and new Program Launch)”

By empirically linking financial sustainability to SDG 4.7 outcomes, this study contributes to the emerging Higher Education for Sustainable Development (HESD) literature and provides evidence-based guidance for policymakers, university leaders, and development partners seeking to advance sustainable, inclusive, and globally responsible higher education systems.

Tribhuvan University must transition from a grant-dependent financing model to a diversified, SDG-aligned financial strategy. Institutionalizing SDG 4.7 within budgeting frameworks, strengthening endowment governance, and prioritizing project-based public and donor financing are essential to ensure sustainable implementation of Education for Sustainable Development.

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