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MEASURING IMPACT: ASSESSING SDG PROGRESS IN HIGHER EDUCATION INSTITUTIONS

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Abstract
Assessment and monitoring are critical to evaluating how effectively HEIs contribute to the SDGs. This paper presents a framework for measuring progress in areas such as teaching, research, governance, and outreach. It examines existing tools and indicators, including sustainability rankings, impact reporting, and accreditation models. The study emphasizes the need for transparent, data-driven approaches to demonstrate accountability and encourage continuous improvement. Findings reveal that integrating SDG metrics strengthens institutional reputation and enhances societal contributions of higher education.

Keywords: Sustainable Development Goals (SDGs), Higher Education Institutions (HEIs), Impact Assessment, Monitoring and Evaluation, Institutional Governance, Teaching and Research.

Introduction

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) place strong emphasis on the role of education in shaping sustainable societies. Higher education institutions (HEIs) are uniquely positioned to contribute to sustainable development through teaching and learning, research and innovation, campus operations, and community outreach. They not only educate future global citizens but also act as knowledge hubs, drivers of innovation, and anchors in their local communities.

However, while many universities and colleges have pledged to integrate sustainability and the SDGs into their mission, operational sing and measuring these contributions is still evolving. Key questions emerge: How can HEIs monitor and assess their progress towards the SDGs? What indicators and tools exist? What are the limitations? This paper aims to answer these questions by reviewing the state of the art and offering guidance for HEIs to strengthen their measurement of SDG impact.

The Role of HEIs in SDG Achievement

Table 1 – Mapping HEI Functions to SDG Contributions

HEI Function	Relevant SDGs	Example Contributions
Education and Learning	SDG 4, SDG 5, SDG 10	Integrating sustainability courses, promoting equity in access
Research and Innovation	SDG 7, SDG 9, SDG 13	Renewable energy research, green technology innovation
Operations and Stewardship	SDG 6, SDG 12, SDG 13	Waste reduction, sustainable campus design
Outreach and Partnerships	SDG 1, SDG 3, SDG 17	Community health programs, SDG-oriented partnerships
Governance and Culture	SDG 16	Transparent governance, ethical policy-making

HEIs can contribute to SDG achievement in multiple ways:

1. **Education and learning**: By embedding sustainability and SDG themes in curricula, developing competencies in students, and promoting lifelong learning. For example, SDG 4 (Quality Education) directly references tertiary education access in target 4.3.
2. **Research and innovation**: Through knowledge generation, interdisciplinary research related to the SDGs, collaboration with external stakeholders, and translating findings into societal impact.
3. **Operations and campus stewardship**: By modelling sustainable practices (energy, water, waste, transport, building design) and reducing the institution's ecological footprint.
4. **Outreach, engagement and partnerships**: Engaging with communities, governments, industry and civil society, contributing to policy, social innovation and partnerships (SDG 17).
5. **Institutional governance and culture**: Aligning institutional strategy, governance, and culture with sustainability values and the SDGs.

Empirical evidence suggests that HEIs' contributions are positively associated with national SDG progress: for instance, one study finds a directly proportional correlation between a university's score in the Times Higher Education (THE) Impact Rankings and national SDG achievement This underlines the relevance of measuring institutional SDG-aligned impact not only for the HEI itself but also for the broader societal role.

Conceptualising Impact and Progress in HEIs

To measure SDG progress in HEIs, we first need clarity on what is meant by "progress" and "impact".

1. **Progress** refers to the extent to which an institution is aligning with and advancing SDG-related goals (internal and external).
2. **Impact** refers specifically to effects beyond the institution's boundaries — the influence an HEI has on society, economy, and environment, via its education, research, outreach, and operations. For HEIs, the distinction between performance (what the institution does) and impact (what difference it makes) is critical. As one study states: "the vast majority of the analysed SATs (sustainability assessment tools) have a strong focus on assessing SD performance in the core element campus operations. Only a small percentage of indicators assess impacts on SD occurring outside the immediate organisation." Hence, a robust measurement framework for HEIs should consider multiple dimensions: internal processes and practices, external outcomes and impacts, direct and indirect effects, and short-term and long-term horizons.

Direct vs Indirect Effects: Direct impacts are immediate and attributable (e.g., number of graduates involved in sustainability projects). Indirect impacts are longer-term, systemic and harder to attribute (e.g., alumni behaviour change, community transformation) — very few existing tools capture indirect impacts.

Internal vs External Boundaries: Many tools focus on what the institution controls (internal) rather than what results externally. But the mission of HEIs in SDG terms emphasises external societal contribution.

Multi-dimensional domains: Education, research, outreach, operations and governance must all be considered, across social, economic and environmental dimensions.

Existing Tools, Indicators and Metrics

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A number of frameworks, rankings, and assessment tools have emerged for HEIs to measure SDG-related contributions. Key among them:

Sustainability Assessment Tools (SATs)

For example, the study by Findler et al. (2019) examined 19 SATs with 1,134 indicators, and found that only 4.14% of indicators aimed at actual impacts beyond organisational boundaries; 83% of those were proxy indicators (i.e., indirect measures) rather than direct outcome measures. The core elements most covered were campus operations (34.48%), institutional framework (20.90%), education (16.04%), while elements like campus experiences and assessment & reporting were much less represented.

Programmes Assessment

For example, Kioupi & Voulvoulis (2020) developed an assessment framework to evaluate higher-education programmes' learning outcomes in alignment with SDGs across eight sustainability attributes (e.g., Safe Operating Space, Just Operating Space, Health & Wellbeing, Diversity & Inclusion). They applied it to master's programmes and found even environmental programmes had gaps in some sustainability attributes.

Rankings and Reporting

Ranking mechanisms such as THE's Impact Rankings evaluate universities' contribution to the SDGs. The THE Impact Rankings 2023 for SDG 4 (Quality Education) cover over 1,300 universities across 109 countries. Times Higher Education (THE)+1 In a methodological note, THE's SDG Impact Dashboard offers data on 220 indicators and 105 metrics for benchmarking HEIs. Times Higher Education (THE).

Methodological Guides

There are practical guides, such as the methodological guide produced under the "Universities for Sustainable Development" project, which outlines phases such as defining current impact, diagnosis, implementing improvements, and continuous monitoring.

Strengths and Gaps of Current Practice

Strengths

1. Growing awareness among HEIs of sustainability and SDG alignment; increasing number of publications on HEIs and SDGs.

2. Better availability of data and benchmarks through tools/rankings like THE Impact Rankings.
3. Multi-dimensional frameworks that link learning outcomes, research, operations and outreach.
4. Practical guides enabling institutions to initiate self-diagnosis and monitoring.

Gaps and Challenges

1. Over-emphasis on internal metrics (campus operations) rather than external impacts. For instance, Findler et al. found only a small share of indicators capturing external impact; many focus on proxy measures.
2. Difficulty in measuring indirect or long-term impacts, especially behaviour change, societal transformation, cultural effects.
3. Limited geographic representation: many studies focus on European HEIs; fewer in developing country contexts.
4. Fragmentation of metrics and lack of standardisation: different frameworks use different indicators, making comparability difficult.
5. Attribution and causality issues: linking institutional activity to broad SDG outcomes (e.g., SDG 11 Sustainable Cities) is complex.
6. Data-intensive processes and capacity constraints: smaller or resource-limited institutions may struggle.
7. Risk of "box-ticking" or superficial reporting rather than meaningful integration of SDGs into institutional strategy.

A Framework for Assessing SDG Progress in HEIs

Figure 1 – Conceptual Framework for Assessing SDG Progress in HEIs

Suggested Visual Elements

1. Four stages in a circular or stepwise model:
   1. Strategy & Alignment → 2. Metrics & Indicators → 3. Monitoring & Reporting → 4. Improvement & Governance
2. Arrows showing the feedback loop between "Monitoring" and "Improvement."
3. Outer ring showing stakeholder engagement (students, faculty, community, policymakers).

Based on the literature review and existing best practices, I propose the following framework for HEIs to assess SDG progress. It is structured in four stages: **Strategy & Alignment**, **Metrics & Indicators**, **Monitoring & Reporting**, and **Improvement & Governance**.

Stage 1: Strategy & Alignment

1. Embed SDG alignment into institutional vision, mission, strategic plan and governance.
2. Conduct stakeholder mapping (students, faculty, community, industry, government) and identify key SDGs relevant for the institution.
3. Define priority SDGs where the institution expects to make strongest contributions (e.g., as a research-intensive university may prioritise SDG 9 Industry, Innovation & Infrastructure; as a teaching-focused institution may focus on SDG 4 Quality Education).
4. Develop a logic model or theory of change: articulate how institutional activities (inputs/processes) lead to intermediate outputs (graduates, research outputs, partnerships) and ultimately to SDG-related outcomes/impacts (community wellbeing, ecological resilience, equity).

Stage 2: Metrics & Indicators

1. Choose metrics across the core institutional dimensions: Education/Teaching, Research/Innovation, Operations/Stewardship, Outreach/Engagement, Governance & Culture.
2. For each dimension, identify:
    a. **Performance indicators** (internal processes, e.g., number of sustainability-rich courses offered, percent of campuses powered by renewables)
    b. **Impact indicators** (external outcomes, e.g., number of alumni employed in sustainable sectors; research translated into policy; community carbon-reduction outcomes).
3. Use both **direct indicators** (e.g., number of partnerships for SDG 17) and **proxy indicators** (e.g., campus energy intensity as proxy for SDG 13).
4. Ensure indicators cover social, economic and environmental domains.
5. Where possible, align institutional metrics with external benchmarking tools (e.g., THE Impact Rankings, global SDG reporting frameworks) yet adapt to local context.
6. Set targets and baselines for each indicator; define data collection methods and frequency.

Stage 3: Monitoring & Reporting

1. Establish a data-collection system, ideally embedded in institutional data infrastructure (e.g., student information systems, research management systems, facilities management).
2. Use dashboards or analytics tools to visualise progress and trends (for example, THE's SDG Impact Dashboard is a model). Times Higher Education (THE)
3. Embed internal review cycles (annual or biennial) and external benchmarking (peer comparison, ranking performance).
4. Disclose results publicly (via sustainability reports or institutional websites) to enhance accountability and transparency.
5. Use narrative case studies to complement quantitative metrics, especially for capturing indirect or long-term impacts.

Stage 4: Improvement & Governance

1. Use monitoring results to inform strategy: identify areas of weak performance, set action plans, allocate resources.
2. Ensure governance structures (e.g., sustainability committee, senior leadership oversight) to steer SDG alignment and measurement.
3. Promote capacity building of staff and faculty in sustainability and SDG literacy.
4. Embed continuous improvement culture: review and update metrics, data-collection methods, targets.
5. Foster collaboration and partnerships (SDG 17) with other institutions/communities to amplify impact.

Illustrative Application and Considerations

Table 3 – Illustrative Indicator Set for SDG 4 and SDG 13

Dimension	Indicator	Type	Measurement Frequency	Data Source
Education	% of courses embedding sustainability	Performance	Annual	Curriculum database
Research	Number of climate-related publications	Performance	Annual	Scopus/Institutional Repository

Operations	Carbon emissions per student (kg CO_2 eq.)	Impact	Annual	Facilities Dept.
Outreach	Community climate-awareness programs conducted	Impact	Biannual	Extension Department
Governance	SDG monitoring committee meetings held	Process	Quarterly	Institutional reports

To illustrate, consider an HEI in India (for example) seeking to assess its contribution to SDG 4 (Quality Education) and SDG 13 (Climate Action).

1. **Strategy**: The institution decides to prioritise SDG 4 and SDG 13, embeds them into its strategic plan.
2. **Metrics**: For SDG 4: Number of sustainability-embedded courses; percentage of graduates demonstrating sustainability competencies; student access/retention data; community education programmes. For SDG 13: Campus carbon emissions per student; number of climate-related research projects; community outreach on climate resilience.
3. **Monitoring**: Collect data annually, compare to baseline, benchmark against peer institutions (perhaps via THE Impact Ranking for SDG 4 and other local tools).
4. **Improvement**: Identify low performing area (e.g., few graduates working in climate-resilient sectors) and implement curricular reforms or industry partnerships.
   Some caveats and considerations:
5. Attribution: Recognising that many outcomes (e.g., student behaviour, community resilience) are influenced by multiple factors beyond the institution.
6. Data quality and availability: Smaller institutions or those in resource-constrained settings may struggle to capture external impact data.
7. Balance between local relevance and global benchmarking: Institutions must adapt to their own mission and context rather than simply chasing ranking metrics.
8. Time horizons: Some impacts (behaviour change, societal transformation) may manifest over decades, so institutions must adopt long-term perspectives.
9. Cultural and regional contextualisation: What constitutes relevant SDGs or indicators may differ across countries and institutional types. For example, a recent study shows fewer contributions in developing countries in some SDG-HEI literature.

Discussion

Implementing robust SDG progress assessment in HEIs presents both opportunity and challenge. On the one hand, it enables institutions to demonstrate societal relevance, embed sustainability institutional-wide, attract stakeholders (students, funders), and contribute to global goals. On the other hand, measurement can become burdensome, overly technocratic, or skewed toward internal operations (campus greening) rather than genuine external societal impact — a pitfall identified in literature.

For policy and institutional leadership, the imperative is to shift from “we did x courses, we recycled y tonnes of waste” to “what difference did we make in society, environment, economy”. This requires stronger indicators of external impact, better governance, strategic alignment, and longitudinal data. As one review concluded: “while HEIs have increasingly been incorporating SD, their efforts have tended to be compartmentalised and focused on internal operations… it is becoming increasingly

imperative that HEIs take a more holistic perspective addressing their system elements and their impacts."

Moreover, the potential correlation between HEI SDG performance and national SDG progress suggests the institutional contributions may have broader systemic significance. For example, Smolennikov et al. (2024) found that a one-unit increase in an HEI's THE Impact Ranking score corresponded to a ~0.2-0.3 unit increase in national SDG progress for SDGs 3, 8, 11 and 16. This underlines the strategic importance of HEI measurement frameworks not only for institutional accountability, but for national development.

Nonetheless, significant gaps remain in data, comparability, standardisation, and capturing long-term indirect impacts. Future research should explore better ways to measure alumni contributions, community transformation, policy influence, and cultural change. Additionally, capacity-building and knowledge sharing across regions (especially in developing countries) is essential.

Implications for Practice

For practitioners in HEIs (senior leadership, sustainability officers, quality assurance cells, etc.), the following practical implications emerge:

1. Ensure SDG alignment is integral to institutional strategy and not an add-on.
2. Develop a balanced set of metrics that include both internal performance and external impact.
3. Build or leverage data infrastructure (student systems, research management, facilities, outreach) to support measurement.
4. Report publicly and transparently, embedding narrative explanations of impact, not just numbers.
5. Engage stakeholders (students, faculty, community partners) in defining what SDG relevance means locally.
6. Use benchmarking tools (such as the THE SDG Impact Dashboard) for peer-comparison but adapt to local context.
7. Use measurement results as a feedback loop into institutional continuous improvement: what is working, what is not, where to allocate resources.
8. Recognise that meaningful impact may require long timeframes and cultural shift — set realistic targets and track progress over time.

Limitations and Future Directions

This study is primarily conceptual and relies on secondary data and published frameworks. Future research should test the proposed framework empirically across diverse HEIs, including those in developing countries, to validate indicator reliability and impact pathways. Longitudinal studies are needed to trace indirect effects such as alumni engagement, social innovation, and cultural transformation.

Conclusion

Measuring the impact of HEIs on the SDGs is increasingly important — for institutional credibility, societal accountability, and alignment with global development imperatives. While many HEIs have begun the journey, the evidence suggests that measurement remains heavily weighted toward internal performance rather than external societal impact. To advance, institutions must adopt more holistic frameworks, develop stronger indicators of impact, embed SDG alignment in strategy and governance, and build data systems for monitoring and continuous improvement. By doing so, they will not only demonstrate what they do, but more importantly, the difference they make — which is the real essence of SDG progress.

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