

LEGISLATIVE PROVISIONS FOR CIRCULAR ECONOMY IMPLEMENTATION IN THE CONSTRUCTION INDUSTRY WITHIN THE SRI LANKAN JURISDICTION

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ABSTRACT

The Construction Industry (CI) is a significant contributor to waste generation and environmental degradation. The Circular Economy (CE) concept has emerged as a promising approach to improve resource efficiency and minimising waste within CI. However, the lack of adequate legislative support remains a key barrier to implementation of CE particularly in developing countries including Sri Lanka. Despite growing interest in CE adoption, limited research has examined the extent to which existing legislative provisions facilitate the implementation within the Sri Lankan CI. This research aims to investigate the adaptability of existing legislative provisions relevant to CE implementation in the Sri Lankan CI. The study adopted a qualitative research approach, comprising a document review and semi-structured interviews with experts. A documentary review revealed seven legislative-related CE practices in the Sri Lankan jurisdiction. The findings reveal that while existing legislation provides several indirect enablers for CE implementation, the overall regulatory framework remains fragmented and lacks dedicated provisions to effectively support circular construction practices. This study contributes to the literature by providing one of the first systematic assessments of legislative provisions relevant to CE implementation within the Sri Lankan construction industry. The findings offer valuable insights for policymakers and industry stakeholders seeking to strengthen the regulatory framework for a transition towards a circular built environment.

Keywords: Circular economy; CE Laws; Construction industry; Enablers; Sri Lankan Jurisdiction.

1 INTRODUCTION

The CI is a significant economic sector that accounts for over 30% of global natural resource extraction and approximately 25% of global solid waste production (Benachio

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et al., 2020). While the industry plays a vital role in supporting economic development, it is associated with considerable environmental burdens arising from intensive resource consumption and waste generation. Victar and Waidyasekara (2023) and Wijewansha et al. (2021) highlighted that construction activities contribute substantially to economic growth while encompassing a significant pressure on the environment. The CI is estimated to consume more than over 50-60% of global raw materials annually, including large quantities of sand, gravel, cement, and steel, resulting in considerable environmental impacts throughout extraction processing and transportation stages (Eštoková et al., 2023; Alhawari et al., 2021). In addition to direct resource consumption, various construction related activities create a ripple effect on the environment. For instance, cement production alone accounts for approximately 8% of global carbon emissions (Jayawardhana et al., 2023) while sand extraction disrupts riverine ecosystems and coastal morphology and steel production requires significant energy inputs and generates air pollutants (Purchase et al., 2022). Construction activities, including over-ordering, inefficient site management and poor coordination between design and construction processes, contribute significantly to waste generation and material inefficiencies (Victar & Waidyasekara, 2024). Consequently, the construction industry accounts for approximately 39% of global carbon emissions, including both operational and embodied carbon. In many countries, Construction and Demolition Waste (C&DW) constitutes 30-40% of total waste production, causing to landfill congestion, soil contamination, and Greenhouse gas emissions associated with transportation and waste decomposition (Jayawardhana et al., 2023). These challenges are particularly pronounced in developing countries where waste management systems and regulatory mechanisms are often less developed (Saja et al., 2021).

Given the substantial environmental footprint of CI, the CE has emerged as one of the most promising approaches for improving sustainability and resource efficiency within the sector (Badejo et al., 2024). Unlike the traditional linear economy model based on the “take-make-dispose” approach, CE seeks to minimise resource extraction and waste generation by establishing closed-loop systems that retain materials within productive use for as long as possible (Castro et al., 2022). Accordingly, CE is widely recognised as a sustainable economic model founded on the principles of Reduction, Reuse, and Recycling (3Rs) (Weerakoon et al., 2023). Within the construction context, CE facilitates improved resource efficiency, reduced waste generation, and enhanced resource conservation throughout the project lifecycle (Wanaguru et al., 2022). Gamage et al. (2024) emphasised that successful implementation of CE practices requires consideration from the design stage, as early project decisions significantly influence downstream construction and end-of-life outcomes (Gamage et al., 2024). Similarly, Wijewansha et al. (2021) explored practical application of CE concept across both the planning and post-construction phases of the Sri Lankan construction industry.

The successful implementation of CE within the CI requires not only technical and managerial interventions but also an enabling legislative and regulatory environment. Legislative provisions play a pivotal role in governing environmental protection, waste management, resource conservation, environmental impact assessment, and sustainable construction practices. Consequently, legal frameworks can serve as important enablers for the transition towards a circular construction sector by creating regulatory mechanisms that encourage resource efficiency, waste minimisation, and sustainable material management practices (Hossain et al., 2020).

Several studies have examined CE implementation within the construction industry from different perspectives. For example, Wijewansa et al. (2021) investigated the practical application of CE principles across the lifecycle of building projects in Sri Lanka, while Gamage et al. (2024) highlighted the importance of integrating CE considerations during the design stage to improve resource efficiency and waste reduction. International studies have similarly focused on construction and demolition waste management, resource recovery, stakeholder engagement, business models, and technical strategies for CE implementation within the built environment (Badejo et al., 2024). Furthermore, several researchers have acknowledged policy and regulatory support as a critical enabler for the successful transition towards CE (Bleischwitz et al., 2022; Hossain et al., 2020). However, these studies primarily discuss legislation as a contextual or supporting factor rather than systematically examining specific legislative provisions and their capacity to facilitate CE implementation within the construction sector.

The lack of legislation specifically aligned with CE principles remains a common challenge in many developing countries (Bleischwitz et al., 2022). In the Sri Lankan context, the absence of dedicated CE legislation may hinder the transition towards more sustainable construction practices, resulting in continued resource depletion, environmental degradation, and inadequate waste management. Although previous studies have examined CE concepts, implementation strategies, and sustainability practices within the construction sector, limited attention has been paid to the legislative provisions that may facilitate CE implementation in Sri Lanka. Furthermore, the extent to which existing legislation and regulatory provisions support CE principles within the Sri Lankan construction industry remains largely unexplored.

This represents a significant knowledge gap within both the CE and construction management literature. There is no previous study that systematically examined the existing legislative framework of Sri Lanka from a CE perspective to evaluate the potential contribution towards CE implementation in the construction industry. Therefore, the novelty of this study lies in the comprehensive assessment of existing legislative provisions relevant to CE implementation and the identification of legislative gaps and opportunities for strengthening regulatory support for a circular built environment in Sri Lanka. In this context, this research aims to investigate the adaptability of existing legislative provisions relevant to CE implementation in the CI within the Sri Lankan jurisdiction and address this knowledge gap. The objectives of the study are to identify relevant legislation and its provisions related to CE in the Sri Lankan Jurisdiction, and to investigate how these provisions enable the implementation of CE in CI in the Sri Lankan Jurisdiction.

2 METHODOLOGY

Following Crossman (2020), this study uses a qualitative research methodology to collect detailed insights from documents and experts participants regarding the legislative provisions relevant to CE implementation in the Sri Lankan construction industry. A qualitative approach was considered appropriate as the study seeks to explore and interpret the extent to which existing legislative provisions facilitate CE implementation rather than quantify predefined variables. Furthermore, legal and regulatory frameworks are context-dependent and often require interpretive analysis to understand their practical implications within a specific jurisdiction. Choosing a qualitative multi-method approach for this research is justified for several reasons.

- CE implementation is not governed by a single piece of legislation but rather by an interconnected framework of environmental, planning, waste management, and construction-related legislation. Qualitative research enables the systematic examination of these legislative relationships and facilitates an understanding of their collective contribution towards CE implementation.
- Many legislative provisions associated with CE principles, such as resource efficiency, waste minimisation, recycling, and extended producer responsibility, are evolving within the Sri Lankan regulatory landscape. Qualitative methods, including documentary review and expert interviews, provide the flexibility required to identify legislative gaps, overlaps, and implementation challenges.
- Qualitative approaches facilitate the capture of expert interpretations and practical experiences, thereby providing insights into how legislative provisions operate within real-world construction and regulatory environments.

2.1 RESEARCH PROCESS

Accordingly, this research followed a systematic three-stage research process, comprising literature review, documentary review, and expert interviews as illustrated in Figure 1.

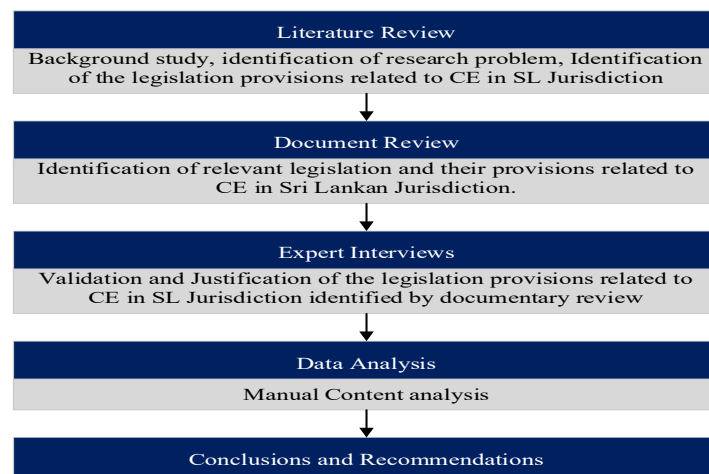


Figure 1: Research process for the research

The literature review was conducted to establish the theoretical foundation of the study and identify CE principles, implementation requirements, and legislative dimensions discussed in previous research. The documentary review subsequently examined existing legislative instruments relevant to CE implementation within the Sri Lankan construction industry. Finally, expert interviews were conducted to validate, contextualise, and enrich the findings derived from the documentary review.

2.2 LITERATURE REVIEW

A comprehensive literature review was conducted to identify CE practices and the legal provisions used in CI, legislative considerations relevant to CI. The review included peer-reviewed journal articles, conference papers, policy reports, and legislative studies related to Circular Economy implementation within the built environment. The literature review examined the role of legislation in facilitating CE practices in the CI. The findings of the literature review provided the basis for identifying potential legislative dimensions that were subsequently explored through the documentary review and expert interviews.

2.3 DOCUMENTARY REVIEW

Documentary reviews are particularly useful for qualitative research as they bridge theoretical perspectives with empirical realities (Swain et al., 2025). Documentary review is the main content of legal research, involving the analysis of various sources of law to establish legal principles (Wills, 2022). Legal research supplements the area of practice by backing up everything with credible sources, and even legislation for documentary review. In this study, the documentary review served as the primary data collection method for identifying legislative provisions relevant to CE implementation within the Sri Lankan construction industry. Legislative documents were accessed through publicly available official sources, including the Sri Lanka Parliament database, the Ministry of Environment, the Central Environmental Authority (CEA), and other relevant government regulatory institutions. The selection of legislative documents was guided by their relevance to construction activities, environmental protection, waste management, resource conservation, sustainable development, and related regulatory functions. Consequently, the review focused on legislation that contained provisions associated with key CE principles. The documentary review followed a structured process comprising three stages: (1) identification of potentially relevant legislation through literature findings and government sources; (2) screening and selection of legislation based on relevance to CE principles and construction activities; and (3) detailed examination of legislative provisions to identify mechanisms that may facilitate or hinder CE implementation. The findings obtained from this stage formed the basis for the development of the expert interview protocol.

2.4 EXPERT INTERVIEWS

This study explored the adaptability of laws to support CE in the CI of Sri Lanka. Accordingly, semi-structured expert interviews were conducted to obtain in-depth, insights from professionals possessing specialised knowledge of legislation, environmental governance, and construction industry practices. A purposive sampling strategy was employed to select experts with substantial experience and expertise relevant to the research topic. Purposive sampling was considered appropriate as the study required participants who possessed specialised knowledge regarding legislative frameworks, regulatory implementation, environmental management, and construction industry practices. Semi-structured interviews were conducted with five experts who are having more than 15 years of professional experience. The selection of five experts was considered adequate due to the specialised and exploratory nature of the study. Previous qualitative research (Saunders et al., 2015) has recognised that smaller samples may be appropriate where participants possess extensive domain expertise and where the objective is to obtain detailed, information-rich insights rather than statistical representation. Following Table 1 presents the profile of the experts.

Table 1: Profile of the experts

Code	Professional Designation	Sector	Years of Experience	Relevance to the Study
E1	Director (Legal)	Statutory Regulatory Body	18	Extensive experience in interpreting and implementing environmental and planning legislation relevant to CE adoption in construction

Code	Professional Designation	Sector	Years of Experience	Relevance to the Study
E2	Professor in Law	Academia	30	Expertise in legal frameworks, policy analysis, and legislative development related to sustainability
E3	Senior Lecturer / Attorney-at-Law	Academia / Legal Practice	21	Experience in legal interpretation and application of legislation within the built environment
E4	Lawyer / Environmental Specialist	Legal and Environmental Sector	20	Practical experience in environmental compliance and implementation of sustainability-related regulations
E5	Lawyer / Researcher	Legal Research and Practice	32	Expertise in evaluating legislative frameworks and identifying regulatory gaps relevant to CE implementation

The interview guide was developed based on the findings of the documentary review. Specifically, legislative provisions identified during the documentary review were presented to the experts to assess their relevance, applicability, strengths, limitations, and potential contribution towards CE implementation within the construction industry. In addition, experts were invited to identify legislative gaps, implementation challenges, and opportunities for strengthening regulatory support for CE adoption in Sri Lanka. These semi-structured interviews allowed experts to elaborate on issues beyond the predefined questions and provided valuable contextual insights regarding the practical implementation of legislative provisions within the Sri Lankan construction industry.

2.5 DATA ANALYSIS

The data obtained from the documentary review and expert interviews were analysed using manual content analysis. Manual content analysis was considered appropriate due to the relatively small number of legislative documents and interview transcripts involved in the study, as well as the interpretive nature of legal and regulatory analysis. Unlike automated coding approaches, manual content analysis enabled the researchers to closely engage with the data and capture contextual meanings embedded within legislative provisions and expert opinions (Zai et al., 2025). The analysis process involved several stages: (1) familiarisation with the collected data; (2) identification of legislative provisions relevant to CE principles; (3) coding and categorisation of findings into thematic areas; (4) comparison and validation of themes using expert interview data; and (5) synthesis of findings to identify legislative enablers, limitations, and gaps related to CE implementation within the Sri Lankan construction industry.

3 FINDINGS OF THE DOCUMENT REVIEW

3.1 LEGISLATION IN SRI LANKA RELEVANT TO CE IN THE CONSTRUCTION INDUSTRY

The selection of legislative Acts for this study followed a structured screening process. Initially, legislation identified through the literature review and documentary review was compiled from official government and regulatory sources. The identified legislation was subsequently screened based on three criteria: (1) relevance to construction industry activities; (2) presence of provisions related CE, and (3) potential influence on decision-making and operational practices within the CI. Based on these criteria, seven Acts were selected for detailed analysis as they contained the most direct and substantive legislative

provisions relevant to facilitating CE implementation within the Sri Lankan CI. While additional legislation, regulations, policies, and guidelines may indirectly contribute to CE, they were beyond the scope of the present analysis due to their limited direct applicability to construction-related CE practices. Following are the selected legislations for the research.

1. National Environmental Act, No. 47 of 1980 and its Amendments
2. Urban Development Authority Law, No. 41 of 1978
3. Coast Conservation Act, No. 57 of 1981
4. Town and Country Planning (Amendment) Act, No. 49 of 2000
5. Municipal Councils Ordinance, Urban Councils Ordinance, and Pradeshiya Sabhas Act (Local Authority legislation)
6. Construction Industry Development Act, No. 33 of 2014
7. Sustainable Development Act, No. 19 of 2017.

The findings are analysed to identify gaps within the existing legislative provisions relevant to CE implementation. The following sections critically examine each selected legislative instrument in relation to the alignment with CE principles and its potential role in facilitating CE implementation.

3.2 LEGISLATION, ITS PROVISIONS AND ENABLERS RELATED TO CE IN THE SRI LANKAN JURISDICTION

3.2.1 National Environmental Act, No. 47 of 1980 and its Amendments

The NEA No. 47 of 1980, with amendments (No. 56 of 1988, No. 53 of 2000), provides the legal framework for CE in Sri Lanka, focusing on waste management, pollution control, and resource efficiency through tools such as the Environmental Protection License (EPL) and Environmental Impact Assessment (EIA). From a CE analytical perspective, the NEA's EIA regime serves as a regulatory gateway through which significant construction projects must pass before receiving project approval. In principle, that gateway provides an opportunity to assess CE-relevant dimensions of the proposed project, including estimates of material consumption and waste generation. Enablers for CE implementation in the NEA is revealed in Table 2.

Table 2: Enablers for CE implementation in the National Environmental Act, No. 47 of 1980

Section	Legal Provisions related to CE	Enablers for the Implementation of CE Laws
Sec. 24	Introduce discharge standards for pollution, regulates environmental discharges.	Regulatory Enablers - Essential Environmental Policies and Pollution Control regulations for C&DW: Stringent rules requiring waste management and emission reductions (e.g., in the construction industry and urban development) act as top drivers (C&DW and secondary material-use standards are still not incorporated).
Sec. 17	Natural resources protection that provides leverage for CE capability requirements.	- Legally holding producers accountable for the entire lifecycle of their products, from design to end-of-life (CE competencies not yet embedded in grading criteria). - Societal Enablers - Awareness and Public Pressure: Public pressure for cleaner environments and corporate social responsibility (CSR) drives firms to adopt the circular model.

Section	Legal Provisions related to CE	Enablers for the Implementation of CE Laws
Part IV B - Sec. 23	Waste Management and Pollution Control: focuses on environmental quality.	Integrating Extended Producer Responsibility (EPR) into the NEA introduces regulations for CW&D (while Part IV A requires EPLs for industries, compelling compliance with standards that encourage cleaner production and waste recycling).
Part IV C - Sec. 23	Mandatory EIAs for prescribed projects ensure environmental sustainability and resource optimisation in large-scale projects.	- Environmental and Technical Enablers-Reduction of Natural Resource Depletion: Shifting to renewable inputs and materials, reducing raw material dependency, Industrial Symbiosis (IS): Incentivising networks where waste from one organisation becomes the feedstock for another. - Enablers for Advanced Technologies: Adoption of technologies via artificial intelligence (AI), IoT, and advanced, cleaner production methods to enable efficient waste handling.

Under the NEA, C&DW is not recognised as a scheduled waste category subject to Central Environmental Authority (CEA) licensing requirements. As a result, C&DW is excluded from the more rigorous regulatory controls and monitoring mechanisms governing hazardous and industrial wastes, potentially limiting effective oversight of the management and disposal.

3.2.2 Urban Development Authority Law, No. 41 of 1978 and its Amendments

The Urban Development Authority (UDA) Law No. 41 of 1978 establishes the UDA's mandate to regulate urban development activities within designated urban development areas, including the review and approval of development permits for significant construction projects. The UDA's development permit system is one of the regulatory gateways through which significant urban construction occurs. From a CE perspective, the UDA's development permit system offers a parallel mechanism to the EIA for imposing CE conditions on urban construction projects. Table 3 depicts the enablers for CE implementation in Urban Development Authority Law.

Table 3: Enablers for CE implementation in Urban Development Authority Law, No. 41 of 1978

Section	Provisions related to CE	Enablers for CE implementation
Sec. 17 and Sec. 21	Empowers UDA to issue implementing regulations for urban development	- Green Procurement Regulations encourage and require the government and private sectors to procure recycled or sustainable materials. - New regulations require the incorporation of CE permit conditions for development projects (for C&DW and secondary material requirements).

The current development permit application process and review criteria contain no CE-specific requirements. The applications are assessed against urban planning, land-use compatibility, structural, and safety criteria, without any provisions addressing material specifications, waste management, design for disassembly, or secondary material use.

3.2.3 Coast Conservation Act, No. 57 of 1981 and its Amendments

The Coast Conservation Act No. 57 of 1981, administered by the Coast Conservation and Coastal Resource Management Department (CCCRMD), regulates construction activities within the coastal zone. This conservation orientation has produced detailed assessments and permit conditions addressing dredging, sand mining, shoreline modification, and pollution discharge in the coastal zone. However, it has not extended to the CE dimensions of construction projects within the coastal zone. Enablers for CE implementation in the Coast Conservation Act is revealed in table 4.

Table 4: Enablers for CE implementation in the Coast Conservation Act, No. 57 of 1981, and its Amendments

Section	Provisions related to CE	Enablers for CE implementation
Sec. 12	The development scheme preparation and planning framework determines where and what development may occur; it is a potential instrument for area-wide material flow and CE infrastructure planning	• New Regulations for CE Concept. Limited explicit CE provisions in the legislation. • Focused primarily on quality and safety rather than environmental sustainability.
Sec. 16 and Sec. 32	Development control; Development approvals under the planning framework can be conditioned to require CE assessments	• New Regulations (No specific CE provisions).

The Coast Conservation Acts permit conditions for projects to address coastal ecological impacts but impose no requirements regarding the management of construction waste, the specification of secondary materials, or the design of structures for future adaptation or disassembly.

3.2.4 Town and Country Planning Ordinance and its Amendment Act No. 49 of 2000

The Town and Country Planning Ordinance (Cap. 269) and its Amendment Act 2000 provide the legislative framework for development planning and land-use control, allowing provincial and local authorities to prepare development plans, regulate land use, and control construction development within their jurisdictions depicted in Table 5.

Table 5: Enablers for CE implementation in the Town and Country Planning Ordinance and its Amendment

Sections	Provisions related to CE	Enablers for CE implementation
Sec. 10	Development control. Development approvals under the planning framework can be conditioned to require CE assessments.	Impose New Regulations (No specific CE provisions) (No such CE-related regulations issued to date).
Sec. 14	Local approval authority covering all residential and smaller commercial projects, numerically the largest approval class. CE content is absent from all local building laws.	Introduce New Regulations (No specific CE provisions) for Building Plan Approval Provisions in the coastal belt.

From a CE perspective, the planning framework could serve as a potential instrument for area-wide CE policy. In principle, planning authorities could require the preparation of material flow assessments for large development areas, designate zones for secondary material processing facilities, require infrastructure for waste segregation as a planning

condition, and incentivise the reuse of existing building stock over greenfield development through planning policies favouring adaptive reuse.

3.2.5 Municipal Councils Ordinance, Urban Councils Ordinance, and Pradeshiya Sabhas Act (Local Government legislation)

Three principal local government authorities establish the legal framework for building regulations, waste management, and development control at the local scale. Local authorities exercise building plan approval authority for construction projects within their jurisdictions, requiring applicants to submit structural plans and specifications for compliance review against applicable building laws before construction commences. The table 6 reveals Enablers for CE implementation in Local Government Law.

Table 6: Enablers for CE implementation in Local Government Law

Section	Provisions related to CE	Enablers for CE implementation
Waste Management Provisions	Mandate for local solid waste management services, C&DW could be incorporated into local waste management frameworks. National standards for local C&DW management are not available.	Impose Financial Incentives: Tax reductions or financial support for projects turning waste into resources (e.g., reuse material, etc.).
Local building bylaws	Local approval authority covering all residential and smaller commercial projects, numerically the largest approval class. Building Plan Approval Provisions.	Introduce new bylaws for CE implementation (CE content absent from all local building bylaws).

The absence of CE criteria from local authority building approval processes is analytically significant because local authorities administer approval for the vast majority of construction projects.

3.2.6 Construction Industry Development Act No. 33 of 2014

The Construction Industry Development Act No. 33 of 2014 established the Construction Industry Development Authority (CIDA) as the regulatory body for the construction sector. It is directly involved in construction, does not contain CE content, and mentions registration criteria focused on conventional construction standards. Amendments to the contractor registration criteria may be necessary to incorporate CE related competencies and capabilities.

3.2.7 Sustainable Development Act No. 19 of 2017

This is the most directly relevant legislation for enforcing sustainable principles in line with Sections 11, 12, and 13. However, the CE concept is not addressed, and it does not include CE principles. Consequently, the above legislation shows that CE legislation in Sri Lanka is fragmented and primarily policy-driven. While waste minimisation and recycling principles are mentioned in the NEA Act and UDA Act, they are less acknowledged and not enforced through binding obligations. Furthermore, recycling and sustainable construction practices, though encouraged by regulatory bodies, are still underdeveloped due to a lack of regulatory mandates. The legal provisions in the CI ensure that construction activities comply with environmental law, building regulations and urban development law.

3.3 VALIDATION OF FINDINGS OF DOCUMENT REVIEW BY EXPERTS' INTERVIEWS

As mentioned earlier, five legal experts systematically reviewed and validated seven types of legislation. Drawing on expert perspectives, multiple sections of the NEA were recognised as applicable to CE practices within the construction industry. Based on the insights of the experts, Section 10 of NEA serves as the primary legal bedrock for CE due to following reasons:

- It establishes the legal “powers, functions, and duties,” essentially setting the boundaries of what an environmental regulator is permitted to do.
- It provides the mandate to draft the specific regulations that govern how construction projects operate.
- Specifically, Subsection (1) (m) is identified as an important tool as it focuses on waste utilisation, which is the core mechanism for keeping materials in use within a circular system.

The experts (E1, E2 and E4) confirmed the consensus that Section 17 of NEA serves as the primary legal backbone for CE in construction. By focusing on Natural Resources Management, it provides the necessary framework for shifting from traditional waste disposal to resource optimisation. Experts further explained that,

- It directly supports material reuse and the creation of material stock data, turning buildings into “resource banks.” (confirmed by E2 and E3),
- It bridges the gap between policy and practice through selective demolition and the evaluation of materials for their next life cycle (confirmed by E1 and E3), and
- It aligns with sustainable material flows, prioritising conservation over extraction (confirmed by E2 and E3).

The experts acknowledged that Section 21 of the NEA on Forestry Management is applicable for implementing CE practices in the CI, as it governs the sustainable sourcing and management of timber, a key construction material. E2 emphasised that this section “impacts timber sourcing for construction”, indicating its regulatory influence over the process (how, where) of obtaining timber. Additionally, E5 highlighted that Section 21 relates to sustainable timber use in construction, “relevance to CE goals like using renewable resources, promoting recyclability, and reducing dependency on virgin materials by establishing guidelines for forestry conservation, controlled harvesting, and sustainable supply chains”. Section 21 of NEA supports CE practices such as designing material reuse, and E2 highlighted “extending the lifespan of wood-based elements” and “reducing construction waste.” E1, E2, and E4 experts emphasised the importance of Section 32 of the NEA on Regulation-Making Powers. E2 emphasised that this section “provides the legal mechanism through which specific CE requirements could be implemented without amending the entire Act”, indicating that it offers a flexible and responsive tool for integrating CE principles into CE practices. E4 further noted it “as critical as for it allows adaptability and timely updates, ensuring that emerging CE practices such as material reuse mandates, waste reduction targets, or deconstruction guidelines can be legally supported and enforced”.

The experts’ focus on Section 32 (Regulation-Making Powers) of the NEA highlights it as the engine of the Act’s long-term success. According to the experts, this section provides:

- The ability to implement specific CE requirements, such as material reuse mandates, quickly as technology evolves, and
- A legal path to set and enforce waste reduction targets or deconstruction guidelines.

All experts acknowledged the need for appropriate legislation before commencing any CE practice in the CI. Therefore, the first step is to create a new CE law with the new CE Act. E1 pointed out that each stage of a construction project needs different legal rules. For the design stage, laws are necessary to enable architects to plan buildings that can be altered later and easily dismantled. The law should mention at least “the percentage of building materials that are reusable or recyclable”. All experts identified three critical failures preventing the effective implementation of CE Law in the construction sector as follows:

- There is a fundamental disconnect between law and the actual regulatory obligations and enforcement mechanisms on the ground.
- Current CE requirements apply only to large-scale projects meeting a high contract value threshold. This excludes the residential and small commercial sectors, which represent the vast majority of construction activity.
- The existing legislations lacks a credible threat of enforcement, undermining its overall authority and effectiveness.

3.4 ENABLERS FOR CE LAWS WITH EXISTING LEGISLATION IN THE SRI LANKAN JURISDICTION

The enablers for existing CE laws in the Sri Lankan jurisdiction were identified based on document reviews and expert interviews. Table 7 presents a detailed discussion of enablers of CE implementation in existing legislation.

Table 7: Enablers for CE laws with existing legislation in the Sri Lankan jurisdiction

Legislation		Enablers
National Environmental Act No. 47 of 1980	Secs. 17 and 24	• Introduce Pollution discharge standards for construction activities. • C&DW and secondary material-use standards should be incorporated.
	Sec. 23	• CE competencies are not yet embedded in the assessment criteria.
Construction Industry Development Act No. 33 of 2014	Sec. 57	• To make Rules. Authority to promulgate technical standards regulations can be exercised to mandate CE practices. Not yet familiar with CE practices.
	Secs. 12, 13, and 35	• Revisit CIDA functions, objectives, and registration of contractors with CE requirements.
Urban Development Authority Law No. 41 of 1978	Sec. 17	• Empowers UDA to issue implementing regulations, amendments, or new regulations required to incorporate CE permit conditions.
	Sec. 21	• Amending the Coastal Zone Permit System. The permit system covers all coastal construction, including tourism, residential, and port facilities. Coastal ecology must be addressed (C&DW and secondary material requirements are absent).
Coast Conservation Act No. 57 of 1981	Sec. 16	• Permit conditions. Conditions may be imposed on coastal construction permits. The mechanism is available to embed CE requirements, but it has not yet been utilised for this purpose.

Legislation		Enablers
	Secs. 12, 32	• Development scheme preparation. The planning framework determines where and what development may occur, serves as a potential instrument for area-wide material flow, and supports CE infrastructure planning.
Town and Country Planning Ordinance & Amendments	Sec. 10	• Development control. Development approvals under the planning framework can be conditioned to require CE assessments. No such conditions have been issued to date.
	Building Plan Provisions	• Local approval authorities cover all residential and smaller commercial projects, numerically the largest approval class. CE content is absent from all local building laws.
Municipal Councils Act, Urban Councils Act, and Pradeshiya Sabhas Act	Waste Management Service Provisions	• C&DW could be incorporated into local waste management frameworks. National standards for local C&DW management are absent.

According to Table 7, implementing enablers for the CE concept within the construction industry of Sri Lanka is driven through a patchwork of existing environmental, urban, and development laws rather than a single, standalone CE Act. To establish effective “enablers” for resource efficiency, waste reduction, and extended product lifecycles, several key legislative provisions are identified for amendment or enhanced enforcement.

4 CONCLUSIONS

This study investigated the adaptability of existing legislative provisions to support CE implementation within the Sri Lankan construction industry. The findings revealed that while several legislative instruments contain provisions that indirectly support CE principles, the overall legislative framework remains fragmented and lacks a coordinated regulatory approach specifically aimed at facilitating circular construction practices. Among the legislation reviewed, the National Environmental Act (NEA) emerged as the most significant legislative instrument, containing the majority of provisions relevant to environmental protection, waste management, and resource conservation that align with CE principles. The findings further indicate that although certain legislative provisions and regulatory mechanisms capable of supporting CE implementation are already in place, their effectiveness is constrained by inadequate monitoring, enforcement, and institutional coordination. In particular, the absence of dedicated legislative provisions relating to material recovery, construction and demolition waste segregation, reuse, and recycling limits the widespread adoption of CE strategies within the construction sector. This study contributes to the academic literature by providing one of the first systematic assessments of legislative provisions relevant to CE implementation within the Sri Lankan construction industry, thereby extending current knowledge on the regulatory dimensions of Circular Economy adoption. From a practical perspective, the findings offer valuable insights for policymakers, regulatory authorities, and industry stakeholders seeking to strengthen legislative support for circular construction practices. While the study focused on selected legislative instruments and employed a qualitative approach, future research could evaluate the implementation feasibility of the proposed legislative reforms, examine stakeholder readiness for regulatory changes, and develop governance frameworks to facilitate CE implementation within the construction industry. Accordingly, the study highlights the need for a more integrated and dedicated legislative framework to support the transition towards a Circular Economy within the Sri Lankan construction sector.

4.1 RECOMMENDATIONS

Sri Lanka is currently at a relatively early stage of adopting CE principles within the CI. Therefore, there is a need to strengthen the legislative and regulatory framework to establish a coherent vision for circularity and promote the systematic implementation of CE practices across the construction lifecycle. The findings identified significant gaps within the current legislative framework, particularly in relation to provisions that directly support or mandate CE-aligned practices within the construction industry. The recommendations focus on the successful adaptation of law to implement CE practices in the Sri Lankan construction industry as follows:

- Review and amend relevant legislation, particularly the NEA No. 47 in 1980, CIDA No. 14 of 2014 and other related regulations for implementing CE practices for the construction industry.
- Enhance the operational capacity of regulatory authorities by allocating a new division to lead CE implementation, especially considering the construction industry and providing new concepts and legal knowledge for industry practitioners.
- Develop and implement a dedicated CE Act for Sri Lanka to provide a comprehensive legislative framework for promoting circularity within the construction industry.

5 REFERENCES

- Alhawari, O., Awan, U., Bhutta, M. K. S., & Ülkü, M. A. (2021). Insights from circular economy Literature: A review of extant definitions and unravelling paths to future research. *Sustainability*, 13(2), 859. <https://doi.org/10.3390/su13020859>
- Badejo, A. O., Aminu, N. I., Sekar, L. K., & Okoroafor, E. R. (2024). Assessment of the environmental risks and policies associated with carbon capture and storage in the United Kingdom: A case study of the HyNet Northwest project. *Abu Dhabi International Petroleum Exhibition & Conference*. ADIPEC. <https://doi.org/10.2118/222780-ms>
- Benachio, G. L. F., Freitas, M. D. C. D., & Tavares, S. F. (2020). Circular economy in the construction industry: A systematic literature review. *Journal of Cleaner Production*, 260, 121046. <https://doi.org/10.1016/j.jclepro.2020.121046>
- Bleischwitz, R., Yang, M., Huang, B., Xu, X., Zhou, J., McDowall, W., Andrews-Speed, P., Liu, Z., & Yong, G. (2022). The circular economy in China: Achievements, challenges and potential implications for decarbonisation. *Resources Conservation and Recycling*, 183, 106350. <https://doi.org/10.1016/j.resconrec.2022.106350>
- Castro, C. G., Trevisan, A. H., Pigosso, D. C., & Mascarenhas, J. (2022). The rebound effect of circular economy: Definitions, mechanisms and a research agenda. *Journal of Cleaner Production*, 345, 131136. <https://doi.org/10.1016/j.jclepro.2022.131136>
- Coast Conservation Act, 57 (1981). https://env.gov.lk/web/images/downloads/acts/coast_conservation_act_no_57_of_1981.pdf
- Construction Industry Development Act, 33 (2014). https://www.srilankalaw.lk/YearWisePdf/2014/CONSTRUCTION_INDUSTRY_DEVELOPMENT_ACT,_No._33_OF_2014.pdf
- Crossman, A. (2020) An overview of qualitative research methods: Direct observation, interviews, participation, immersion, focus groups. Thought Co. <https://www.thoughtco.com/qualitative-research-methods-3026555>
- Eštoková, A., Picazo, M. Á. P., Luptakova, A., & Václavík, V. (2025). Editorial: Environmental impacts of materials and their life cycle. *Frontiers in Environmental Science*, 13, 1557206. <https://doi.org/10.3389/fenvs.2025.1557206>

- Gamage, I., Senaratne, S., Perera, S., & Jin, X. (2024). Implementing circular economy throughout the construction project life Cycle: A review on potential practices and relationships. *Buildings*, 14(3), 653. <https://doi.org/10.3390/buildings14030653>
- Hossain, M. U., Ng, S. T., Antwi-Afari, P., & Amor, B. (2020). Circular economy and the construction industry: Existing trends, challenges and prospective framework for sustainable construction. *Renewable and Sustainable Energy Reviews*, 130, 109948. <https://doi.org/10.1016/j.rser.2020.109948>
- Jayawardhana, N., & Withanage, K. (2023). Quantity surveyor's role towards circular economic principles in the pre-contract phase of construction projects in Sri Lanka. In S. Samarawickrama, (Ed.), *FARU 2023 Conference Proceedings: 16th International Research Conference - FARU 2023* (pp. 57–66). Faculty of Architecture, University of Moratuwa. <https://doi.org/10.31705/faru.2023.8>
- National Environmental Act, 47 (1980). <https://www.cea.lk/web/images/pdf/acts/act47-80.pdf>
- Purchase, C. K., Zulayq, D. M. A., O'Brien, B. T., Kowalewski, M. J., Berenjian, A., Tarighaleslami, A. H., & Seifan, M. (2021). Circular economy of construction and demolition waste: A literature review on lessons, challenges, and benefits. *Materials*, 15(1), 76. <https://doi.org/10.3390/ma15010076>
- Saja, A.M.A., Teo, M., Goonetilleke, A. & Ziyath, A.M. (2021). A critical review of social resilience properties and pathways in disaster management. *International Journal of Disaster Risk Science*, 12, 790–804. <https://doi.org/10.1007/s13753-021-00378-y>
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research methods for business students* (7th ed.). Pearson Education Limited.
- Sustainable Development Act, 19 (2017). https://www.srilankalaw.lk/YearWisePdf/2017/19-2017_E.pdf
- Swain, S., Foote, W., Golding, F., & Krogh, C. (2025). Documentary analysis. In *Handbook of Research Methods in Social Work*, (pp. 237–248). Edward Elgar Publishing. <https://doi.org/10.4337/9781035310173.00029>
- Town and Country Planning (Amendment) Act, 49 (2000). https://documents.gov.lk/view/act/2000/8/49-2000_E.pdf
- Urban Development Authority Law, 41 (1978). <https://www.uda.gov.lk/attachments/act/FnBTmBVbLt.pdf>
- Victar, H. C., & Waidyasekara, A. S. (2024). Optimising construction waste management in Sri Lanka through Circular economy strategies: A focus on construction and renovation and use and operate stages. *Engineering Construction & Architectural Management*, 32(7), 4275–4309. <https://doi.org/10.1108/ecam-06-2023-0608>
- Victar, H., & Waidyasekara, K. (2023). Circular economy strategies for waste management in Sri Lanka: A focus on demolitions and repurpose and material recovery and production stages. *Waste Management & Research the Journal for a Sustainable Circular Economy*, 42(11), 953–976. <https://doi.org/10.1177/0734242x231206988>
- Wanaguru, K., Mallawaarachchi, H., & Vijerathne, D. (2022). Circular economy (CE) based material selection: Development of a CE-based '10R' evaluation framework for building construction projects in Sri Lanka. In Y.G. Sandanayake, S. Gunatilake, & K.A.G.S. Waidyasekara (Eds.). *Proceedings of the 10th World Construction Symposium* (pp. 208–219). University of Moratuwa. <https://doi.org/10.31705/wcs.2022.18>
- Weerakoon, T. G., Wimalasena, S., & Zvirgzdins, J. (2023). Assessment of implementation of circular economy framework in the Sri Lankan construction sector. *Baltic Journal of Real Estate Economics and Construction Management*, 11(1), 133–152. <https://doi.org/10.2478/bjreecm-2023-0009>
- Wijewansa, A. S., Tennakoon, G., Waidyasekara, K., & Ekanayake, B. (2021). Implementation of circular economy principles during pre-construction stage: The case of Sri Lanka. *Built Environment Project and Asset Management*, 11(4), 750–766. <https://doi.org/10.1108/bepam-04-2020-0072>
- Wills, W. M. (2022). Reviews and documentary research methods in a scientific article. *International Journal of Research*, 9(9), 1–6. https://www.researchgate.net/publication/363346178_Reviews_and_Documentary_Research_Methods_in_a
- Zai, F., Rohrbach, T., & Hänggli Fricker, R. (2025). Voices and media frames in the public debate on artificial intelligence: Comparing results from manual and automated content analysis. *Frontiers in Communication* 10, 1599854. doi: 10.3389/fcomm.2025.1599854