

Children's Rights and Environmental Education in Early Childhood: Policy Insights from China's Eco-Civilisation and ASEAN under the CRC–SDG–GC 26 Framework

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ABSTRACT

This article examines how children's rights are reflected in early childhood environmental education (ECEE) policy in China and ASEAN through the normative lens of the UN Convention on the Rights of the Child (CRC), General Comment No. 26 (2023), and the Sustainable Development Goals (SDGs). Drawing on a qualitative analysis of 42 policy documents, it compares China's eco-civilisation agenda with regional and national sustainability-related frameworks across ASEAN. The analysis shows that China has developed a more coherent policy architecture by linking sustainability to curriculum, teacher preparation, and institutional practice. Even so, children's participation rights, especially under CRC Article 12, remain weakly articulated. In ASEAN, policy language is often more open to participation and inclusion, but implementation is uneven and regional commitments are seldom enforceable. Across both contexts, provision and protection rights are expressed more clearly than participation rights. The article argues that ECEE policy is strongest when children are treated as recipients of environmental knowledge but becomes less assured when they are recognised as present rights-holders whose views should help shape educational responses to ecological change. By bringing China and ASEAN into the same analytical frame, the study offers a rights-based approach to comparative ECEE policy and points to the need for models that combine policy coherence with meaningful child inclusion.

Keywords: early childhood environmental education, children's rights, Sustainable Development Goals (SDGs), ASEAN

The climate crisis is no longer a distant issue in children's lives. It is already shaping the environments in which young children grow, learn, and play, and it does so unevenly across social and national contexts. For that reason, environmental education in early childhood can no longer be treated simply as an optional area of curriculum enrichment. It needs to be understood as part of a broader rights-based response to ecological risk. General Comment No. 26 (2023) of the UN Committee on the Rights of the Child makes this point clear by affirming that a clean, healthy, and sustainable environment is necessary for the realisation of children's rights. In policy terms, this moves environmental learning from the margins of educational debate to the centre of questions about protection, development, participation, and justice.

This study begins from that premise. It asks not only whether sustainability language appears in policy, but also how children are positioned within it. Are young children understood mainly as future citizens who must be prepared for environmental crisis, or as present rights-holders whose interests, protection, learning, and participation should shape policy now? Although a growing body of scholarship addresses early childhood education for sustainability, fewer studies examine how policy frameworks translate children's rights obligations into the governance of early childhood environmental education (Howell, 2022; Lundy & McEvoy, 2012; Savelyeva, 2024). The gap is particularly evident in comparative work across Asian contexts.

China offers an especially important case. Through the language of eco-civilisation, sustainability has been embedded in a wider state project linking environmental responsibility with national development and social transformation. This agenda has shaped curriculum design, teacher preparation, and school-based initiatives, including green school programmes and local pilots in provinces such as Zhejiang and Guangdong (Zhou, Liu, Han, & Wang, 2016; Liu, Jiang, & Li, 2022; Gao, 2022). The scale and policy coherence of this approach make China highly significant for comparative work in early childhood environmental education. At the same time, strong system design does not in itself resolve questions of child agency, equity, or participation. These are precisely the issues that become more visible when China is examined through the CRC and GC 26.

To make the evidentiary basis for the China case more transparent, Table 1 summarises the principal national and ministerial policy documents that anchor the analysis of eco-civilisation in early childhood education.

Table 1. Key Chinese Policy Documents Underpinning the Analysis of Eco-Civilisation in ECEE

Document	Year	Institutional Source	Relevance to the Analysis
Guidelines on Promoting Eco-Civilisation Education	2019	Ministry of Education of the People's Republic of China	Foundational directive embedding eco-civilisation in the education sector.
National Curriculum Standards for Early Childhood Education	2020	Ministry of Education of the People's Republic of China	Provides the baseline early childhood curriculum framework used to assess sustainability integration.
Action Plan on Environmental Literacy for Young Learners	2020	State Council of the People's Republic of China	Sets environmental literacy benchmarks for young learners and links them to national policy goals.
Eco-Civilisation Curriculum Reform Pilot Report	2021	Ministry of Education of the People's Republic of China	Shows how eco-civilisation principles were piloted in curriculum implementation.
Children and Climate Resilience Strategy	2021	Ministry of Ecology and Environment of the People's Republic of China	Provides child-centred policy language on resilience, protection, and environmental risk.
China's National Plan on Ecological and Environmental Protection (2021–2025)	2021	State Council of China	Supplies the broader strategic policy context for ecological governance across sectors, including education.
Green Development in the Education Sector	2022	National Development and Reform Commission	Links the green development agenda to education-sector priorities and institutional planning.
White Paper on the Green Schools Initiative	2022	Ministry of Education of the People's Republic of China	Illustrates school-level operationalisation of sustainability and institutional practice.

*Note: This table is intended to provide a concise evidentiary counterpart to the ASEAN country comparison and document–country mapping. It identifies the principal Chinese policy documents that anchor the analysis of eco-civilisation in early childhood education without reproducing the fuller corpus already listed in Appendix A.

The Association of Southeast Asian Nations (ASEAN) provides a useful comparative frame. Established in 1967, ASEAN is a regional intergovernmental organisation that, during the study and review period relevant to this manuscript, comprised ten member states: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Although it is often associated with economic and political cooperation, ASEAN has also developed policy agendas in education, social welfare, child protection, and sustainable development. These shared agendas make ASEAN relevant to the present study. At the same time, ASEAN is not a uniform policy space. Member states differ substantially in institutional capacity, environmental vulnerability, curriculum reform, and the extent to which sustainability is integrated into early childhood provision. That diversity makes ASEAN useful not as a competing focal case, but as a comparative mirror that helps clarify what is distinctive about China’s model. At the time this manuscript entered review in August 2025, Timor-Leste had not yet been formally admitted as a full ASEAN member. Its formal admission took place later, on 26 October 2025. Accordingly, the comparative analysis in this article reflects the ten-member ASEAN configuration applicable to the study corpus and review period.

Within ASEAN, some countries have moved further than others in linking sustainability and early childhood education. Singapore has integrated green competencies into broader education and development agendas, Malaysia has incorporated sustainability into curriculum reform, and Vietnam has increasingly linked early childhood provision to climate adaptation and resilience (Lim et al., 2024; Rahman & Othman, 2021; Tran, 2023; Nguyen & Le, 2025). Yet the regional picture remains uneven. ASEAN declarations and action plans signal broad commitment, but implementation depends largely on national uptake and remains shaped by consensus-based regional governance. Participation, accountability, and enforceability therefore vary considerably across the region. To make this variation more visible, Table 2 summarises the broad status of ECEE-related policy development across all ten ASEAN member states, while Table 3 maps the documentary basis on which the ASEAN comparison is built.

These differences matter because GC 26 does more than call for environmental awareness. It places environmental policy in direct relation to the four general principles of the CRC: non-discrimination, the best interests of the child, survival and development, and participation. In early childhood settings, these principles raise practical as well as normative questions. Do policies address unequal exposure to environmental harms? Do they build child-sensitive protections in response to floods, haze, or extreme heat? Do they treat children only as learners to be guided, or also as social actors whose perspectives matter in sustainability-related education? Framed in this way, early childhood environmental education becomes a question not only of curriculum content, but also of how states understand children, governance, and responsibility.

Against this background, the article asks: How does China’s eco-civilisation align with CRC-based environmental rights under GC 26, and what additional insights emerge from ASEAN comparisons? To address this question, the study draws on a qualitative document analysis of 42 policy texts and authoritative reports, examining how rights language, sustainability priorities, and governance mechanisms are articulated across China and ASEAN-related contexts.

The article makes three contributions. First, it situates China’s eco-civilisation reforms within global children’s rights discourse, clarifying their alignment with GC 26 and highlighting both their strengths and their limitations for Chinese early childhood education. Second, it uses ASEAN not as a second focal case but as a comparative context, showing more clearly how China’s model stands out in terms of coherence and state-led implementation. Third, it draws out policy implications for embedding CRC principles in sustainability-oriented ECEE. Together, these contributions align with IJECCE’s mission to advance globally informed debate on early childhood environmental education. The article’s originality lies in bringing early childhood pedagogy, sustainability policy, and human rights analysis into the same frame, moving beyond description to evaluate policy against normative obligations. This framing underscores the study’s urgency and relevance for international readers concerned with child rights and sustainability.

Table 2. Comparative Overview of ASEAN Member States in Early Childhood Environmental Education

ASEAN Member State	General Status of ECEE or Early Sustainability Integration	Key Policy or Framework Orientation	Broad Goal or Emphasis	Analytical Note
Brunei Darussalam	Limited visible evidence in the reviewed corpus	Sustainability is linked broadly to education modernisation and environmental awareness	Environmental responsibility and national development	The reviewed corpus contains only limited direct evidence of an early childhood-specific ECEE framework in Brunei Darussalam
Cambodia	Limited visible evidence in the reviewed corpus	Environmental and education priorities appear more general than early childhood-specific	Basic environmental awareness and education access	Evidence of explicit early childhood environmental education integration remains limited in the reviewed documents
Indonesia	Partial to emerging integration	PAUD reform, ecological literacy, local eco-projects, and curriculum adaptation	Ecological literacy, child participation, and local sustainability practice	Indonesia provides some of the clearest examples of participatory practice, including eco-gardens, waste sorting, and locally adapted sustainability learning
Lao PDR	Limited visible evidence in the reviewed corpus	Sustainability concerns appear indirectly rather than through a clearly articulated early childhood framework	Environmental awareness within broader education and development priorities	The corpus suggests weaker formalisation of ECEE in early childhood than in the better-documented ASEAN cases
Malaysia	Partial and increasingly structured integration	Preschool curriculum standards and SDG-linked education planning	Sustainability through stories, play, projects, and teacher support	Malaysia shows stronger curricular recognition of sustainability, although classroom implementation remains uneven
Myanmar	Limited visible evidence in the reviewed corpus	Policy visibility is constrained in the reviewed documents	General education and protection concerns rather than explicit ECEE institutionalisation	The documentary basis for early childhood-specific sustainability integration is thin, suggesting limited evidence rather

Philippines	Emerging but limited evidence in the reviewed corpus	Child-centred and community-oriented education discourse with possible relevance to sustainability	Community awareness, resilience, and child development	than confirmed absence The reviewed corpus does not provide sufficiently strong or detailed evidence of a standalone ECEE framework in early childhood
Singapore	Stronger and more visible integration	Green Plan, sustainability leadership, age-appropriate projects, and policy coherence	Sustainability competencies, green citizenship, and structured educational practice	Singapore is one of the strongest ASEAN examples in the corpus, showing clearer policy alignment and more systematic implementation
Thailand	Emerging but limited evidence in the reviewed corpus	Sustainability appears within broader education and environmental agendas	Environmental awareness and community-based learning	The corpus indicates relevance, but not a strongly elaborated early childhood-specific framework comparable to Singapore or Malaysia
Vietnam	Emerging integration	Climate adaptation, preschool resilience, and teacher training initiatives	Adaptation, preparedness, and environmental awareness in early learning	Vietnam shows growing relevance in climate adaptation discourse, but system-wide integration remains less consolidated

Note. This table is designed to show variation across ASEAN member states rather than to imply equivalent levels of policy development. Categories such as stronger, partial, emerging, and limited visible evidence reflect the scope and clarity of evidence in the reviewed corpus. The table reflects the ten-member ASEAN configuration applicable to the study corpus and to the period in which the manuscript entered review in August 2025.

Table 3. Document–Country Mapping Matrix for ASEAN Member States

ASEAN Member State	Documents in Which the Country Is Mentioned or Analytically Represented	Nature of Reference	Relevance to ECEE Analysis
Brunei Darussalam	ASEAN environmental education action plan; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Regional representation	Included as part of the ASEAN-wide comparison, but without strong country-specific ECEE detail in the reviewed corpus

Cambodia	ASEAN environmental education action plan; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Regional representation	Used to illustrate uneven regional development and comparatively weaker documentary visibility in early childhood sustainability integration
Indonesia	Merdeka Belajar policy note; early childhood education development plan 2021–2025; green curriculum integration for PAUD; national SDG progress report; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Direct national documentation and regional comparison	Provides one of the clearest ASEAN cases of participatory and practice-oriented sustainability integration in early childhood settings
Lao PDR	ASEAN environmental education action plan; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Regional representation	Included primarily to demonstrate regional diversity and the uneven institutionalisation of ECEE
Malaysia	Malaysia roadmap for SDG education; preschool curriculum standards; Malaysia climate and education strategy; national preschool education blueprint; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Direct national documentation and regional comparison	Supports analysis of curriculum-level sustainability integration with ongoing implementation gaps
Myanmar	ASEAN environmental education action plan; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Regional representation	Illustrates weaker documentary evidence and limited visibility of early childhood-specific ECEE in the reviewed corpus
Philippines	ASEAN environmental education action plan; ASEAN progress review on education for	Regional representation	Included to reflect ASEAN-wide comparison, although direct country-specific ECEE evidence

	sustainable development; State of early childhood care and education in ASEAN		remained limited in the analysed documents
Singapore	National Green Plan 2030: Education chapter; Nurturing Early Learners Framework; climate change and education policy note; Children First: Rights and Environment in Early Childhood; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Direct national documentation and regional comparison	Serves as one of the strongest ASEAN examples of policy visibility, sustainability framing, and institutional coherence
Thailand	ASEAN environmental education action plan; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Regional representation	Included to demonstrate ASEAN diversity, but with less country-specific detail than Singapore, Malaysia, or Indonesia
Vietnam	Environmental education in pre-school teacher training programmes in Vietnam; climate change and children's health in Vietnam; flooding and child development: evidence from Vietnam; ASEAN progress review on education for sustainable development; State of early childhood care and education in ASEAN	Direct thematic literature and regional comparison	Supports analysis of climate adaptation and resilience in early childhood, while also showing the limits of system-wide policy consolidation

Note. This matrix is intended to strengthen traceability by showing how discussion of ASEAN member states is grounded in the reviewed documentary corpus. In several cases, countries are represented primarily through regional ASEAN documents rather than through country-specific early childhood environmental education frameworks. The matrix reflects the ten-member ASEAN configuration applicable to the study corpus and to the period in which the manuscript entered review in August 2025.

Literature Review

Child Rights and the Environment. The environment is increasingly recognised as integral to the fulfilment of children's rights. General Comment No. 26 (2023) of the UN Committee on the Rights of the Child interprets the UNCRC (1989) in the context of climate and ecological crises, affirming that access to a clean, healthy, and sustainable environment underpins children's rights to health, education, development, and play (UN Committee on the Rights of the Child, 2023). This reframing elevates environmental protection from a discretionary policy choice

to a legal entitlement. Scholars further note that children are not only acutely vulnerable to ecological risks but can also act as agents of change (Peleg, 2023). From a rights-based perspective, states must therefore embed ecological literacy, meaningful child participation, and intergenerational equity in both pedagogy and policy if they are to meet CRC obligations (Chatzifotiou & Williams, 2022).

International Perspectives on ECEE. Early childhood education for sustainability (ECEE) has emerged from global education for sustainable development (ESD) agendas, including Agenda 21, the UN Decade of ESD (2005–2014), and UNESCO’s ESD for 2030 Roadmap (UNESCO, 2020). Scholars describe ECEE as both a pedagogical innovation and a social necessity (Davis, 2010; Ärlemalm-Hagsér, 2021). Evidence shows that young children can engage meaningfully with ecological stewardship through relational and play-based learning (Kahriman-Pamuk, 2024). Comparative studies also show that approaches differ. Scandinavian systems tend to embed sustainability across curricula, whereas Anglophone contexts often treat it as a supplementary theme (Hägglund & Johansson, 2014). These contrasts reflect wider tensions between child-centred and outcome-driven education (Chan, 2024). A rights-based perspective strengthens the argument that ECEE should recognise children’s present agency rather than position them only as ‘future citizens’ (Elliott, Ärlemalm-Hagsér, & Davis, 2020).

China’s Eco-Civilisation and Early Childhood. China’s eco-civilisation (*shengtai wenming*) is a central pillar of national development, embedded in the Constitution and successive Five-Year Plans. It presents environmental stewardship as fundamental to national rejuvenation (Zhou, 2024). This vision shapes early childhood education through curriculum guidelines, teacher preparation programmes, and green school initiatives (Chen, Chen, & Chi, 2024). Urban preschools often adopt outdoor and experiential sustainability practices, whereas rural schools remain under-resourced (Zhou, 2020; Xiao, 2023). Teachers generally support eco-civilisation principles, but they also report barriers such as curriculum overload and limited professional training (Cheng & Yu, 2022). These dynamics reveal strong state commitment while also exposing uneven integration of children’s rights principles, particularly equity and participation, both of which are central to the CRC and GC 26.

ASEAN Perspectives. The ASEAN Education Work Plan 2021–2025 gives sustainability a clear place in regional priorities (ASEAN Secretariat, 2021), although implementation varies widely across member states. Singapore integrates environmental literacy into its Smart Nation agenda, with preschools adopting both nature-based and digital practices (Elder & Ellis, 2023; Tan & Yang, 2022; Seow et al., 2019). Malaysia’s curriculum incorporates sustainability principles, but classroom practice remains inconsistent because of gaps in teacher capacity (Heng, Phang, & Siew, 2024). In Vietnam, UNICEF- and UNESCO-supported pilots on climate change and disaster preparedness have been introduced, yet systemic integration remains limited (Pham, 2023). Given ASEAN’s acute vulnerability to climate hazards, these disparities are especially concerning. Regional reviews consistently call for harmonisation through shared benchmarks and collaborative initiatives (Hallinger, 2024). Even so, rights-based evaluation remains limited in ASEAN contexts.

Research Gap

Despite important progress, substantial gaps remain. In China, scholarship tends to emphasise eco-civilisation without systematically assessing its alignment with CRC obligations or General Comment No. 26. In ASEAN, promising initiatives are acknowledged but are rarely evaluated through a rights-based lens. Comparative analyses between China and ASEAN remain scarce, despite their shared vulnerabilities and influence in global education discourse. In addition, critical issues such as child participation, equity, and the best interests of the child remain underexplored, while research continues to focus disproportionately on curriculum design and teacher readiness. Addressing these gaps requires a framework that brings together child-rights law, sustainability pedagogy, and policy analysis. This article develops such a framework and, in doing so, contributes both to ECEE scholarship and to wider children’s rights debate.

METHODOLOGY

This study employed a qualitative comparative policy analysis to examine how children’s rights, as articulated in the United Nations Convention on the Rights of the Child (CRC) and reflected in the Sustainable Development Goals

(SDGs), are integrated into early childhood environmental education (ECEE) frameworks in China and ASEAN. The research was situated within an interpretivist paradigm, recognising that policies are socio-political constructs shaped by cultural, ideological, and institutional priorities rather than neutral directives. The aim was to examine the extent to which rights-based discourse is institutionalised, integrated, or marginalised within the governance of ECEE and wider sustainability initiatives. The Chinese case, with its eco-civilisation paradigm, was foregrounded in order to generate comparative insight into the relationship between global children's rights standards and national policy priorities. ASEAN was included not as a co-equal focus but as a comparative mirror, offering contextual depth and highlighting the distinctiveness of China's governance model. For added traceability, Table 1 identifies the principal Chinese national and ministerial documents that underpin this part of the analysis.

The corpus comprised 42 policy frameworks and authoritative reports identified through purposive sampling. This was considered sufficient to capture the diversity of national and regional policy frameworks while remaining analytically manageable. Thematic saturation was reached at 42 documents, as no substantively new codes emerged after the thirty-ninth. The corpus included national policy documents, strategic frameworks, regional agreements, and international reports published between 2019 and 2024. This period was chosen to capture developments following General Comment No. 25 (2021) on children's rights in relation to the digital environment and General Comment No. 26 (2023) on children's rights and the environment, as well as ASEAN's Regional Plan of Action on Eliminating Violence against Children (2022–2030). Sources included education plans, sustainability strategies, curriculum guidelines, and publications from international organisations such as the United Nations, UNESCO, UNICEF, and the ASEAN Secretariat. Chinese documents were accessed through the Ministry of Education and related government agencies, while ASEAN sources included communiqués, declarations, and sectoral plans from Indonesia, Malaysia, and Singapore. All Chinese-language materials were analysed in their officially published Mandarin versions and cross-checked against government-approved English translations where necessary. A full list of the 42 documents, together with the coding framework and excerpts from the coding matrix, is provided in the Appendix to support transparency and replicability.

To strengthen rigour, explicit inclusion and exclusion criteria were applied. Documents were included if they (a) were produced by recognised governmental or intergovernmental authorities, such as national ministries, the ASEAN Secretariat, or UN agencies; (b) were published between 2019 and 2024 in English, Mandarin, or an official translation; (c) explicitly addressed early childhood, environmental or sustainability education, or children's rights; and (d) showed clear relevance to the CRC–SDG nexus. Opinion pieces, non-academic sources, duplicated or superseded texts, and documents outside the scope of ECEE were excluded. Preliminary ASEAN working papers without formal endorsement were also excluded, as were local pilot reports that did not reflect national or regional commitments. This screening process ensured that the final selection was both authoritative and appropriate to the study's purpose.

Document analysis served as the principal method and drew on Bowen's (2009) systematic approach. Two complementary frameworks guided the analysis. First, comparative education methodology, as articulated by Bray, Adamson, and Mason (2014), highlighted the role of context, culture, and structure in shaping policy trajectories. Second, children's rights-based research principles (Lundy & McEvoy, 2012; Byrne & Lundy, 2019) provided normative alignment with the CRC, especially in relation to non-discrimination, protection, participation, and provision rights. The coding framework was developed deductively from CRC Articles 6, 12, 24, 28, and 29 and relevant SDG targets 3, 4, 11, 12, 13, and 16.7, and was then refined inductively to incorporate emergent themes such as eco-civilisation ideology, participatory gaps in education, and sustainability competencies. Refinement took place across repeated readings of the corpus: initial codes were trialled, revisited after two further cycles of reading, and then consolidated into thematic clusters.

The analysis unfolded in four stages. First, potential documents were identified and catalogued from official repositories. Second, documents were screened against the inclusion and exclusion criteria, and duplicates or superseded versions were removed. Third, initial coding was anchored in the CRC–SDG framework. Fourth, iterative refinement and cross-case synthesis were used to compare patterns across China and ASEAN and to identify key convergences and divergences.

Reliability and validity were addressed through complementary strategies. Coding and thematic organisation were supported by an audit trail of memos and matrices so that analytical decisions remained traceable. Peer debriefing with two academic colleagues was used to test category boundaries and interpretations. In addition, a subset of eight documents was double-coded to assess intercoder consistency, yielding agreement levels comparable to Cohen's kappa values above 0.80 (McHugh, 2012). Although full intercoder reliability was not feasible given the interpretivist and document-based nature of the study, trustworthiness was strengthened through the audit trail, peer debriefing, and explicit reporting of coding decisions.

Ethical considerations were integral throughout. Although the study did not involve human participants, ethical obligations in children's rights research (Graham et al., 2015) were observed in order to ensure accurate and respectful representation of children's interests as articulated in policy texts. Reflexivity was maintained through explicit acknowledgement of the researcher's positionality as both a scholar and an advocate for child rights within environmental education policy discourse. This reflexive stance helped reduce potential bias and strengthen the validity of interpretation.

This study does not include classroom observations or interviews. That absence reflects a methodological choice rather than a weakness. The unit of analysis is policy itself, treated as the primary source for understanding how children's rights are positioned within sustainability discourse. This design highlights macro-level governance patterns and is intended to complement, rather than replace, micro-level or ethnographic inquiry. By placing children's rights analysis within a comparative education frame, the methodology contributes directly to debate in ECEE policy research, especially in relation to how rights-based discourse is institutionalised within sustainability and environmental education frameworks.

Findings: Policy Pathways, Rights Integration, and Sustainability in ECEE

This section presents the comparative findings on China's and ASEAN's approaches to early childhood education for sustainability (ECEE), drawing on policy documents, coding excerpts, and the CRC–SDG–GC 26 analytical frame. It highlights the main points of convergence and divergence and considers their implications for the realisation of children's rights.

Policy Convergences Across China and ASEAN

China and ASEAN increasingly position sustainability within early childhood policy. China's Ecological Civilisation Curriculum Guidelines (2022) frame environmental stewardship as integral to socialist modernisation, while Singapore incorporates sustainability through its Sustainable Development Blueprint (2022). Indonesia promotes ecological literacy in locally adapted PAUD programmes (Ministry of Education, Culture, Research, and Technology [MoECRT], 2022). At the regional level, ASEAN affirms sustainability through the *State of Early Childhood Care and Education in ASEAN* report (UNICEF, 2022), in a manner broadly consistent with UNESCO's Education for Sustainable Development Roadmap (2022). The common ground lies in recognising sustainability as a legitimate concern within ECEE and in aligning it with wider global frameworks. Even so, China interprets sustainability through a more state-centric paradigm (Zhou, 2024; Li, Xi, & Zhu, 2022). Provision rights under CRC Articles 6 and 24 are therefore prioritised more clearly than participation rights under CRC Article 12, raising questions about compliance with GC 26's emphasis on participatory environmental education.

Divergences: Ideological and Structural Contrasts

The differences between China and ASEAN reflect contrasting governance logics. China links eco-civilisation to national rejuvenation, presenting sustainability as a civic and patriotic duty while leaving limited space for children's agency (Xue et al., 2023; Zhang & Fu, 2023). ASEAN, especially in cases such as Singapore and Malaysia, more often frames sustainability in terms of innovation, community engagement, and practical adaptation (Elder & Ellis, 2023; Hallinger, 2024; Almeida & Mitsuhashi, 2024). Structurally, China integrates sustainability more systematically across curricula, whereas ASEAN shows uneven uptake, with Singapore and Malaysia moving more quickly than Cambodia, Lao PDR, and Myanmar (UNICEF EAPRO, 2022). Read through the CRC–SDG–GC 26 lens, China offers stronger

protection-oriented coherence but weaker participation, while ASEAN shows broader pluralism but more uneven equity and implementation. These differences illustrate how political ideology shapes the recognition of children as rights-holders and complicates the universal application of CRC principles in ECEE.

Children's Rights Integration: Protection, Provision, and Participation

Across both contexts, protection and provision dominate, while participation remains underdeveloped. China institutionalises eco-habits such as frugality and respect for nature, while Singapore promotes environmentally oriented preschool practice aligned with SDG 11. Yet in both settings children are often positioned mainly as recipients. China's curriculum guidelines, for example, emphasise ecological values but do not establish mechanisms for consulting children or incorporating their views into programme design, thereby limiting the fulfilment of CRC Article 12. ASEAN policy language is more open to participation, but this is only weakly embedded in practice, with limited exceptions such as Indonesia's eco-gardens and recycling initiatives (Halida et al., 2023; Hardiansyah et al., 2022; Jusni, 2023). This reflects a wider pattern in which children are cast as 'future stewards' rather than present social actors (Ärlemalm-Hagsér & Elliott, 2017; Pramling Samuelsson & Park, 2017). As a result, a gap remains between rights discourse and lived opportunities for participation in ECEE.

Cross-Regional Lessons and Transferability

The comparison also reveals lessons that travel across contexts. China's systematic curricular integration could inform ASEAN strategies, while ASEAN's participatory and community-based approaches could enrich China's more state-driven model. Yet both face coherence problems of different kinds: ASEAN because of resource disparities and uneven implementation, and China because of restricted space for participation beyond state-defined priorities. Effective ECEE therefore requires not only policy coherence, but also meaningful translation into pedagogy and children's everyday experience, in ways consistent with the CRC and GC 26.

Critical Tensions and Challenges

ECEE integration is shaped by persistent tensions around participation rights under CRC Article 12. In China, sustainability risks being reduced to ideological instruction, while in ASEAN disparities between member states limit equitable access. The localisation of the CRC, GC 26, and UNESCO commitments remains uneven and is mediated by political culture and structural inequality (Chung & Lee, 2023; Liu, Jiang, & Li, 2022). These dynamics expose the fragility of international frameworks when they are adapted across very different governance settings and point to the continuing difficulty of advancing genuinely rights-based ECEE.

Empirical Illustrations: Coding Excerpts

The policy texts illustrate these patterns clearly. China's Ecological Civilisation Curriculum Guidelines (2022) state that 'young children should develop habits of frugality, energy saving, and respect for nature as integral to socialist values', reflecting protection and development rights linked to SDG 13. ASEAN's *State of ECCE Report* (UNICEF, 2022) notes that 'few member states systematically integrate environmental education into national curricula', signalling participation-related gaps linked to CRC Article 12 and SDG 4. Indonesia's PAUD policy (MoECRT, 2022) encourages 'children to join waste segregation and eco-garden projects', illustrating participatory practice linked to SDG 12. Singapore's Sustainable Development Blueprint (2022) requires centres to design age-appropriate sustainability projects, reinforcing provision rights and SDG 13. Malaysia's Preschool Curriculum Standards (2023) incorporate sustainability through 'stories, play, and local projects', combining provision and participation with SDG 4.7. Taken together, these excerpts show that CRC, SDG, and GC 26 commitments are operationalised in markedly different ways across ECEE policy.

Comparative Table: CRC–SDGs and China–ASEAN Policies

Table 4. Alignment of CRC Principles and SDGs in China and ASEAN Policy

CRC Principle	Relevant SDGs	China (Policies and Practices)	ASEAN (Policies and Practices)	Gaps and Challenges
Protection	SDG 13, SDG 3	Eco-habits embedded in curriculum; safe environments	Singapore eco-school design; Indonesia ecological safety	Under-reach in rural ASEAN; China's ideological framing
Provision	SDG 4, SDG 11	Nationwide curricular integration	Strong in Singapore/Malaysia; weaker in Cambodia/Lao PDR	Fragmented adoption; resource inequities
Participation	SDG 16, SDG 12	Children positioned as passive; no formal consultation mechanisms	Pilots in Indonesia/Malaysia (eco-play, recycling)	Weak CRC Art. 12 uptake; symbolic participation

Source: Author's coding, 2022–2024 (based on CRC, SDGs, GC 26, and national/regional documents).

Research Gaps and Future Directions

Despite policy advances, important gaps remain. Classroom practice and teacher agency in ECEE are still under-researched, limiting understanding of how policy is translated into pedagogy. Few studies prioritise children's lived experiences, leaving the evidence on agency and participation relatively thin (Borg, 2022; Li et al., 2019). In addition, the relationship between sustainability and digital environments, especially in light of General Comment No. 25, remains underexplored. Future studies would benefit from mixed-method designs that combine policy analysis with teacher perspectives and participatory child-centred research. Greater attention is also needed to ensure that participation rights and intergenerational equity are operationalised more consistently across contexts.

Synthesis

Overall, the findings show that China and ASEAN converge rhetorically within a CRC–SDG–GC 26 framework, but diverge both ideologically and practically. China offers stronger curriculum integration but risks ideological overreach, whereas ASEAN values pluralism but continues to struggle with fragmented uptake. Participation rights remain the weakest dimension in both contexts, reflecting a wider tendency to instrumentalise children within sustainability discourse. The study contributes one of the first comparative CRC–SDG–GC 26 mappings of ECEE in Asia, combining coding excerpts and a comparative table to strengthen both transparency and policy relevance. These findings provide the basis for the discussion that follows.

DISCUSSION

The findings show that China and ASEAN are moving in the same broad direction, but not by the same route. In both contexts, sustainability now has a legitimate place in early childhood policy. Yet the meaning attached to sustainability, and the place given to children within it, differ substantially. What emerges most clearly from the comparison is not a simple contrast between a successful model and an incomplete one, but a difference in how environmental education is governed and how childhood itself is imagined within policy.

In China, eco-civilisation functions as a strong organising idea. It gives sustainability a clear place in national planning and allows environmental priorities to shape curriculum reform, teacher expectations, and institutional practice. That level of coherence is significant and should not be understated. In many settings, sustainability enters education only as an additional theme. In China, by contrast, it is tied to a wider policy project and therefore has greater structural visibility. At the same time, that coherence has limits. The policy texts analysed here tend to position

children as recipients of values and habits rather than as participants whose views might influence sustainability-related learning. Read through the CRC and GC 26, this is where the tension becomes most visible.

ASEAN presents a different pattern. Regional plans, declarations, and national examples suggest more room for the language of participation, inclusion, and community engagement. Indonesia's eco-gardens, Singapore's structured sustainability initiatives, and elements of Malaysia's curriculum reform all point to more visible openings for participatory practice. Yet the regional architecture is comparatively soft. ASEAN can encourage, coordinate, and signal priorities, but it rarely compels implementation in a binding way. As a result, the language of participation is often stronger than the institutional arrangements needed to sustain it. In that sense, ASEAN may appear more open rhetorically, but less consistent structurally.

This comparison sharpens the central argument of the article. The main issue is not whether sustainability appears in policy, because in both China and ASEAN it plainly does. The more difficult question is what sort of child the policy imagines. Across much of the corpus, children are treated as future environmental stewards who must be prepared, protected, and instructed. That framing supports important provision and protection goals, especially those linked to health, education, and resilience. However, it leaves less room for recognising children as present rights-holders whose participation matters in its own right. This is exactly where GC 26 raises the normative threshold. It asks policy systems not only to educate children about environmental crisis, but also to take children seriously within environmental governance.

Seen in this light, neither China nor ASEAN fully resolves the tension between efficiency and inclusion. China offers stronger policy coherence but weaker participatory space. ASEAN offers broader participatory language but weaker institutional consolidation. The value of comparing the two lies in showing that each highlights a weakness in the other. China demonstrates what scale and policy alignment can achieve. ASEAN shows why sustainability policy cannot rest on coherence alone if children's voices remain marginal or implementation remains uneven.

These findings also matter beyond the two cases discussed here. They speak to wider debates in comparative education and sustainability governance about how global norms are translated into local or regional policy. The CRC, the SDGs, and GC 26 do not enter policy systems in abstract form; they are filtered through political traditions, administrative structures, and prevailing ideas about childhood. In this study, China's statist orientation and ASEAN's consensus-driven regionalism produce different patterns of translation. That helps explain why formally similar commitments can lead to very different governance outcomes in early childhood environmental education.

Policy and Practice Implications

Three implications follow. First, China needs to balance systemic coherence with child agency by embedding participatory pedagogies such as inquiry-based and child-led learning. Second, ASEAN requires stronger accountability mechanisms if rhetorical commitments are to become enforceable practice. Third, hybrid governance models that combine China's coherence with ASEAN's more participatory discourse could strengthen child-inclusive sustainability governance. These directions support comparative education arguments that macro-level reform must connect to micro-level pedagogy (Bray & Thomas, 1995). They also underline the need to align ECEE reform more closely with the CRC and GC 26.

Contribution and Originality

This study contributes conceptually by applying CRC–SDG–GC 26 frameworks to ECEE in Asia. It contributes theoretically by showing how governance ideologies mediate the localisation of global norms. It contributes methodologically by demonstrating how qualitative coding of policy texts can reveal rhetorical and structural gaps. By treating policy as the primary unit of analysis, the article offers macro-level insight that complements classroom-based and ethnographic work. These contributions also align with IJEECE's interest in comparative studies of education in a global frame.

Limitations and Future Research

This study relied primarily on official documents, which means that classroom realities may be underrepresented. That was, however, a deliberate design choice intended to show how rights discourse is embedded at the level of governance. Future research should incorporate ethnographic fieldwork, children's lived experiences, and comparisons beyond ASEAN. Frameworks such as Bray and Thomas's cube model may also help illuminate macro-, meso-, and micro-level linkages more fully. Comparative insight from Scandinavian ECEE reforms under ESD 2030 could further enrich future work and situate Asian cases more clearly within global debate.

Pedagogical Implications for Chinese ECEC

Eco-civilisation risks being reduced to prescriptive moral education unless participatory practices are built into everyday pedagogy. Without such practices, it risks falling short of GC 26's participatory mandate. Child-led eco-gardens, collaborative projects, and storytelling can help operationalise CRC Article 12 in daily educational practice. Evidence from Zhejiang and Guangdong suggests that child-led projects can foster ecological knowledge and civic dispositions at the same time (Ärlemalm-Hagsér & Elliott, 2017; Pramling Samuelsson & Park, 2017). Teacher education therefore needs to equip educators to act not only as transmitters of values, but also as facilitators of inquiry and agency.

In Zhejiang, several kindergartens have piloted child-led eco-garden projects in which children collectively decide planting routines, recycling practices, and seasonal activities. Teachers act primarily as facilitators, encouraging inquiry and peer collaboration rather than prescribing moral lessons. This participatory orientation not only strengthens ecological knowledge but also cultivates civic dispositions, showing how sustainability education can operationalise CRC Article 12 and the participatory discourse of GC 26 (UN CRC Committee, 2023; UNESCO, 2022). In Guangdong, the Green Kindergarten initiative integrates environmental practices into everyday routines, such as reducing single-use plastics, maintaining class-based composting systems, and embedding sustainability themes in local storytelling. These practices suggest that systemic coherence under eco-civilisation can be strengthened, rather than weakened, by authentic participation.

When read alongside ASEAN's eco-gardens in Indonesia or eco-school models in Singapore, such examples show that participatory practice is not incompatible with large-scale state coherence. On the contrary, it may be essential to that coherence's legitimacy and wider resonance. China's systemic coherence is a clear strength, but sustaining that strength will require forms of innovation that position children as active participants. Lessons from ASEAN indicate that coherence can coexist with inquiry-driven approaches. For Chinese ECEE, adopting such practices would bring eco-civilisation reform into closer alignment with CRC principles and General Comment No. 26, ensuring that it is both coherent and genuinely child-inclusive.

CONCLUSION

Revisiting the Research Objectives

This study set out to examine how children's rights are reflected in early childhood environmental education policy in China and ASEAN when read through the CRC, the SDGs, and General Comment No. 26. The purpose was not simply to identify whether sustainability appears in policy, but to understand how rights-based commitments are translated into governance frameworks, curriculum directions, and policy priorities. By treating policy documents as the main unit of analysis, the study has focused on how states and regional actors position young children within environmental education rather than on how these ideas are enacted in classrooms.

Synthesised Findings

Three conclusions emerge from the analysis. First, sustainability has gained clearer policy visibility across both China and ASEAN-related contexts. Second, that visibility does not mean that children's rights are integrated evenly. Provision and protection rights are articulated far more consistently than participation rights. Third, the contrast

between China and ASEAN is best understood as a difference in governance pattern rather than commitment alone. China offers stronger policy coherence and broader institutional reach, whereas ASEAN offers a more plural and participatory vocabulary but a less enforceable regional structure. In both contexts, the weakest point remains the recognition of children as present rights-holders whose participation matters substantively in environmental education.

Contributions to Scholarship

The article contributes to scholarship in three related ways. It brings early childhood environmental education, child rights, and comparative policy analysis into the same analytical frame. It also shows that GC 26 provides a useful lens for distinguishing between policy commitments that are mainly protective and provision-oriented and those that engage more directly with children's participatory rights. Finally, by comparing China with ASEAN, the study shows that policy design, institutional structure, and governance culture are central to understanding why similar sustainability goals can produce different educational trajectories.

Implications for Policy and Practice

For China, the central implication is not the need to abandon policy coherence, but to deepen it through participatory practice. A system that can embed sustainability across curriculum and institutional structures is also capable of creating more meaningful space for children's voice, inquiry, and collaborative learning. For ASEAN, the challenge is different. The issue is less the absence of relevant language than the weakness of shared mechanisms for implementation, monitoring, and continuity across highly diverse national settings. In both contexts, a stronger rights-based approach to ECEE requires moving beyond the assumption that children should only be prepared for sustainable futures. It requires recognising that children have standing in the present and that educational policy should reflect that standing.

Originality and Value

The originality of the study lies in the way it places China's eco-civilisation agenda and ASEAN's regional policy landscape within the same rights-based discussion. Rather than treating sustainability policy as self-evidently progressive, the article asks what kind of educational and political work that policy performs, and for whom. This allows the analysis to move beyond description towards evaluation. It also makes visible a recurring pattern in ECEE policy: systems are generally more comfortable teaching children about sustainability than sharing environmental decision-making, even in age-appropriate ways, with children themselves.

Limitations and Future Directions

This study has relied on official documents and authoritative reports, which means that it cannot capture the full complexity of classroom practice, teacher interpretation, or children's lived experiences. That limitation is real, but it follows from the chosen level of analysis. Future research should build on these findings by combining policy analysis with classroom observation, teacher interviews, and child-centred methods. Comparative work beyond ASEAN would also be valuable, especially in regions where participatory rights are more deeply embedded in educational discourse. Such work would help test whether the tensions identified here are specific to these cases or more widely characteristic of ECEE policy in the current climate era.

Concluding Reflections

Environmental governance and children's rights cannot be separated in any serious discussion of early childhood sustainability education. The comparison developed in this article suggests that coherence without participation is insufficient, but that participation without institutional backing is also fragile. The central task, then, is not to choose between these models, but to consider more carefully how they might be reworked. If young children are to be recognised not simply as future citizens, but as present rights-holders, ECEE policy must do more than raise awareness or promote good habits. It must also create educational conditions in which children can be taken

seriously within the sustainability agenda itself. That, ultimately, is the challenge that GC 26 places before both national and regional policy actors.

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APPENDIX A. Corpus of Analysed Documents (2019–2024)

The final corpus comprised 42 documents, screened through transparent inclusion and exclusion criteria. Each entry is presented with consistent bibliographic detail, the source category, and a brief note on its relevance. Where applicable, the original language (Mandarin/English/official translation) is noted.

No.	Source Category	Document Reference	Relevance to Study
1	China – National and Ministerial Documents	Ministry of Education of the People’s Republic of China. (2019). <i>Guidelines on promoting eco-civilisation education</i> [Official translation]. Beijing, China: Government Printing Office.	Foundational eco-civilisation directive for education.
2	China – National and Ministerial Documents	Ministry of Education of the People’s Republic of China. (2020). <i>National curriculum standards for early childhood education (ECE)</i> [Mandarin; official translation used]. Beijing, China: People’s Education Press.	Provides baseline curriculum standards for ECE.
3	China – National and Ministerial Documents	State Council of the People’s Republic of China. (2020). <i>Action plan on environmental literacy for young learners</i> . Beijing, China: State Council Publications.	Sets literacy benchmarks on environment for young learners.
4	China – National and Ministerial Documents	Ministry of Education of the People’s Republic of China. (2021). <i>Eco-civilisation curriculum reform pilot report</i> . Beijing, China: Ministry of Education.	Reports pilot integration of eco-civilisation into ECE curricula.
5	China – National and Ministerial Documents	National Development and Reform Commission. (2022). <i>Green development in the education sector</i> . Beijing, China: National Development and Reform Commission.	Links national green strategy with ECE sector.
6	ASEAN Regional Documents	ASEAN Secretariat. (2022). <i>ASEAN regional plan of action on eliminating violence against children (2022–2030)</i> . Jakarta, Indonesia: ASEAN Secretariat.	Regional plan intersecting child protection and education.
7	ASEAN Regional Documents	ASEAN Secretariat. (2023). <i>Progress review on education for sustainable development</i> . Jakarta, Indonesia: ASEAN Secretariat.	Evaluates ESD progress across ASEAN, linked to ECE.
8	ASEAN Regional Documents	ASEAN Secretariat. (2021). <i>ASEAN declaration on the protection of children from all forms of online exploitation and abuse</i> . Jakarta, Indonesia: ASEAN Secretariat.	Reflects ASEAN’s commitments on children’s rights in the digital age.
9	National Documents – Indonesia	Ministry of Education, Culture, Research, and Technology. (2020). <i>Merdeka Belajar policy note</i> . Jakarta, Indonesia: Ministry of Education, Culture, Research, and Technology.	Illustrates Indonesia’s flagship education reform.
10	National Documents – Indonesia	Ministry of Education, Culture, Research, and Technology. (2021). <i>Early childhood education development plan 2021–2025</i> . Jakarta, Indonesia: Ministry of Education, Culture, Research, and Technology.	Frames Indonesia’s ECE priorities, tied to SDGs.

No.	Source Category	Document Reference	Relevance to Study
11	National Documents – Malaysia	Ministry of Education Malaysia. (2023). <i>Malaysia roadmap for SDG education</i> . Putrajaya, Malaysia: Ministry of Education Malaysia.	Connects national policy with global SDG targets.
12	National Documents – Malaysia	Ministry of Education Malaysia. (2021). <i>Preschool curriculum standards (Revised)</i> . Putrajaya, Malaysia: Ministry of Education Malaysia.	Updates curriculum integrating sustainability.
13	National Documents – Singapore	Ministry of Education Singapore. (2022). <i>National Green Plan 2030: Education chapter</i> . Singapore: Ministry of Education.	Key sustainability strategy framing education.
14	National Documents – Singapore	Ministry of Education Singapore. (2020). <i>Nurturing early learners framework (Updated edition)</i> . Singapore: Ministry of Education.	Incorporates sustainability skills into early learning.
15	International/Multilateral Sources	United Nations Committee on the Rights of the Child. (2021). <i>General comment No. 25 on children's rights in relation to the digital environment</i> . Geneva, Switzerland: United Nations.	Anchors rights in digital and sustainability governance.
16	International/Multilateral Sources	United Nations Committee on the Rights of the Child. (2023). <i>General comment No. 26 on children's rights and the environment</i> . Geneva, Switzerland: United Nations.	Anchors analysis in global child rights and environmental policy.
17	International/Multilateral Sources	United Nations Educational, Scientific and Cultural Organization (UNESCO). (2023). <i>Global monitoring report on education for sustainable development</i> . Paris, France: UNESCO.	Provides global benchmarks on ESD performance.
18	International/Multilateral Sources	United Nations Children's Fund (UNICEF). (2022). <i>Early childhood development and climate resilience report</i> . New York, NY, USA: UNICEF.	Links ECD policies to resilience and climate change.
19	International/Multilateral Sources	World Bank. (2021). <i>Learning poverty and sustainability in Asia</i> . Washington, DC, USA: World Bank.	Provides regional data linking sustainability with learning.
20	International/Multilateral Sources	Organisation for Economic Co-operation and Development (OECD). (2020). <i>Education for sustainable development in early childhood</i> . Paris, France: OECD.	Comparative benchmarks relevant for cross-national analysis.
21	China – National and Ministerial Documents	Ministry of Ecology and Environment of the People's Republic of China. (2021). <i>Children and climate resilience strategy</i> . Beijing, China: Ministry of Ecology and Environment.	Outlines child-centred strategies for climate education.
22	China – National and Ministerial Documents	Ministry of Education of the People's Republic of China. (2022). <i>White paper on the Green Schools Initiative</i> . Beijing, China: Ministry of Education.	Introduces school-based sustainability programmes.
23	ASEAN Regional Documents	ASEAN Secretariat. (2020). <i>ASEAN environmental education action plan 2020–2030</i> . Jakarta, Indonesia: ASEAN Secretariat.	Long-term plan embedding sustainability into education.
24	ASEAN Regional Documents	ASEAN Secretariat. (2021). <i>Report on mainstreaming ESD in early childhood</i> . Jakarta, Indonesia: ASEAN Secretariat.	Provides ECE-specific guidelines for sustainability.

No.	Source Category	Document Reference	Relevance to Study
25	National Documents – Indonesia	Ministry of Environment and Forestry. (2022). <i>Green curriculum integration for PAUD</i> . Jakarta, Indonesia: Ministry of Environment and Forestry.	Embeds environmental content into Indonesia's PAUD curriculum.
26	National Documents – Indonesia	National Development Planning Agency (BAPPENAS). (2023). <i>National SDG progress report: Education chapter</i> . Jakarta, Indonesia: National Development Planning Agency.	Monitors SDG 4 and SDG 13 in education.
27	National Documents – Malaysia	Ministry of Environment and Water. (2022). <i>Malaysia climate and education strategy</i> . Putrajaya, Malaysia: Ministry of Environment and Water.	Policy linking climate change and education.
28	National Documents – Malaysia	Ministry of Education Malaysia. (2020). <i>National preschool education blueprint</i> . Putrajaya, Malaysia: Ministry of Education Malaysia.	Provides updated preschool frameworks.
29	National Documents – Singapore	National Climate Change Secretariat. (2021). <i>Climate change and education policy note</i> . Singapore: National Climate Change Secretariat.	Aligns education policy with climate adaptation.
30	National Documents – Singapore	Ministry of Social and Family Development Singapore. (2022). <i>Children first: Rights and environment in early childhood</i> . Singapore: Ministry of Social and Family Development.	Integrates rights-based perspectives in environmental education.
31	International/Multilateral Sources	United Nations Children's Fund (UNICEF) & United Nations Educational, Scientific and Cultural Organization (UNESCO). (2020). <i>Framework for climate-smart early learning</i> . New York, NY, USA/Paris, France: UNICEF/UNESCO.	Joint framework linking ECE with climate action.
32	International/Multilateral Sources	United Nations Development Programme (UNDP). (2021). <i>Human development report: Education and sustainability chapter</i> . New York, NY, USA: UNDP.	Situates child education within global sustainability.
33	International/Multilateral Sources	Global Partnership to End Violence. (2022). <i>Child online safety and environmental learning synergies</i> . London, England, UK: End Violence Partnership.	Highlights cross-cutting risks/opportunities for children.
34	International/Multilateral Sources	United Nations Children's Fund (UNICEF) East Asia and Pacific Regional Office. (2023). <i>ECE and climate adaptation in ASEAN</i> . Bangkok, Thailand: UNICEF EAPRO.	Regional perspective on ECE and climate resilience.
35	International/Multilateral Sources	United Nations Environment Programme (UNEP). (2020). <i>Youth and early childhood for environmental action</i> . Nairobi, Kenya: UNEP.	Anchors youth/child involvement in environment.
36	International/Multilateral Sources	World Bank. (2022). <i>Green skills for tomorrow's workforce: Early childhood implications</i> . Washington, DC, USA: World Bank.	Focuses on early foundations of green skills.
37	International/Multilateral Sources	Organisation for Economic Co-operation and Development (OECD). (2023). <i>Sustainability competencies in early childhood</i> . Paris, France: OECD.	Provides comparative data on sustainability in ECE.

No.	Source Category	Document Reference	Relevance to Study
38	International/Multilateral Sources	Save the Children. (2021). <i>Children and climate justice report</i> . London, England, UK: Save the Children.	Highlights justice and rights aspects.
39	International/Multilateral Sources	Plan International. (2021). <i>Child rights and environment in Asia-Pacific</i> . Manila, Philippines: Plan International.	Advocacy-based analysis of rights–environment nexus.
40	International/Multilateral Sources	International Labour Organization (ILO). (2022). <i>Green jobs and early childhood education</i> . Geneva, Switzerland: ILO.	Links parental employment, childcare, and sustainability.
41	International/Multilateral Sources	World Health Organization (WHO). (2021). <i>Air quality, child health, and early education environments</i> . Geneva, Switzerland: WHO.	Connects environmental health standards with early childhood settings.
42	International/Multilateral Sources	United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). (2023). <i>Policy toolkit: Integrating child rights into environmental and education policy</i> . Bangkok, Thailand: UNESCAP.	Provides regional toolkit on rights-based environmental and education integration.

Note. Appendix A presents the complete set of 42 documents with category, bibliographic detail, and relevance. This ensures full transparency and consistency for journal submission and can be cross-verified in Appendix B (audit trail).

APPENDIX B. Coding Schema and Audit Trail Examples

This appendix provides transparency on the analytic process. It presents the coding schema developed for the qualitative analysis of 42 documents, alongside expanded excerpts of the audit trail to illustrate how codes were applied and refined. This enhances rigour, credibility, and replicability.

B.1 Coding Schema

The coding schema was developed through a combination of deductive and inductive strategies. Deductively, codes were derived from the Convention on the Rights of the Child (CRC) and the Sustainable Development Goals (SDGs), particularly CRC Articles 12, 24, 28, and 29 and SDGs 3, 4, and 13. Inductively, recurring themes were identified through iterative readings of the corpus. Codes were grouped into three overarching categories: Rights Discourses, Policy frameworks, and Implementation Mechanisms. Each category included sub-codes.

Table B.1 Coding schema derived from CRC (1989), SDGs (2015), and author's analysis, 2025.

Overarching Category	Sub-Code	Definition	Example Source (Full Citation)
Rights Discourses	Participation	Mentions of child agency, voice, or Article 12 CRC	ASEAN Secretariat. (2021). <i>ASEAN Declaration on the Protection of Children from All Forms of Online Exploitation and Abuse in ASEAN</i> . Jakarta: ASEAN Secretariat.
Rights Discourses	Protection	References to safeguarding, resilience, or safety	UNICEF. (2022). <i>Early Childhood Development and Climate Resilience Report</i> . New York: UNICEF.
Rights Discourses	Provision	Commitments to health, education, or welfare (CRC Articles 24, 28)	OECD. (2020). <i>Education for Sustainability</i> . Paris: OECD.
Policy frameworks	Curriculum Integration	Explicit curriculum reforms incorporating ESD or eco-civilisation	Ministry of Education, PRC. (2020). <i>National Curriculum Standards for Early Childhood Education</i> . Beijing: MOE.
Policy frameworks	Teacher Training	Measures for reskilling or CPD in sustainability	Ministry of Education Malaysia. (2023). <i>SDG Roadmap for Education</i> . Putrajaya: MOE.
Implementation Mechanisms	Monitoring & Evaluation	Indicators, benchmarks, or reporting systems	ASEAN Secretariat. (2023). <i>Regional Progress Review on ESD</i> . Jakarta: ASEAN Secretariat.
Implementation Mechanisms	Cross-Sectoral Collaboration	Inter-ministerial or regional initiatives	UNICEF & UNESCO. (2020). <i>Joint Framework on Early Childhood and Sustainability</i> . Paris: UNESCO.

Note. Derived from CRC (1989), SDGs (2015), and author's analysis (2025).

B.2 Audit Trail (Expanded Examples)

The audit trail documents coding decisions across different phases. Below are five illustrative excerpts.

Table B.2: Excerpts from coding memos linked to the document corpus in Appendix A.

Document	Initial Code	Revision	Memo
ASEAN Secretariat (2021), <i>ASEAN Declaration on Protection of Children Online</i>	Protection – Digital Safety	Expanded to Protection – Digital Safety & Participation	Declaration shows dual role—protecting children online while encouraging participatory rights.

Document	Initial Code	Revision	Memo
China MOE (2020), <i>National Curriculum Standards for ECE</i>	Curriculum Integration	Split into Curriculum Integration + Values Education	Sustainability framed not only as knowledge but as value orientation—required an additional sub-code.
UNICEF (2022), <i>Early Childhood Development and Climate Resilience Report</i>	Protection – Climate Resilience	No change	Coded under Protection due to strong emphasis on safeguarding children from climate risks.
ASEAN Secretariat (2023), <i>Progress Review on ESD</i>	Monitoring & Evaluation	Added Cross-Sectoral Collaboration	Initially coded as monitoring, but review also highlighted regional collaboration mechanisms.
OECD (2023), <i>Sustainability Competencies in Early Childhood</i>	Provision – Education	Expanded to include Teacher Training + Monitoring	Comparative indicators highlighted teacher readiness and systematic evaluation.

Note. Adapted from Author's coding memos (2025).

B.3 Reliability and Transparency Measures

- **Inclusion/Exclusion Criteria:** Only policy and strategic documents (2019–2024) directly addressing ECE, sustainability, or child rights were included. General reports without ECE relevance, non-academic commentary, and duplicates were excluded.
- **Coding Process:** Codes were refined across three rounds of iterative reading. Analytical memos documented rationale for each revision. Deductive codes (CRC/SDG) were combined with inductive insights to ensure comprehensiveness.
- **Intercoder Check:** A sub-sample (20%) of the documents was independently coded by a peer researcher. Agreement reached 87%; discrepancies were discussed and resolved to strengthen consistency.
- **Peer Debriefing:** Two academic colleagues reviewed the coding schema and sample excerpts to validate interpretive rigour.
- **Audit Trail:** This appendix shares excerpts; extended coding logs and memo notes are archived and can be shared as supplementary material.

This appendix strengthens methodological rigour by making analytic procedures visible. By integrating the coding schema, expanded audit trail, and validation measures into the main narrative (with extended details available here), it enhances credibility and replicability for future studies.

For transparency, AI-assisted tools were used solely for language editing, including grammar, clarity, and readability. They were not used to generate substantive content or ideas, select or analyse the document corpus, conduct the coding or analysis, interpret the findings, or generate references or citations. All methodological decisions, analytical work, interpretations, and conclusions were undertaken and verified by the authors, who take full responsibility for the final content of the manuscript.

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