



FROM THE FIRST 1000 DAYS TO A RESILIENT FUTURE

**Environmental and Climate Education for Early
Childhood in Latin America and the Caribbean**

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Environmental and Climate Education for Early Childhood in Latin America and the Caribbean

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FOREWORD

Latin America and the Caribbean is one of the most vulnerable regions to the impacts of climate change. Within this vast geographic area, more than 169 million children live in areas exposed to, at least, two climate or environmental shocks per year.

Such hazards include hurricanes, heat waves, water shortages, air pollution and vector-borne diseases. Each year, extreme climate events are becoming more recurrent and intense than in previous years, with a devastating effect on the lives of millions of young children in the region.

The climate crisis before us is, above all, a crisis of children's fundamental rights. In this context, the most vulnerable and priority group is early childhood, primarily those in their first 1000 days of life. Alarming, 90 per cent of vector-borne diseases attributable to climate change affect children under the age of five. The climate crisis undermines the necessary stability and predictability for children to explore the world around them, experience the safety of meaningful bonds with their caregivers, and access vital opportunities for their comprehensive development.

We understand that early childhood represents a unique window of opportunity in every individual's life. During this stage, multiple brain connections are established at a speed unmatched by later stages, its development will depend largely on the opportunities provided by children's environment. Building a solid foundation during this phase is crucial to promoting young children's health, general well-being and learning capacity, which in turn has a significant impact on their life trajectories and society as a whole.

Moreover, investments in child-focused policies and programmes can generate a substantial impact in the earliest years of life, accelerating the attainment of the Sustainable Development Goals and improving climate change adaptability and resilience of young children and their families.

The document marks a major step towards achieving these objectives by promoting the inclusion of early childhood in national education programmes and strategies for sustainable development and addressing climate change. It outlines the social, economic and environmental challenges that arise from the intersection between climate change and early childhood development. In addition, it highlights the transformative impact of investments in early childhood policies and programmes by helping to build resilient communities and promote long-term systemic change. Finally, the document reviews examples of education policies and programmes in the region that incorporate environmental and climate change issues into their curricula.

The compendium will hopefully contribute to raising visibility for children in the context of climate change, while also providing tangible elements for their inclusion in educational programmes. Progress is only possible if we place all those who are most affected by this crisis at the centre of our concerns.



Garry Conille
UNICEF Regional Director for
Latin America and the Caribbean



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EXECUTIVE OVERVIEW

Early learning about the environment and climate change as an effective and transformative way to foster responsible behaviours and develop life skills.

Climate change and environmental degradation are complex challenges with social and economic implications for human development including poverty, inequality, peace and security. For children, it means a loss of the stability and predictability necessary for their development, particularly during early childhood, as they are especially vulnerable to interactions with their surroundings and the conditions of the environment in which they live.

When children in early childhood do not receive the necessary care, attention and protection or are exposed to stressful or emergency situations, their holistic development is compromised and their future opportunities in terms of educational trajectory, long-term health problems and well-being are affected.

Early childhood is a period from gestation to 8 years of age, although neuroscience has emphasised the importance of the first 1000 days as the ‘critical period’, as this is when neural connections in the brain occur at a rate that will not be repeated in a lifetime. During this period, there is a continuous development of cognitive, linguistic, motor, social and emotional skills, which are fundamental to thinking, problem solving, communication, emotional expression and relationships and important to survive and thrive.

Therefore, early childhood development (ECD) is the result of the interaction between the

environment and the child, where a **nurturing care environment**¹ is crucial to promote optimal development. The nurturing care conceptual framework establishes the conditions necessary for children’s health, nutrition, safety and security, care and learning opportunities from the beginning of life. It means keeping children protected, healthy and well nourished, attending and responding to their needs and interests, and encouraging them to explore their environment and interact with their caregivers and others.

Early learning opportunities are fundamental to guaranteeing that all children develop to their full potential in life. For this reason, investing in early childhood policies, strategies and programmes is a ‘smart investment’ as it has a rate of return that may be around 13.7 per cent.² Early childhood development has the potential for climate change adaptation, resilience and sustainable development, given its holistic and cross-cutting nature.

Policies and programmes focused on the early years-when appropriately funded, are of high quality, equitably distributed, applied across the appropriate lifespan, and aligned with sustainable development principles-have a triple dividend: they promote climate resilience and adaptive capacity, protect individual potential, foster human development, and drive sustainable development.³

¹ Refers to “Nurturing Care Framework” in WHO, UNICEF, WBG, 2018.

² García, 2016.

³ ARNEC, 2022.

As a result, the following conclusions and recommendations were made:

- Place children, especially early childhood, at the centre of climate action and environmental protection. International agreements and funds, international commitments such as nationally determined contributions, national adaptation programmes of action, as well as national, regional and local policies, practices and financing, must be aligned to protect the most vulnerable children from the impacts of climate change and to promote adaptation, mitigation and loss and damage reduction actions with explicit attention to early childhood.
- The differentiated needs of early childhood children, as compared to older children, must be highlighted and the stages of development within the early childhood period from 0-8 years (gestation, 0-3 years (1.000 days), pre-primary (3-5/6 years) and early primary years) must be differentiated to adequately respond to the care, protection and stimulation needs at each stage.
- Children of all ages must be seen as agents of change and their participation is valuable in responding to climate impacts and



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Guatemala, 2022

environmental degradation. Investment in their learning and knowledge processes needs to be nurtured and supported to build capacities for life and a strong sense of individual and collective participation to face present and future challenges.

- Increased early childhood funding is required through multi-sectoral collaboration in order for funding and service delivery to be better coordinated and provide timely responses to contextual needs and uncertainty, as well as to anticipate future needs or challenges.
- Generating data to understand and document the impacts of climate change and environmental degradation on early childhood is required to support evidence based ECD policies and programmes.
- Early childhood care and education programmes (0 to entry to primary school) play a strategic role in the fight against climate change and the protection of the environment. Educators, parents and caregivers have a crucial role in supporting learning that promotes harmonious coexistence with nature.
- Integrate climate change into early childhood education curricula. To date, only three countries in the region include some curricular content on climate change at the initial level.
- Broaden partnerships between ministries of environment and ministries of education. Encourage further expansion

and promotion of partnerships between ministries of environment and ministries of education to explore opportunities to create innovative teaching and learning materials for educators.

- Promote more territorial decentralisation of environmental and climate tools for early childhood education. It is recommended to encourage more state or municipal authorities to develop their own teaching.
- Strengthen environmental teaching tools for early childhood education teachers. There is an opportunity to promote the development of more materials and tools focused entirely on environmental and especially climate change content.
- Strengthen academic research, especially at the level of teacher training. Coordinate initiatives with academia, especially with institutions that offer teacher training programmes, to promote further research on the environmental dimension and particularly on climate change (the least studied) at the initial level.



1. Introduction

The climate crisis is a children's rights crisis, the biggest challenge to the well-being and development of children around the world. Extreme weather events such as cyclones, floods and heat waves are increasing in intensity and frequency, threatening lives and destroying critical infrastructure. Children are physically, physiologically and economically more vulnerable to climatic and environmental shocks, as they cannot control the level of exposure and are less able to protect themselves from immediate hazards and are more susceptible than adults to changes in temperature. They also require more food and water per unit of body weight and breathe at twice the rate of adults, so consumption of contaminated air, water or food will have a proportionately greater impact on a child's health and well-being.⁴ As threats from climate change, environmental degradation and disasters increase, the necessary stability and predictability for children's development may be affected, especially in their first 1.000 days. Adaptation to the growing and disruptive effects is increasingly necessary.

Early childhood is the most significant developmental stage of a human being's life, as the foundations for holistic well-being, lifelong learning and social participation are laid in this crucial period.⁵ Beyond the risk posed by climate change, growing evidence recognises that policies and programmes focused on the earliest years of human development have a triple

dividend; climate resilience, adaptive capacity and serving as a catalyst for sustainable development.⁶

The present document provides a unifying framework between the social, economic and environmental challenges of climate change and early childhood development and reveals the transformative power of early childhood policies and programmes to build resilient communities and drive short- and long-term systemic changes.

The report identifies the importance of quality early childhood education as an essential part of children's development as it promotes the development of basic cognitive and language skills, and points to early learning about the environment and climate change as an effective and transformative way to foster responsible behaviours and develop life skills. It also presents a comprehensive review of environmental and climate education in national legislation, policies, curricula and pedagogical materials for teachers at the early childhood education level,⁷ in both formal and informal programmes in the Latin American and Caribbean region.

⁴ UNICEF, 2021.

⁵ UNICEF, 2017.

⁶ ARNEC, 2022.

⁷ Refers to level 0 of the International Standard Classification of Education. (CINE 0), LUIS, 2013.



2. Conceptual framework

The document is designed with a focus on **early childhood development, childcare under the nurturing care framework and early learning within the framework of education for sustainable development, in the context of climate change and environmental degradation.**

The interrelation of these elements is seen as determinants of multidimensional individual development in a crucial period of life, with transformative effect towards sustainable development and securing children's rights to survive, grow and thrive with greater resilience.

2.1. Focus on Early Childhood Development

The document focuses on early childhood since it is a crucial period that sets the foundation for children's future well-being, lifelong learning, participation and well-being in life. According to scientific evidence, during early childhood the brain develops in an extraordinary way, leading to a complex interplay of neural connections which are influenced and shaped by experiences and the environment.⁸ Such brain connections are formed at a rate that will never be repeated in a lifetime (over 1 million connections per second),⁹ and influence a child's cognitive, emotional, physical and social development.¹⁰ Such configuration occurs in a relatively short period of time, to establish the capacity to learn, adapt to change and develop **resilience**.¹¹

Early childhood is the stage from gestation to 8 years of age, although the importance of the first 1.000 days (birth to 24 months) has been emphasised. Early Childhood Development (ECD) is the continuous process of acquiring cognitive, language, motor, social and emotional development skills that help us to think, solve problems, communicate, express our emotions and form relationships. It also considers the foundations for health, learning, productivity, well-being and the building blocks for future human capital formation.¹²

For all children under 3 years old, and especially those facing adversity, this window of opportunity is critical for the years ahead.

⁸ Shonkoff, 2000.

⁹ Center on the Developing Child, 2017.

¹⁰ UNICEF, 2019.

¹¹ Resilience: the capacity of social, economic and environmental systems to cope with a hazardous phenomenon, trend or disturbance by responding or reorganizing in ways that maintain their essential function, identity and structure, while retaining the ability to adapt, learn and transform (IPPC, Annex II: Glossary) [Mach, K.J., S. Planton, and C. von Stechow (eds.)], 2014).

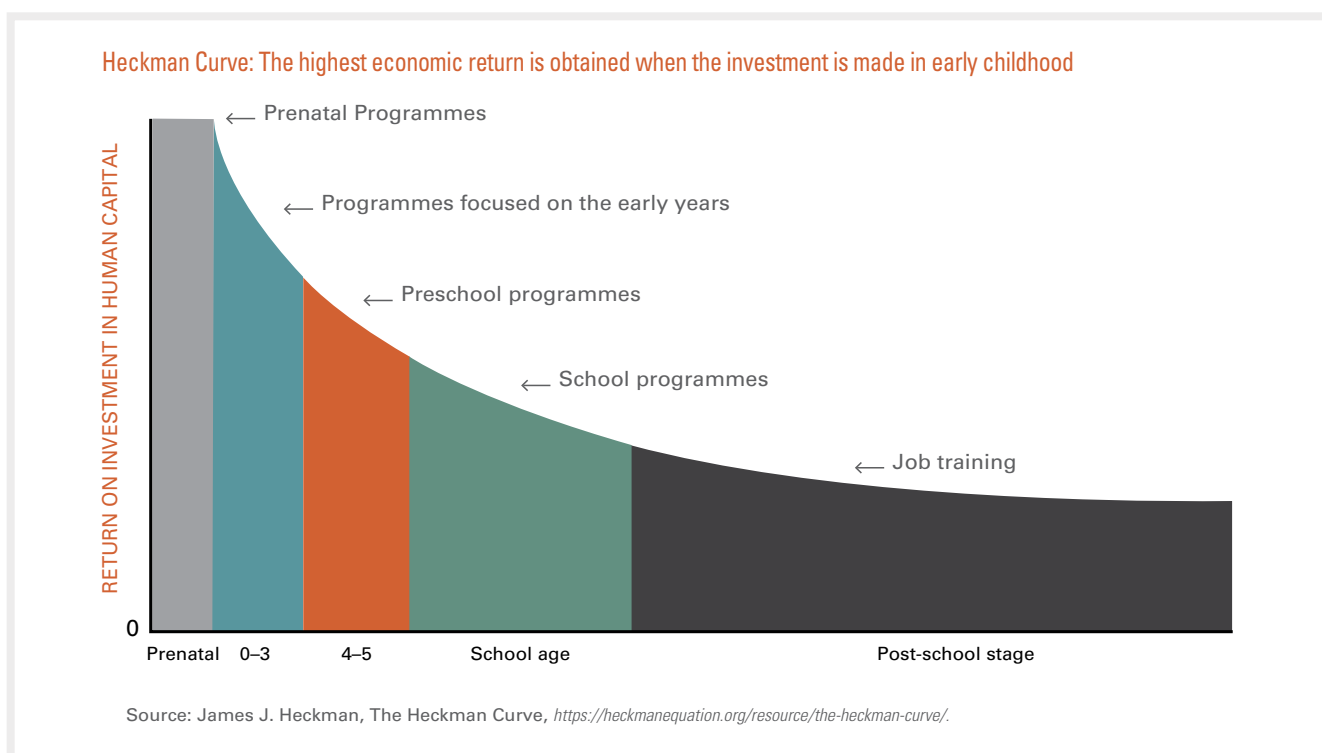
¹² UNICEF, 2017, p. 14.

Evidence from neuroscience shows that children are more likely to grow and develop to their full potential if they are well nurtured and stimulated; protected from childhood illness, violence, abuse and neglect; and have adequate opportunities for learning and nurturing care.¹³ Based on this evidence, the nurturing care framework was developed, which we discuss in the next section.

On the other side, from a cost-benefit perspective, there is broad consensus that the benefits of early childhood investments far outweigh the costs. On average, it is estimated that every additional dollar invested in quality early childhood programmes generates an economic return of \$13.70,¹⁴ and it is estimated that for every dollar

spent on pre-primary education, there are \$9 in benefits to society,¹⁵ and it increases to \$17 in the case of children in greater vulnerability.^{16,17}

Dr. Heckman's study shows that the greatest return on investment is at the earliest stage, from birth to age five. At this stage an individual's greatest productivity is shaped by the development of cognitive, motivational, self-control, social and attention skills - those that lead from knowledge to expertise and individuals to productive citizens. Investment in early childhood is efficient and effective for economic and employment development.¹⁸



¹³ UNICEF, 2019, page 9.

¹⁴ Garcia, 2016, page 1.

¹⁵ UNICEF Office Research Innocenti, 2020 y UNICEF, 2023.

¹⁶ Zubairi, 2021.

¹⁷ ARNEC, 2022.

¹⁸ Heckman, 2012.

2. Conceptual framework

Early childhood is part of the 2030 transformative agenda. The Sustainable Development Goals (SDGs) provide an opportunity to link early childhood development with actions to achieve equity, prosperity and sustainable growth. The vision of the 2030 Agenda is “a world in which every child can reach his or her full potential and no child is left behind”. The agenda’s commitments and goals directly influence the services and environment in which children grow and develop to their full potential, however, early childhood in turn is essential to the achievement of these objectives.

Specifically, the global objectives on poverty reduction (SDG 1.2), nutrition (SDG 2.2), health (SDG 3.2), education (SDG 4.2),¹⁹ gender equality (SDG 5.4), water and sanitation (SDGs 6.1 and 6.2), climate action (SDG 13.1) and protection (SDG 16.2) address key outcomes to promote the development potential of children in early childhood. Addressing inequalities from an early age is critical and an accelerator for the achievement of all SDGs. Clearly, the inclusion of ECD in policy, planning, budgeting, programming and monitoring of outcomes for children from early childhood presents both opportunities and challenges in its formulation.²⁰

Policies for sustainable development should focus on early childhood; investments at this stage can help, achieve the SDGs faster, at lower cost, more equitably, and with greater long-term results, thereby creating a win-win relationship.

Nurturing care at the Core of the Global Strategy and the SDGs



Source: WHO, UNICEF, WBG, 2018, p. 24.

Achieving the SDGs presents numerous challenges in policy and programme implementation (from scoping, sustainability, quality, available technology, and financing). For this reason, it is important to clearly identify the approach and the need to systematically incorporate the early childhood approach into plans and programmes at all levels of government. This requires highlighting the differences in the particular needs of early childhood compared to older children and differentiating between the various stages of early childhood.

¹⁹ “SDG 4.2 By 2030, ensure that all children have access to quality early childhood care and development and preschool education so that they are ready for primary education.” (UN General Assembly, 2015).

²⁰ UNICEF, 2023.

2.2. The nurturing care early childhood development framework

Nurturing care²¹ refers to “the conditions created by public policies, programmes and services. Such conditions enable communities and caregivers to ensure the good health and nutrition of children and protect them from threats. Nurturing care also means providing young children with opportunities for early learning through sensitive and emotionally nurturing interactions.”²²

Components of nurturing care



Therefore, nurturing care is the set of conditions that lay the foundation for health, nutrition, safety and security, as well as for the provision of sensitive care and opportunities for early learning.

Children who do not receive all the elements of nurturing care tend to have impaired cognitive, language and psychosocial skills, as well as executive functioning, which translates into poor academic performance in elementary school and, ultimately, school dropout. Likewise, evidence has shown that the structures of immediate, underlying and macro-level causes of early deprivation perpetuate cycles of poverty, inequality and denies children’s fundamental rights. ECD has been cited as the most cost-effective “equalizer” to break the vicious cycle of inequality, if evidence-based interventions are provided to all children, especially the most marginalized.²³

Children who do not receive all the elements of nurturing care tend to have impaired cognitive, linguistic and psychosocial skills.

Source: (WHO, UNICEF, WBG, 2018, page 12)

²¹ WHO, UNICEF, WBG, 2018.

²² Pan American Health Organization, 2021, page. 2.

²³ UNICEF, 2017, page. 10.

2.3. The environment and climate change in early childhood development

The climate crisis is a threat to global existence. The scientific evidence is unequivocal, human-induced climate change is a threat to the well-being of humanity and the health of the planet. In the coming decades with global warming above 1.5°C (2.7°F), risks to society will increase, mainly to infrastructure and low-lying coastal settlements (IPPC, 2022), but above all the climate crises will result in impacts to the most vulnerable population, the children of the planet.

The climate crisis constitutes the main challenge of this generation in terms of children's rights. Today, every child on the planet is exposed to at least one of the climatic and environmental risks, shocks or stresses (heat waves, cyclones, floods, water shortages, vector-borne diseases, air pollution) and half of them live in countries at extremely high risk. In addition, other social, political and health risks (such as COVID-19) aggravate and overlap risks, making certain parts of the world even more precarious and dangerous for children.

The Children's Climate Risk Index²⁴ (CCRI) is the first comprehensive analysis of climate and environmental risks from children's perspective. In the index, countries are ranked according to children's exposure to climate and environmental shocks, such as cyclones and heat waves, as well as their vulnerability to these shocks according to their access to essential services (health, nutrition, education, water, sanitation and hygiene). The index reveals that in Latin America and the Caribbean:

55 million children are exposed to water scarcity;



60 million children are exposed to cyclones;



85 million children are exposed to Zika;



115 million children are exposed to Zika;



45 million children are exposed to heat waves;



105 million children are exposed to air pollution.



At the same time, as previously mentioned, children are particularly vulnerable to the impacts of extreme weather conditions, droughts, and floods. Physically, they are less able to control their level of exposure, both in terms of protecting themselves from immediate hazards and regulating body temperature.

In addition, they are more vulnerable to hazardous substances and toxic and polluted environments. Physiologically, even small amounts of toxic chemicals can be harmful to children, as they breathe twice as fast as adults. They require more food and water per unit of body weight compared to

²⁴ UNICEF, 2021.

adults, in cases where air, water and/or food are contaminated, children will be disproportionately affected. While children's bodies are still developing, they are not as prepared as adults to deal with toxic substances. Early exposure to toxic substances can have lasting consequences for brain development and lung capacity, resulting in a variety of challenges such as cognitive delays. Also, children are more susceptible than adults to infectious diseases. Nearly 90 per cent of the global burden of disease associated with climate change will fall on children from birth to age 5. The impact of the climate crisis is of particular concern for children living with disabilities, cognitive and learning difficulties, in poverty and/or in marginalized communities.

Environmental changes that occur as a result of climate change affect children's physical health and growth, as well as their psychological development and mental well-being. Increasing urbanization and changes in climate (such as heat waves, floods, and droughts) directly impact the spaces in which children grow, learn, and play.²⁵ Both sudden and ongoing extreme weather events can affect a family's ability to provide a safe and stable home. Extreme weather events can also prevent access to school temporarily or even months or years of education, food, and transportation, which can have far-reaching impacts on children's learning, development, and well-being.

The ongoing impacts of the current climate crisis affect children today, but also throughout their lives. Children born after 2020 will live on a planet with very different environmental conditions than previous generations, it will be a more dangerous place to live, children's ability to learn will be negatively affected, and disasters will be more frequent, prioritizing life and livelihood over education. In the medium and long term there

will be more loss of livelihoods, malnutrition, changes in disease vectors, migration, loss of opportunities and may lead to perpetual cycles of poverty. Unless major investments are made in the adaptation and resilience of social services for the 4.2 billion children who will be born in the next 30 years, the risks to child survival and well-being will increase.²⁶

From a sustainable development perspective, individual vulnerabilities translate into increased vulnerability at the community and national levels, which is a major obstacle to achieving the Sustainable Development Goals. Failing to protect the future of today's children by ignoring the impact of climate change and environmental degradation creates a cycle of intergenerational disadvantage and inequality.²⁷

Although it is clear that children are disproportionately affected by climate change and environmental degradation in a variety of ways, the differential impact on children in early childhood at distinctive stages of development is unclear. Children are often still treated as a homogeneous group, and impacts in early childhood (<8 years) are disproportionately less well researched. A significant gap that limits the ability to anticipate and respond to the very different needs of children at different stages of development. Early childhood children are the most vulnerable of the vulnerable; air pollution, heat shocks, droughts, floods, disease, and forced migration affect children directly, creating stresses that disrupt their brain development and affect their mental health and cognitive abilities, which can lead to chronic problems that will accompany them throughout their lives.

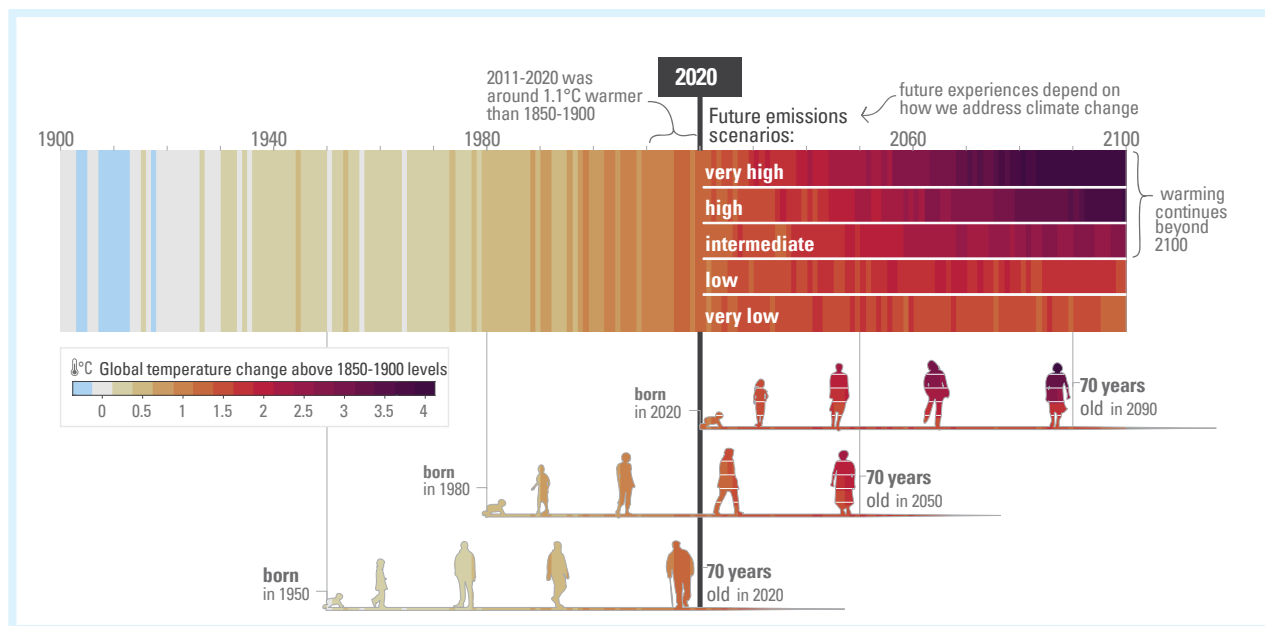
Such a reality means that the factors that may make some children more vulnerable than others are not being reflected in policies and

²⁵ WHO, UNICEF, WBG, 2018.

²⁶ UNICEF, 2021, page 11.

²⁷ ARNEC, 2022.

2. Conceptual framework



Source: (IPPC, Summary for Policymakers. In: Climate Change 2023: Synthesis Report., 2023)

care plans in emergencies. For example, research by Le Masson et al. (2016)²⁸ suggests that violence against girls increases after disasters and that the attention generated by agencies either in emergencies or for development programmes underestimates the post-disaster gender factor and gender-based violence, and that this occurs in all countries and at all levels of development. Likewise, reduced access to education increases their vulnerability; girls and children with disabilities face a number of challenges that other children do not. In summary, the stage of development (e.g., pre-school versus school age) and the individual characteristics of children (e.g., gender, experience of disability, etc.) are likely to be significant when considering the impacts of climate change and environmental degradation on their development, and we do not currently have mechanisms to reflect these important distinctions in planning and responses.²⁹

The increasing challenges posed by climate change compel policies to prioritize what is urgent and what is important. The intersection between early childhood and climate change is both urgent and important, as it serves the most vulnerable while also being the most valuable for building resilient communities and driving systemic change in the short and long term.³⁰

When early childhood policies, programmes, and practices are of high quality, adequately funded, equitably distributed, and aligned with sustainable development principles, they provide a powerful avenue for immediately increasing the resilience and adaptive capacity of early childhood children to the effects of climate change and other emergencies.

²⁸ Le Masson, Virginie, et al., 2016.

²⁹ ARNEC, 2022, page 23.

³⁰ Ponguta, Scott, & Cerezo, 2023.

2.4. Opportunities for early learning in environment and climate change

The inclusion of a specific reference to early childhood education in SDG 4 reflects the importance of this stage of development. Target 4.2 states that, by 2030, the goal is to «ensure that every child has access to quality early childhood care and development services and quality pre-primary education to prepare them for primary education».

Early childhood education is an essential part of the package of services necessary for the development of children between the ages of 0 and 8 years that, in accordance with the framework for nurturing care, seeks to ensure that they can achieve optimal conditions of health, adequate nutrition, sensitive care, protection and **early learning opportunities**.

Learning is an inherent human mechanism that enables our successful adaptation to changing circumstances. Early education in line with developmental level is crucial for children's cognitive and social development, and to achieve adequate emotional development. Children from all demographic groups should have access to free early childhood and primary education, especially children from vulnerable population groups, since stress affects learning.

In Latin America and the Caribbean, in 2019 the gross enrolment rate in early childhood education (ECE) was 46.6 per cent, i.e., less than half of the population in the age range was attending an educational offer, however, in the last twenty years there has been a sustained increase in the population attending ECE offers in the region, around 0.7 percentage points per year (6.3 million children between 2007 and 2020). However, there are wide heterogeneities and marked gaps in guaranteeing generalized access for the population aged 0 to 2 years.³¹

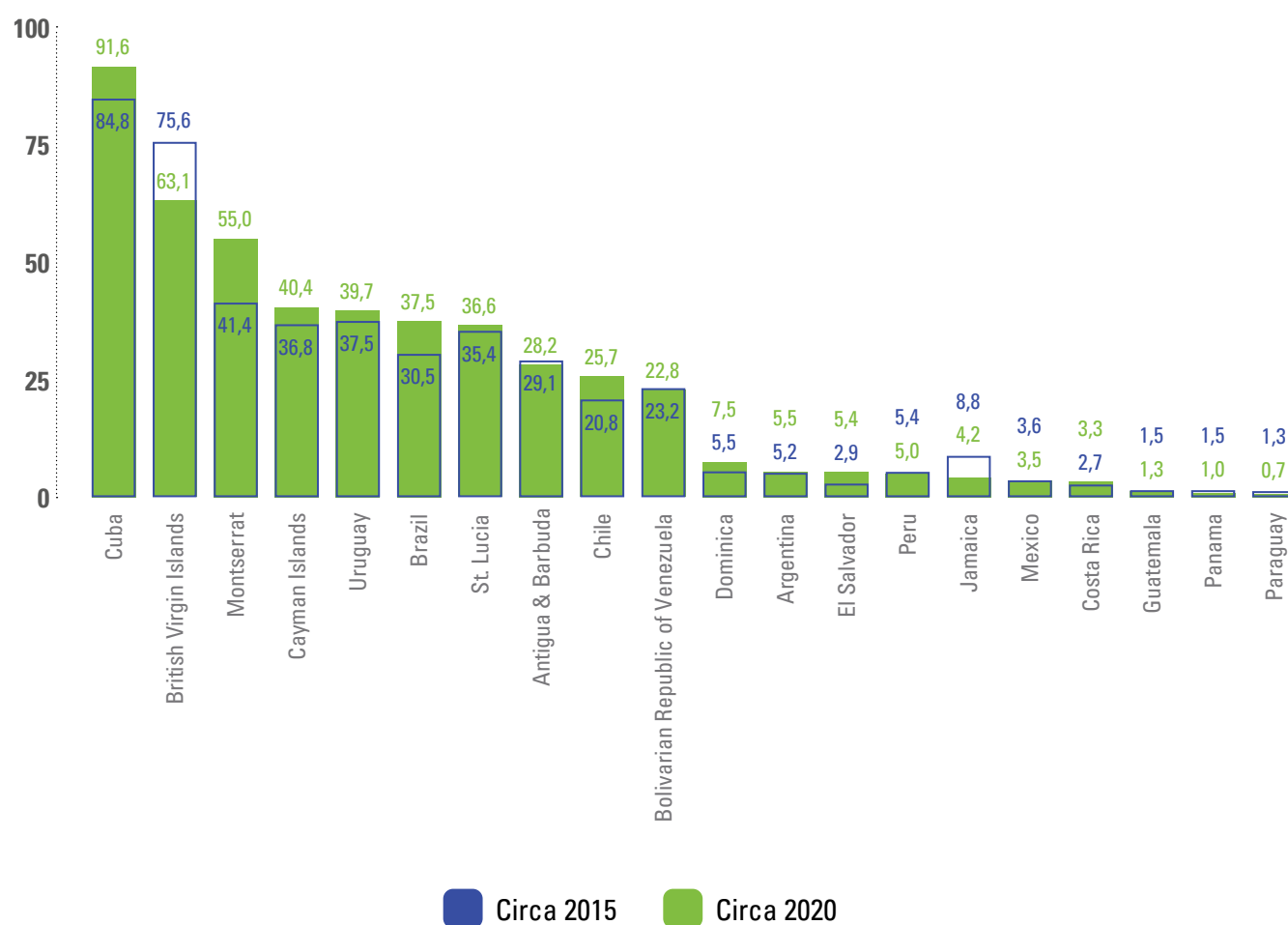
A notable disparity exists among the countries in the region, Cuba, which has a coverage of more than 90 per cent, while in Paraguay, it barely reaches 1 per cent coverage. In addition, countries also show variations in their trends over time. Some countries, such as Montserrat, Brazil, Cuba and Chile, show a distinct upward trend. In contrast, in most cases, growth has been more moderate, and in some countries, there has been no improvement at all.

During early childhood, exploring the natural environment lays the foundation for a harmonious relationship with nature. Consequently, this stage of human development represents a unique opportunity to foster responsible habits, promote knowledge and healthy behaviours, and develop motivations, aspirations and life skills, such as the protection and balanced restoration of natural processes.

Furthermore, as children develop their competencies, their need for protection will become less and less and they will acquire a greater capacity to take responsibility for the decisions that affect their lives. A young child is both a product of his or her ecological environment and an agent of change in it. Thus, from an expanded perspective, the question of children's capacity to make decisions about the issues that affect them is central to understanding the tangible contributions they can make to addressing the climate and environmental crisis. This implies that, as active participants in their classroom, community, society and planet, children have a real opportunity to participate as citizens and acquire a sense of responsibility and concern for their ecological surroundings.

³¹ UNESCO, 2022.

Gross enrolment rate in early childhood education development programmes (SDG 4.2.4a) (in percentages). Latin American and Caribbean countries. Circa 2015-20



Note: For the years circa 2015, 2015 values were used, except for Antigua and Barbuda and the Bolivarian Republic of Venezuela (2014), and for Paraguay (2016). For the years circa 2020, 2020 data were used, except for Argentina, Brazil, Chile, El Salvador, Mexico, Montserrat, St. Lucia and Uruguay (2019), for Antigua and Barbuda (2018) and for the Bolivarian Republic of Venezuela (2017).

Data source: UNESCO Institute for Statistics (UIS). UIS database, available at <https://on.unesco.org/3vnhYT5> (accessed December 1, 2021).

It is crucial that childcare programmes, early childhood education, early childhood education and the first years of primary education actively adopt teaching based on a life-centered vision oriented towards a harmonious coexistence with nature.

The different approaches to parenting, educational policies and early childhood care and development interventions, as well as early learning and early education programmes, play a strategic role in the fight against climate change and environmental degradation, as they have a significant impact on adults' attitudes towards nature. In this sense, it is urgent that childcare programmes, early education, early childhood education and the first years of primary education actively adopt teaching based on a vision centred on life and oriented towards a harmonious coexistence with nature. In transforming these value systems that guide our daily choices, early childhood educators play a crucial role as they support early learning at a critical time in human development when the foundations are laid for future interactions with people, communities, systems and ecosystems.



3. State of the art of environmental and climate education in early childhood education in Latin America and the Caribbean

Education from the earliest years of life about the environment and climate change could be the most effective way to bring about real change in societies. Policies, programmes and pedagogical approaches that address environmental and climate education at the early childhood level in LAC should be transformative, empowering, participatory, context-sensitive and experiential. The following is a broad review of educational policies and the inclusion of environmental and climate change issues in early childhood curricula identified in LAC countries.

Table 1. Inclusion of the environmental and climate dimension in the initial education curricula of 24 LAC countries.

Country	Early Childhood Policy	Inclusion of environmental-climatic dimension
Argentina	Diseño Curricular para la Educación Inicial: Niños desde 45 días hasta 2 años (Ministry of Education of the City of Buenos Aires, 2016)	Includes contents to start knowing about natural environments: plants, birds, butterflies, etc.
	Diseño Curricular para la Educación Inicial: Niños de 2 a 3 años (Ministry of Education of the City of Buenos Aires, 2020)	Includes in the Physical Environment section direct contact with nature that stimulates the ability to provide care and assume their incipient responsibility.
	Diseño Curricular para la Educación Inicial: Niños de 4 y 5 años (Ministry of Education City of Buenos Aires, 2020)	Includes a block dedicated to nature with the objective of promoting a strong sense of belonging and responsibility for the protection and care of the natural environment.
Bahamas	Preschool Curriculum (Ministry of Education, Youth, Sports and Culture, 2007)	Includes in a limited way the care for nature as a skill to be developed in children.
Belize	Preschool Curriculum (Ministry of Education, 2006)	Includes in a limited way the care for nature as a skill to be developed in children.
Bolivia	Programa de Estudio Dosificado Educación Inicial en Familia Comunitaria (Ministry of Education, 2021)	The Vida Tierra Territorio field includes objectives and broad content on the care, protection and defense of Mother Earth from the family, school and community.
	Contenidos Mínimos de Currículo de Formación de Maestras y Maestros: Especialidad Educación Inicial en Familia Comunitaria (Ministry of Education, 2021)	The programme incorporates contents and pedagogical tools related to the care of Mother Earth.

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Country	Early Childhood Policy	Inclusion of environmental-climatic dimension
Brazil	Directrices Curriculares Nacionales para la Educación en Primera Infancia (Secretaria de Educação Básica do Ministério de Educação, 2010)	Includes as an objective the interaction, care, preservation and knowledge of biodiversity and the sustainability of life on Earth, as well as the non-waste of natural resources.
Chile	Bases Curriculares Educación Parvularia (Undersecretary of Early Childhood Education of the Ministry of Education, 2018)	Incorporates climate change as a context, although not as content, and include as a Learning Objective the care for nature and a whole Core Exploration of the Natural Environment.
Colombia	Bases Curriculares para la Educación Inicial y Preescolar (Ministry of National Education, 2017)	Development and learning purposes include fostering attitudes of respect for nature and promoting ecological awareness.
Costa Rica	Programa de Estudio Educación Preescolar (Ministry of Public Education, 2014)	The Ecological Foundation is included in the foundations of the curriculum; awareness and respect for biodiversity and nature are integrated in the contextualization, as well as contact with nature as a mediation strategy.
Dominica	Curriculum Guide Health and Family Life Education (Ministry of Education, Human Resource Development, Sports and Youth Affairs, 2006)	Includes the Home and School Environment Theme that includes as success criteria and activities different measures of care for nature including evaluation recommendations.
Ecuador	Currículo Educación Inicial (Ministry of Education, 2014)	Characterization of the development and learning areas for children of the Initial 2 sub-level in Relations with the natural and cultural environment, the development of attitudes of understanding, care, protection and respect for nature is included.
El Salvador	Fundamentos curriculares de la primera infancia (Ministry of Education, 2013)	Care for nature and sensitivity to climate change is included in the exit profile of the kindergarten child, as content of the "Relationship with the environment" area of experience and development. The topic of climate change is explicitly addressed in the activity "My friends the planets".
	Plan de Estudios de Profesorado y Licenciatura en Educación Inicial y Parvularia (Ministry of Education, 2012)	Includes Methodological Strategies to stimulate a deep love for nature, climate change is included in the subject Risk Management and Prevention.
Guatemala	Curriculum Nacional Base Nivel Inicial 0-4 años (Ministry of Education, 2004)	Some considerations on the natural environment are included and the pedagogy is framed within the Sustainable Development Axis 6 of the general curriculum.
	Curriculum Nacional Base Nivel Preprimario 4-6 años 11 meses (Ministry of Education, 2004)	Care for nature is included in the Social and Natural Environment Stage Competencies.

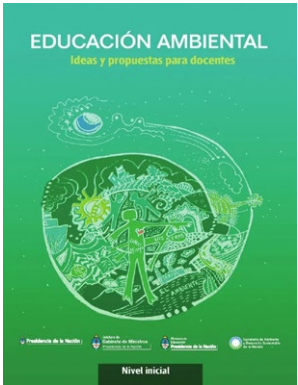

Country	Early Childhood Policy	Inclusion of environmental-climatic dimension
Guyana	Curriculum Guide For Nursery Year 2 (Ministry of Education)	Includes as an objective the interaction, care, preservation and knowledge of biodiversity and the sustainability of life on Earth, as well as the non-waste of natural resources.
Honduras	Marco de Gestión Ambiental y Social Educación Prebásica (Secretary of Education, 2019)	Actions are incorporated to address integrated risk management and climate change in the curriculum design at the pre-basic education level.
	Diseño Curricular de Educación Prebásica (Secretary of Education, 2015)	Includes in a very visible way the care for nature within the graduation profile (4 and 5 year olds) and in several activities.
Jamaica	Jamaica Early Childhood Curriculum Guide for Children Birth to Three (Ministry of Education and the Early Childhood Commission, 2009)	Respect for self, others and the environment is defined as a developmental objective and exploring and showing appreciation for nature/environment and nature walks is included as a recommended activity.
	Jamaica Early Childhood Curriculum Guide for Children Four and Five (Ministry of Education and the Early Childhood Commission, 2009)	Incorporates a more detailed approach and adds the topic of recycling and also includes several learning activities and strategies for professionals, including the involvement of parents in nature connection activities.
Mexico	Diseño Curricular Educación Inicial (Ministry of Education, 2021)	Field of Knowledge 3. Ethics, Nature and Society, broadly includes content on environmental care.
	Plan de Estudios para Lic. En Educación Preescolar (Ministerio de Educación, 2012)	The subject of Exploration of the natural world in preschool is included.
Nicaragua	Marco Curricular de Educación Inicial de 3 a 5 años (Ministry of Education, 2017)	Among the Values based on the National Early Childhood Policy is No. 3 Love for Mother Earth; sensitivity to the beauty of nature is also included in the Arts Education Approach.
Panama	Currículo de la Primera Infancia: Desde el Nacimiento a los 3 años (Ministry of Education, 2014)	Incorporates as a Learning Objective the beginning of care for nature, including a section on good practices of educational agents, observations for evaluation, games and educational resources.
	Programa de Preescolar (Ministry of Education, 2014)	In the social and citizenship Competence 5, the profile defines that the student appreciates life and nature. It also includes the Nature sub-area that incorporates attitudinal contents such as the formation of a critical attitude towards the care for nature, admiration and responsible behaviour in the interaction with nature.

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Country	Early Childhood Policy	Inclusion of environmental-climatic dimension
Paraguay	Programa para Jardín de Infantes y Preescolar (Ministry of Education and Culture, 2004)	The Natural Environment Dimension is included as an objective that recognizes the benefits of nature protection and conservation and some related activities.
Peru	Early Education Curricular Programme (Ministry of Education, 2016)	Includes outdoor dynamics to encourage respect and care for nature and includes an environmental focus within the Discovery of the World Area.
	National Basic Curriculum Design for Initial Teacher Training (Ministry of Education, 2019).	Cross-cutting Approach 5 is Environmental Approach with learning objectives and concrete actions identified.
Dominican Republic	Diseño Curricular Nivel Inicial (Ministry of Education, 2020)	Included as a Fundamental Environmental and Health Competence for 5 years, defining that it contributes to caring for the environment by integrating into their daily lives small habits that favour the reduction of pollution, saving water and electricity, with the support of adults.
Trinidad and Tobago	Early Childhood Care and Education Curriculum Guide (Ministry of Education, 2013)	The Desired Outcome for all levels of the educational system includes Being aware of the importance of living in harmony with the environment and how children experience an environment where they show respect for themselves, others and the environment.
Uruguay	Marco curricular para la atención y educación de niñas y niños uruguayos desde el nacimiento a los seis años (Early Childhood Education Coordinating Council, 2014)	Contains a natural context axis that includes environmental care within its objective and the development of healthy environments as a competency.
Venezuela	In the Subsistema de Educación Inicial Bolivariana: Currículo y Orientaciones Metodológicas (2007)	Among the Pillars, orientations for teachers and as a graduate profile, contact with nature is included to promote environmental values and an environmental conscience of love for nature.



Several LAC countries have developed materials and teaching tools for teachers on environmental and climate education focused on the initial level. Most of these materials have been developed since 2010 and their primary focus is on environmental issues. The topic of climate change is more absent, with the exception of Chile, which addresses it comprehensively, and Nicaragua, which addresses it within the framework of integrated risk management. Some countries such as Mexico and Peru have developed materials focused on specific territories.

Table 2. Didactic materials and tools for pre-school teachers exclusively focused on environmental and climate education.

Country	Teaching tool	Home page
Argentina	<p>Educación ambiental: ideas y propuestas para docentes nivel inicial guide. (National Ministry of Environment and Sustainable Development, 2011).</p> <p>Includes a chapter dedicated to Proposals for the Initial Level with orientations of contents, dynamics and pedagogical approaches; it also includes 11 examples and practical cases of activities.</p>	
	<p>Document Estrategias y materiales didácticos de Educación Ambiental para Nivel Inicial...Reflexiones y aportes desde Gualeguaychú para Entre Ríos (General Council of Education, Government of Entre Ríos, 2015).</p>	
	<p>Local adaptation of the national curriculum guidelines for early education.</p>	



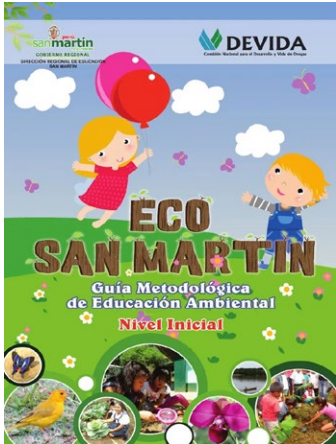
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Country	Teaching tool	Home page
Chile	<p>Guía de Educación Parvularia Valorando y cuidando el medio ambiente desde la primera infancia (Ministry of the Environment, 2020).</p> <p>Teacher's guide identified in LAC that most deeply covers the topic on climate change at the initial educational level.</p> <p>Document Desarrollo Sustentable en Educación Parvularia: Experiencia de Aprendizaje en NT1 y NT2 (2013)</p> <p>Includes reflections, implementation considerations and 15 learning proposals in a worksheet format of ESD approach exercises for this level.</p>	  
Colombia	<p>Exploración del Medio en la Educación Inicial Guide (Ministry of Education, 2014)</p> <p>Widely promotes contact with nature.</p>	
Ecuador	<p>Thesis Guía Didáctica de Educación Ambiental Dirigida a Niñas y Niños de Inicial 2 y Preparatoria (Universidad Politécnica Salesiana, 2014).</p> <p>Thesis Guía metodológica de actividades vivenciales dirigido a docentes de inicial para formación de hábitos en el cuidado del medio ambiente (Pontificia Universidad Católica del Ecuador, 2020).</p>	



Country	Teaching tool	Home page
Ecuador	Guía Didáctica de Ciencias Naturales Aplicada a la Educación Inicial: Para niños de 2 a 3 años (Pontificia Universidad Católica del Ecuador, 2017).	
El Salvador	Guía Didáctica de Educación Ambiental para Maestros/as de Parvularia (Ministry of Environment and Natural Resources, 1999). Deepens pedagogical aspects and includes 8 units on specific environmental topics.	
Mexico	Guide for preschool, 1st and 2nd grade primary school teachers Miro, Siento y Escucho. Cuidemos el Ambiente con Plaza Sésamo (SEMARNAT y AMITE, 2012). Proyecto Ambiental en Educación Preescolar "Juega, Explora y Aprende" (Secretary of Education, State of Colima, 2011).	 

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Country	Teaching tool	Home page
Mexico	Environmental Education Didactic Guide for Teachers Formando Corazones Verdes Preescolar (Gobierno Estado de Chiapas, 2013).	
Nicaragua	Guía para Educadora(es) y Docentes de Educación Inicial (Preescolar): Educación en Gestión Integral del Riesgo: Para una vida más segura (MINED).	
Nicaragua	Guía Didáctica para Docentes del Nivel de Educación Inicial Seguridad Alimentaria y Nutricional (MINED-FAO, 2011).	
Paraguay	Guía de Uso Material para Docentes y Educadoras Comunitarias Primera Infancia Indígena (Ministry of Education and Science, 2021) includes care for the environment through the use of recycled materials.	

Country	Teaching tool	Home page
Peru	Experiencia de Aprendizaje Somos Protectoras y Protectores de la Naturaleza (Ministry of Education, 2020).	
	Experiencia de Aprendizaje ¡Me cuido, nos cuidamos y a la Madre Tierra Ayudamos! (Ministry of Education, 2020).	
	Guía Metodológica de Educación Ambiental Nivel Inicial: Eco San Martín (Regional Directorate of Education San Martin, 2014).	

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Country	Teaching tool	Home page
Dominican Republic	<p>Educación Temprana sobre el Agua Guía Didáctica para Docentes Preprimario y Nivel Inicial (PUCMM, 2016).</p> <p>Completely dedicated to information, dynamics and exercises to take care of water.</p>	 <p>EDUCACIÓN TEMPRANA SOBRE EL AGUA Guía Didáctica para Docentes</p> <p>Logos: PUCMM, BANRESERVAS, and a blue ribbon with 'Proyecto de Investigación'.</p>
Venezuela	<p>The Guide of Didactic Strategies for the Teaching of Environmental Conservation, Aimed at Teachers of the Manuel Antonio Carreño Early Education Centre (Universidad Nacional Experimental de los Llanos Occidentales, 2018).</p> <p>Deepens the environmental perspective in contents and exercises.</p>	<p>Técnicas III: Juegos ecológicos Descubro mi Árbol y planta</p> <p>Propósito: Percibir la Naturaleza a través de todos los sentidos.</p> <p>Contenido ambiental: El árbol como componentes de la naturaleza.</p> <p>Objetivos: Adquirir sentido de pertenencia sobre elementos naturales. crear vínculos con la naturaleza, consolidar el concepto de amistad.</p> <p>Descripción: Los participantes formarán parejas. Uno de cada pareja se vendará los ojos. El que no está vendado, llevará al otro a caminar por el terreno (seguridad) hasta pararlo frente a un árbol. El de los ojos vendados percibirá por medio de los sentidos que tiene disponibles dicho árbol.</p> <p>La pareja volverá al punto de partida. Ya sin la venda, el participante tendrá que a buscar el árbol que percibió con los ojos vendados. Al encontrarlo seguramente exclamará: "este es mi árbol" o "descubrí mi árbol" (sentido de pertenencia). Luego, el otro participante, realiza el mismo desarrollo.</p> 

Environmental and climate education initiatives aimed at early childhood are strengthened when they are formalized and included in national environmental legislation and in more specific legislation and policies on environmental and/or climate education. In most of the environmental legislations of LAC countries, early childhood is contemplated within the figure of “all levels and educational modalities”. An exception is Colombia, which identifies early childhood education in its National Environmental Education Policy Law, and the Dominican Republic, which includes a complete section on climate change integration in early childhood in its National Climate Change Education Strategy.

Table 3. Inclusion of the initial education level in environmental and environmental education legislation and policies.

Country	General environmental legislation	Environmental and/or Climate Education Legislation or Policy
Argentina	Ley General Del Ambiente (2000) Article 20, paragraph b establishes “the effective incorporation and cross-cutting management of environmental education at all levels and modalities of the national education system...”	Estrategia Nacional De Educación Ambiental (2018) Article 89 “The Ministry of Education, Science and Technology, in agreement with the Federal Council of Education, shall provide for the necessary measures to provide environmental education at all levels and modalities of the National Educational System...”
Bolivia	En la Ley No. 1333 Del Medio Ambiente (1992) Art. 82 establishes that “the Ministry of Education and Culture will incorporate the environmental theme with an interdisciplinary approach and obligatory character in plans and programmes at all levels, cycles and modalities of the educational system.”	
Brazil	Ley N.º 6.938 (1981), Article 2, paragraph X (10) establishes “environmental education at all educational levels, including community education, so that they can actively participate in the defense of the environment.”	Ley No. 9795 de 27 de abril 1999 Art. 10 states “environmental education shall be developed as an integrated, continuous and permanent educational practice at all levels and modalities of formal education.”
Colombia		Ley 1549 de Política Nacional de Educación Ambiental (2012) Art. 7. establishes to “strengthen the incorporation of environmental education in formal education (preschool, elementary, middle and higher education).”
Costa Rica		La Ley de Protección, Conservación y Recuperación de las Poblaciones de Tortugas Marinas (2008) in Art. 86 “Biology education should be integrated into educational plans at all levels, in order to achieve an understanding of the value of biodiversity.”
Guatemala	En la Ley de Protección y Mejoramiento del Medio Ambiente (1986) states in its Art. 12 c) “Guide the educational, environmental and cultural systems towards the formation of qualified human resources in environmental sciences and occupation at all levels to form an ecological conscience in the entire population.”	Ley de Educación Ambiental (2010), Art. 1. “The purpose of this Law is to include permanent environmental education in the national education system, in the different levels, cycles, grades and stages of the school system, in its different modalities; in public, private and cooperative educational centres, in a multilingual, multiethnic and multicultural environment.”

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Country	General environmental legislation	Environmental and/or Climate Education Legislation or Policy
Haiti	Article 75 of the Decreto Marco de Gestión Ambiental y Reglamento de Conducta Ciudadana para el Desarrollo Sostenible (2006), establishes “Environmental Management and Regulation of Citizen Conduct for Sustainable Development as a mandatory subject at all levels of the national education system.”	
Honduras	The Ley General del Ambiente (1993) states that “The Secretariat of State in the Office of Public Education will incorporate environmental education into the entire National Education System, to which effect it will reform and innovate the current academic structures for the development of extension, study and research programmes that offer proposals for solutions to the environmental problems of greatest impact in the country.”	
Mexico	In the Ley de Equilibrio Ecológico y Protección al Ambiente (2022) in Art. 39, “the competent authorities shall promote the incorporation of ecological content, sustainable development, mitigation, adaptation and reduction of vulnerability to climate change, environmental protection, knowledge, values and skills, in the various educational cycles, especially at the basic level, as well as in the cultural education of children and youth.”	The Estrategia de Educación Ambiental para la sustentabilidad (2006) indicates that “there is a national strategy with social and environmental impacts that favor a cultural change driven by an active society that designs and executes consolidated programmes and projects, based on a strong institutional framework, a critical and participatory citizenship, and the incorporation of environmental education for sustainability at all educational levels.”
Panama	In Chapter 4.5 of the Estrategia Nacional del Ambiente (2009) “education incorporates cross-cutting environmental issues into the curriculum at all levels of the teaching-learning process.”	
Perú	Ley General del Ambiente (2005) In Art. 11 e. “The effective promotion of environmental education and responsible environmental citizenship, at all levels, educational environments and areas of the national territory.”	
Dominican Republic		Ley de Educación Ambiental (2020) Art. 1.- “The purpose of this law is to include environmental education in the different levels, cycles, grades, modalities and stages of the Dominican school and higher education system.” Estrategia Nacional para Fortalecer los Recursos Humanos y las Habilidades para Avanzar hacia un Desarrollo Verde, con Bajas Emisiones y Resiliencia Climática (2012) includes a full section on climate change integration at the initial level.
Venezuela		Política Nacional de Educación Ambiental y Participación Popular (2012) establishes in its Art. 2.3.6 “to promote exchanges of experiences of educational institutions, on the insertion of the environmental component, in the practice of the Curriculum of all educational levels, to strengthen the Integral Axis Environment and Integral Health.”

A total of 65 research studies and academic publications on environmental education at the early childhood level in LAC have been identified. Mexico is the pioneer country in LAC with the oldest research. Colombia is identified as the current leader in the region, both at the quantitative level with more than 20 publications of thesis research in the last 10 years and at the qualitative level with the greatest diversity and depth of topics addressed on environmental education in early childhood.

Table 4. Research and academic publications on environmental education at the early childhood level in Latin America and the Caribbean (LAC)

Country	Research	Research Centre	Year
Argentina	Thesis: Educación para la conservación en el Nivel Inicial: una mirada a los niños	Universidad Nacional del Centro de la provincia de Buenos Aires	2020
Brazil	Article " La formación continua del maestro de Educación Infantil en Educación Ambiental "	Pontificia Universida de Católica do Paraná (PUCPR)	2019
Brazil	Article " La educación ambiental en la educación niños según el conocimiento de Morin "	Estudos RBEP	2018
Brasil	Monograph Educación Ambiental en la Educación infantil	Universidad de Tecnológica Federal Do Paraná	2020
Brasil	Thesis "Environmental Education for Early Childhood Education."	Universidade Estadual Paulista	2017
Colombia	Master's Thesis in Education " Cuidado Del Medio Ambiente Con Niños Y Niñas Del Grado Jardín 2 Del Hogar Infantil De María Auxiliadora Del Municipio De Medellín "	Fundación Universitaria los libertadores	2022
Colombia	Biology Thesis La Educación ambiental como un campo relevante para explorar a través de la revisión documental e indagación con profesores de primera infancia en el contexto colombiano. Reflexiones y propuesta alternativa literaria	Universidad Pedagógica Nacional de Colombia	2020
Colombia	Thesis " Implementación de una unidad didáctica mediada por el juego como estrategia para un aprendizaje en ciencias naturales que concientice en el cuidado del agua con estudiantes de educación inicial de la Institución Madre María Berenice de Villa del Rosario Norte de Santander "	Universidad Santo Tomas, San José de Cucuta	2020

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Country	Research	Research Centre	Year
Colombia	Thesis on Early Childhood Education, La Dimensión Ambiental y La Formación de Maestros y Maestras Para la Infancia	Universidad Pedagógica Nacional	2019
Colombia	Thesis " Semillitas Ambientales: Propuesta Pedagógica Para Fortalecer La Educación Ambiental Desde La Infancia En Edad Entre 4 Y 5 Años De La I.E.D "Ricardo Hinestrosa Daza" Del Municipio De La Vega Cundinamarca "	Universidad Santo Tomás	2019
Colombia	Thesis. Master in Childhood and Culture La Educación Ambiental: Una Propuesta de Enseñanza Desde La Mirada De Las niñas y los niños Las Niñas de 4 a 6 años, Del Municipio El Rosal, Cundinamarca	Universidad Distrital Francisco José de Caldas	2018
Colombia	Thesis " Aprendizaje De Valores Ambientales En Las niñas y los niños De Preescolar: La Huerta Escolar Como Estrategia Para La Educación Ambiental "	Universidad de Ciencias Aplicada y Ambientales	2018
Colombia	Thesis " Aprendizaje De Valores Ambientales En Las niñas y los niños De Preescolar: La Huerta Escolar Como Estrategia Para La Educación Ambiental "	Universidad de Ciencias Aplicada y Ambientales	2018
Colombia	Thesis University Bachelor's Degree in Popular Education, Educación Ambiental en Primera Infancia, una Alternativa de Educación Popular	Universidad del Valle	2017
Colombia	Publication Tendencias de Educación Ambiental en Educación infantil: una mirada desde la formación de educadores infantiles	Eidec Editorial	2017
Colombia	Thesis Diseño de una estrategia lúdica pedagógica para el fortalecimiento de las prácticas del cuidado del medio ambiente en las niñas y los niños niñas de la primera infancia del CDI (Centro de Desarrollo Infantil Lirios de Plata) del municipio de La Plata Huila	Universidad Nacional Abierta y A Distancia	2017
Colombia	Thesis " Concepciones y prácticas de educación ambiental desde la gestión institucional: Un estudio de caso en el nivel preescolar de colegios oficiales de la localidad Antonio Nariño, Bogotá D.C. "	Universidad Santo Tomás	2017
Colombia	Thesis " Estrategia Pedagógica Para Favorecer La Educación Ambiental En Primera Infancia: Manejo De Residuos Y Recuperación De Zonas Verdes "	Fundación Universitaria Los libertadores	2017
Colombia	Thesis, University Bachelor's Degree in Early Childhood Pedagogy, Hacia una educación al aire libre basada en la naturaleza en la primera infancia, en la ciudad de Bogotá-Colombia	Universidad Javieriana	2016
Colombia	Master's Thesis in Sustainable Development and Environment, Sentidos de la Educación Ambiental para las Formadoras de la Primera Infancia en el Núcleo Educativo 915 de Medellín	Universidad de Mazinales	2015

Country	Research	Research Centre	Year
Colombia	Thesis Educar ambientalmente a la primera infancia una estrategia de aprendizaje (Universidad Católica de Colombia)		
Colombia	Thesis Un jardín con énfasis en educación ambiental .	Universidad de la Sabana, Chía, Cundinamarca.	2015
Colombia	Thesis “Los Procesos De Gestión Ambiental En Los Jardines Aures Y San Benito: hacia una cultura institucional”	Universidad Pedagógica Nacional.	2015
Colombia	Thesis “Participación Infantil En Los Proyectos Ambientales Escolares, Estrategia: Inclusión De La Dimensión Ambiental En Escenarios Formales De La Educación”	Universidad Pedagógica Nacional.	2015
Colombia	Thesis Natural Sciences and Educación Ambiental, Educación ambiental y primera infancia: Estudio de caso Institución Educativa Normal Superior y Fundación Educadora Carla Cristina del Bajo Cauca	Universidad de Antioquia Seccional	2014
Colombia	Thesis, B.A. in Early Childhood Education Alternativas Para Articular La Educación Infantil Con La Educación Ambiental	Universidad Pedagógica Nacional	2013
Costa Rica	Biology Thesis Aula al Aire Libre: Evaluación y sistematización de un programa de educación ambiental formal	Universidad de Costa Rica	2011
Costa Rica	Thesis Pedagogy degree with emphasis on Preschool Promoción de un manejo moderado del recurso hídrico en la escuela Manuel Camacho Hernández con las niñas y los niños y las niñas que asisten a Interactivo II y al Ciclo de Transición: Propuesta pedagógica desde un enfoque de ecopedagogía	Universidad Nacional de Costa Rica	2019
Cuba	Theoretical-methodological conception of the early childhood curriculum in the dimension of relationship with the environment		2019
Cuba	Article Fundamentos y Concepción De La Educación Preescolar En el Sistema Educativo Cubano		2017
Cuba	Article La Educación Ambiental en la Edad Preescolar		2016
Dominican Republic	Perspectiva de los Padres de Niños del Nivel Inicial con respecto al Uso de los Recursos Didácticos Estructurados y No Estructurados dentro del Proceso de Enseñanza-Aprendizaje	Universidad Iberoamericana	
Ecuador	Thesis, La educación ambiental en el desarrollo de la conciencia ecológica en niños y niñas de 5 a 6 años en la Unidad Educativa Mitad del Mundo	Universidad Central Del Ecuador	2018
Ecuador	Thesis, Las Actividades Curriculares en el Desarrollo de la Autonomía de las niñas y los niños Niñas de Inicial 2 del Centro de Educación Inicial el Vergel	Universidad Técnica de Ambato	2015

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Country	Research	Research Centre	Year
Ecuador	Thesis “Diseño, Implementación Y Evaluación Del Proyecto “Educación Ambiental, Adaptación Al Cambio Climático”: En Primera Infancia En Tres Instituciones Educativas Públicas Y Particulares Del D.M.Q En El Segundo Quimestre Lectivo 2013-2014”	Universidad Internacional SEK	2014
Ecuador	Thesis Educational Psychology “Propuesta De Estrategias Pedagógicas Para El Periodo De Adaptación En Niños De 4 A 5 Años”	Universidad de Cuenca, Ecuador	2014
Honduras	Master's Thesis Diagnóstico del nivel de pre básica en las diferentes áreas curriculares y experiencia de intervención didáctica en el desarrollo de competencias: El caso del Jardín Mundo Maravilloso de Juticalpa, Olancho	Universidad Pedagógica Nacional	2012
Honduras	El juego desde el punto de vista didáctico a nivel educación básica	Universidad Pedagógica Nacional	2007
Mexico	Article Educación Ambiental en el Preescolar	Escuela Nacional para Maestras de Jardines de Niños	2021
Mexico	Thesis Fomento de la cultura ambiental en el cuidado del agua a Nivel Preescolar mediante la estrategia el Aprendizaje Basado en Proyectos	Universidad Veracruzana	2017
Mexico	Doctoral Thesis La Construcción del Conocimiento Ambiental en la Educación Preescolar de Tabasco, México	Universidad Autónoma de Madrid	2015
Mexico	Thesis “La Educación Ambiental En El Nivel Preescolar: Una Visión Desde La Formación Del Docente”	Universidad Pedagógica Nacional	2015
Mexico	Thesis, Bachelor in Early Childhood Education Alternativas Para Articular La Educación Infantil Con La Educación Ambiental	Universidad Pedagógica Nacional	2013
Mexico	Master's Thesis Propuesta Didáctica de Educ Amb en Preescolar: El Agua	Universidad Pedagógica Nacional	2010
Mexico	Thesis Educación y Cuidado del Medio Ambiente en Preescolar	Universidad Pedagógica Nacional	2005
Mexico	Thesis “La Educación Ambiental En Las niñas y los niños Y Niñas Indígenas Del Nivel Preescolar ”	Universidad Pedagógica Nacional	2004
Mexico	Thesis “Propuesta Pedagógica De Educación Ambiental Para Docentes De Preescolar”	Universidad Nacional Autónoma De México	2004
Mexico	Thesis El Niño Y El Cuidado Del Medio Ambiente Natural	Universidad Pedagógica Nacional	2004
Mexico	Thesis “El Método Montessori Como Medio De Enseñanza De Educación Ambiental Para Las niñas y los niños En Etapa Preescolar”	Universidad Nacional Autónoma de México	2004

Country	Research	Research Centre	Year
Mexico	Thesis “Cómo Promover El Amor Y Cuidado De La Naturaleza En Niños De Edad Preescolar”	Universidad Pedagógica Nacional	2003
Mexico	Thesis “Teatro guiñol: modelo de educación ambiental para el conocimiento de mamíferos silvestres a nivel preescolar en zonas urbanas y rurales en Tuxtepec Oaxaca”	Los Reyes Iztalnepantla	2001
Mexico	Thesis “La Didáctica Crítica Como Estrategia A Implementar Para Conocer Y Aplicar La Reforestación En El Jardín De Niños”		1999
Mexico	Thesis “La Educación Ambiental En El Nivel De Preescolar”	Universidad Pedagógica Nacional	1997
Mexico	Thesis “How to make preschool children aware of the damage caused by solid waste pollution.”	Universidad Pedagógica Nacional	1997
Mexico	Thesis Pedagogy Degree “El Desarrollo De Actitudes En El Niño De Edad Preescolar Para La Preservación Del Ambiente. Una Propuesta Para Apoyar La Educación Ambiental”	Universidad Intercontinental	1992
Mexico	Thesis “El cuidado de las plantas mediante la creatividad del niño Preescolar”	Universidad Pedagógica Nacional	
Peru	Early Childhood Education Thesis “La Educación Ambiental Desarrollada En Las niñas y los niños Del II Ciclo Del Nivel Inicial”	Universidad Católica Santo Toribio de Mocoquejo	2022
Peru	Early Childhood Education Thesis “Educación Ambiental En Niños Y Niñas De 5 Años En La Institución Educativa Inicial. N° 706 Pacaya Samiria – San Juan 2018”	Universidad Científica de Perú	2021
Uruguay	Monograph “El valor de la Educación Ambiental en la vida de las nuevas generaciones”		2021
Uruguay	Thesis “Las prácticas de enseñanza de las Ciencias naturales en Educación Inicial: estudio de tres instituciones privadas”	Universidad Ort Uruguay	2017
Venezuela	Article “La Cultura Ambientalista En El Contexto De La Educación Inicial”		2021
Venezuela	Thesis Bachelor of Education “Diseño De Proyecto De Educación Ambiental Para El Nivel De Educación Inicial Escuela Bolivariana Archipiélago Los Roques”	Universidad Central De Venezuela	2011
Venezuela	Article “Pedagogía Ambiental En Venezuela Y Educación Inicial”	Universidad De Los Andres	2004
Venezuela	Tesis, Análisis De los Distintos Factores Que Influyen en la Utilización o No de las Herramientas Que Ofrece El Currículo De Educación Preescolar Para Trabajar La Educación Ambiental	Universidad Católica Andres Bello	2002



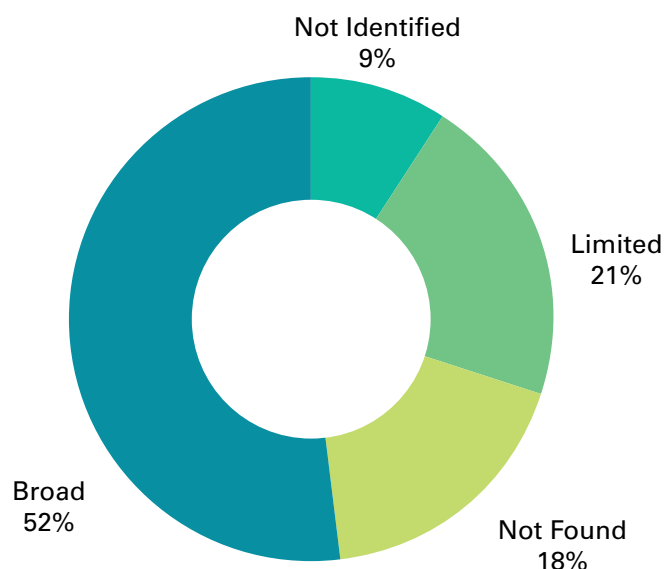
4. Analysis of early childhood education legislation and curricula

In LAC, 27 countries have been identified as including early childhood education (0 to 6 years) as part of their countries' official and mandatory educational system. In most of them, the last year of pre-primary education is mandatory.

Among these 27 countries, 24 have early childhood curricula with environmental education elements. The three countries in which no environmental education elements were identified are all in the English-speaking Caribbean: Antigua and Barbuda, Barbados and Saint Lucia. Likewise, in the Small Island Developing States: Cuba, Grenada, Haiti, Saint Kitts and Nevis, Saint Vincent and the Grenadines and Suriname, no official early childhood curriculum documents³² were found.

Regarding the level of integration, of the **24 LAC countries that have identified some element of environmental education in their early childhood curricula**, 17 countries include it extensively and in detail. However, **only three countries (9 per cent) have included some curricular content on climate change** at the early childhood level, namely Chile only at the contextual level, El Salvador and Honduras with specific exercises and content.

Figure 1. Integration level of the environmental dimension in the general educational legal framework that incorporates the primary level in LAC countries.



³² This is not to say that such curricula do not exist, but that they are not easily accessible in a public manner.

4. Analysis of early childhood education...

In LAC, 22 countries have teaching materials or tools for pre-school teachers that include some environmental content. Of these, 10 countries have teaching materials specifically focused on environmental education: Argentina, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Paraguay, Peru and Venezuela.

Chile is the country that goes most deeply into the topic of climate change at the initial level and is the only country identified that has a conceptualized guide under Education for Sustainable Development.

Most of the materials are developed by the ministries of education and valuable collaboration processes have been identified, where the ministries of environment (Argentina, Chile, El Salvador and Mexico) have developed didactic materials for early childhood teachers.

Paraguay is the only country identified that has created a material focused on indigenous communities with an environmental emphasis.

In three countries, the dynamics of decentralized education have been identified in which regional authorities develop their own environmental materials for early childhood. Specifically, the Government of Entre Ríos in Argentina, the Regional Government of San Martín in Peru, and the Government of the State of Chiapas and the Secretary of Education of the State of Colima in Mexico.

Since 2012, the Dominican Republic has had a National Climate Change Education Strategy that includes a complete section on the integration of climate change at the initial level.

The academy has also developed important materials. Ecuador has two very complete guides for teachers that have been created as thesis research, and another guide presented as an academic publication. A private university in the Dominican Republic has developed a guide focused entirely on the care of water resources.

There are some multilevel environmental education tools, as in Ecuador with the [Caja de herramientas de Educación Ambiental para el Desarrollo Sostenible en Ecuador](#) (UNESCO, 2021), which includes five didactic cards on Early and High School Education, two on climate change and three on environmental issues. Guatemala has an [Guía Didáctica de Educación Ambiental para Escuelas](#) (version 2020) that includes a chapter for preschool level.

The framework of general environmental laws of 11 LAC countries establishes the inclusion of environmental education at all levels of education (see Table 1) environmental education at all educational levels (including early childhood). Most are Spanish-speaking countries, including four countries in Mesoamerica. Eleven countries in the region have specific environmental or climate education policies or laws that include early childhood education, all Spanish-speaking countries except Brazil.

Several countries, such as Argentina, Brazil, Guatemala and Mexico, incorporate the environmental dimension at the initial level both in their general environmental laws and in more specific environmental education policies.

5. Relevant practices

As a result of the exhaustive analysis of curricular content in early childhood education, the following cases stand out as specific examples in the region of the integration of the climate and environmental dimension in the formal school curriculum.

Relevant Practices

Country of implementation: El Salvador

Name of the relevant practice: Inclusion of climate change content in the early childhood curriculum.

Implementer's description: The Ministry of Education, Science and Technology of El Salvador.

Description of the experience: Development of the Curricular Foundations for Early Childhood (Ministry of Education, 2013) and the Curriculum for Early Childhood and Kindergarten Education (Ministry of Education, 2012), which are the official curricular documents that most extensively and in detail include the topic of climate change in LAC.

Timeline: 2012 - current.

Main results

Regarding the **Early Childhood Curriculum Foundations:**

- Caring for nature and sensitivity to climate change is included in the child's exit profile of the Kindergarten Education defining that: "...regarding climatic facts and phenomena related to the life of people, living or inanimate beings, they are able to identify their characteristics or significant elements"
- Included in the content of "Relationship with the environment" is the topic named "We value and enjoy contact with nature and understanding natural phenomena, specifically perceiving weather and climatic seasons".
- The topic of climate change is explicitly addressed for six-year-olds in the activity "My friend the planet", a series of activities that includes a detailed reflection on the effects of climate change on planet Earth with visual and audiovisual support if possible.

Regarding the Curriculum for the **Teacher Training and University Bachelor's Degree in Early Childhood and Kindergarten Education:**

- Includes Methodological Strategies to stimulate a deep love for nature.
- Integrates climate change in the subject of Risk Management and Prevention where "the subject is oriented to the study of the conditions of vulnerability faced by Salvadoran society due to the occurrence of adverse phenomena and climate change..."

Links to relevant information: the [Fundamentos curriculares de la primera infancia](#) (2013) and [Plan de Estudios de Profesorado y Licenciatura en Educación Inicial y Parvularia](#) (2012).

Relevant Practice

Country of implementation: Chile

Name of relevant practice: Initial Environmental Education Guide

Description of the implementer/s: the Ministry of Environment (created in 2010 through Law No. 20.417) and the Tierra Viva Foundation, a multidisciplinary team that contributes with its experience and commitment to develop projects of excellence in environmental education and management.

Description of the experience: The 2nd edition of the “Guide for Kindergarten Education Valuing and caring for the environment from early childhood” (2020), aims to incorporate environmental issues in an integral way in the teaching and learning process of children at the early childhood level in different educational centres throughout the country.

Timeline: 2020 - current.

Main objectives:

- Address environmental education from an early age in the educational system, contributing to the formation of citizens who are responsible for the environment and climate change from an early age.
- Strengthen the close link between primary education and environmental education, which integrates the work of the National Board of Kindergartens (JUNJI) with the kindergartens of the National System of Environmental Certification of Educational Establishments (SNCAE) network.

Main results:

- The guide raises eight topics of environmental relevance: water care, air quality, energy care, waste management, sustainable lifestyles, climate change, biodiversity and disaster risk management.
- Addresses key environmental issues, such as the greenhouse effect, biodiversity, sustainable lifestyle, in a cross-cutting manner, implementing contemporary and multidimensional pedagogical techniques (such as role-playing and interventions in public spaces), to address the various issues.
- Each topic in the guide includes educational activities for schools to implement some educational solutions to environmental issues.
- The guide also contains several exercises for early childhood education children where they are given exercises and activities so that, through role-playing, they can become involved in the solution of environmental problems, such as taking photographs or drawing pictures that represent global warming, planting plants, experimenting with temperature, and at the end of each experience, writing an opinion.

Links to relevant information: [la Guía de Educación Parvularia Valorando y cuidando el medio ambiente desde la primera infancia](#) (2020).

6. Conclusions and Recommendations

From a sustainable development perspective, by experiencing, modelling and relearning from an early age how we are closely interrelated with ecosystems, we can cultivate a generation that will be more resilient and inclined to defend and protect nature as adults. It is an appropriate time to systematically incorporate early childhood into climate change and sustainable development education programmes and strategies.

ECD is a comprehensive approach to learning and development through five interrelated components of nurturing and responsive care (health, nutrition, responsive care, early care, learning, safety and security). Policies and programmes focused on the early years-when appropriately funded, of high quality, equitably distributed, applied across the appropriate life span, and aligned with sustainable development principles-have a triple dividend: they promote climate resilience and adaptive capacity, protect individual potential, foster human development, and drive sustainable development). Early childhood development has the potential to be a major transformative element in increasing resilience, climate change adaptation and sustainable development.

Early childhood educators, parents and caregivers have a crucial role in supporting early learning to promote a harmonious coexistence with nature.

By virtue of the above, it is recommended to:

- Place children, especially early childhood, at the centre of climate action and environmental protection. International agreements and funds, international commitments such as nationally determined contributions, national adaptation programmes, as well as national, regional and local policies, practices and financing, must be aligned to protect the most vulnerable children from the impacts of climate change and to promote adaptation, mitigation and loss and damage reduction actions with explicit attention to early childhood.
- Highlight the differentiated needs of children in early childhood, compared to older children, and to differentiate the stages of development within the early childhood period from 0 to 8 years of age (gestation, 0 to 3 years (1,000 days), pre-primary (3 to 5/6 years) and early primary school), in order to adequately respond to the needs for care, protection and stimulation at each stage.
- Children of all ages should be considered as agents of change and their participation is valuable in responding to climate impacts and environmental degradation. Investment in their learning and knowledge processes needs to be nurtured and supported so that they build life skills and a strong sense of individual and collective participation to meet.
- Increase early childhood funding as required through multi-sectoral collaboration in order to better coordinate funding and service delivery and respond in a timely manner to contextual needs and uncertainty, as well as anticipate future needs or challenges.
- Generate data to understand and document the impacts of climate change and environmental degradation on early childhood to support evidence based ECD policies and programmes.

6. Conclusions and Recommendations

- Childcare programmes, early childhood education (0 to primary school entry), play a strategic role in the fight against climate change and the protection of the environment. Educators, parents and caregivers have a crucial role to play in supporting learning that promotes harmonious coexistence with nature.
- Integrate climate change into early childhood education curricula. To date, only three countries in the region include some curricular content on climate change at the early education level.
- Expand partnerships between ministries of environment and ministries of education. It is suggested that partnerships between ministries of environment and ministries of education continue to be expanded and fostered to explore opportunities to create innovative teaching materials for teachers.
- Promote more territorial decentralization of environmental and climate tools for early childhood education. It is recommended to encourage more state or municipal authorities to develop their own didactic materials to better reflect their environmental and climate environment at the local level.
- Strengthen environmental teaching tools for early childhood education teachers. There is an opportunity to promote the development of more materials and tools focused entirely on environmental content and especially on climate change.
- Strengthen academic research, especially at the teacher training level. It is suggested to coordinate initiatives with academia, especially with institutions that offer teacher training programmes, to promote further research on the environmental dimension and particularly on climate change (the least studied) at the early childhood level.

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