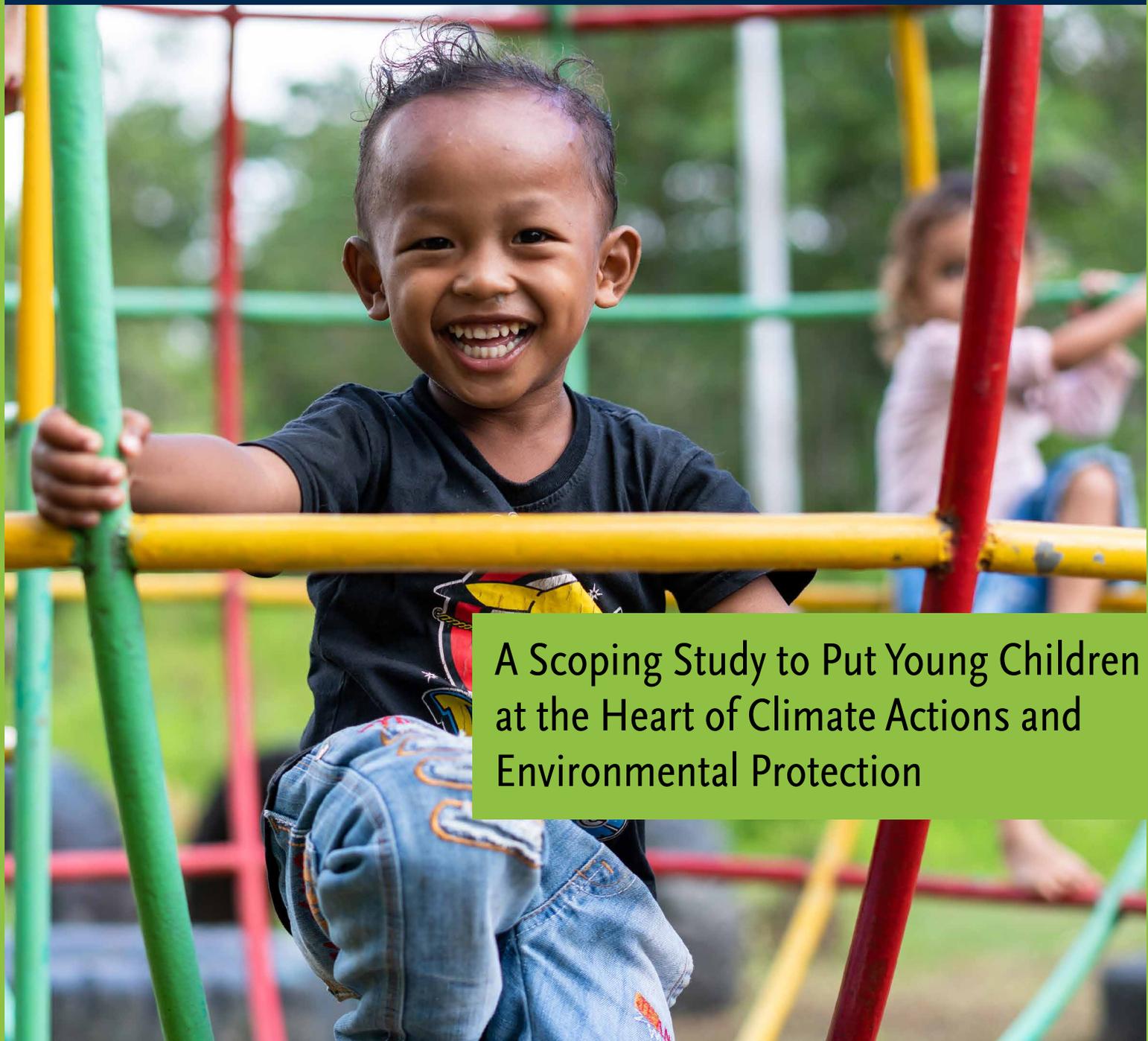


MOST VULNERABLE TO MOST VALUABLE

DECEMBER 2022



A Scoping Study to Put Young Children
at the Heart of Climate Actions and
Environmental Protection



ARNEC
Asia-Pacific Regional Network
for Early Childhood



Save the Children



**Bernard
van Leer
FOUNDATION**

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Coordination: Evelyn Santiago and Rowan Ainslie (ARNEC)

Partners: Bernard van Leer Foundation, UNICEF East Asia and the Pacific Regional Office, Save the Children International

This report was prepared by Prof Marc de Rosnay, A/Prof Cathrine Neilsen-Hewett, Prof Lisa Kervin, Snr Prof Anthony Okely, Dr Ellie Taylor, Dr Karel Strooband, and Lisa Kilgariff, from the University of Wollongong, Early Start Australia.

CONTACT: Evelyn Santiago, secretariat@arnec.net

Typeset: Mats Lignell/Unsaid

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Executive Summary

As we move rapidly into a world affected by climate change and environmental degradation (CC&ED), and the need for adaptation to its increasingly serious and disruptive effects (IPCC, 2022a), there is growing recognition that young children will be the most profoundly affected (Thiery et al., 2021) but they are at the same time the least well represented in the policies and programs designed to respond to current impacts and plan for future consequences (ARNEC, 2022; CCC, 2015; Pegram & Colon, 2020). This Scoping Study is a response by ARNEC and its partners to this situation, designed to put early childhood development (ECD) at the heart of climate actions and environmental protection.

The Scoping Study moves progressively from a global to a regional and local perspective and, in doing so, develops a *child-centred approach* (CCC, 2015; summarised in **Chapter 10**) to better integrate ECD with climate actions and environmental protection, while at the same time attempting to capture current areas of good practice, innovation and opportunity. In conducting the study, priority was given to the identification of and respect for the knowledge and expertise of those involved in CC&ED policy and program development, including those within disaster risk reduction (DRR), across jurisdictions globally but with emphasis on the Asia-Pacific region (**Chapter 2**).

The child-centred approach was elaborated from previous work pioneered by the Children in a Changing Climate (CCC) Coalition (2015) and was also informed by the nurturing care framework for early childhood development (NCF; WHO, UNICEF & World Bank Group, 2018). Connections were sought with the Sustainable Development Goals and other relevant frameworks (as appropriate; see **Chapter 5**) to situate analyses within existing, internationally recognised agreements, mechanisms, and approaches. The structure, approach, and key findings of the Scoping Study are described below.

Global Impacts Survey & Desk Review (Chapters 3 to 6)

The Global impacts survey and desk review is presented in four chapters, beginning with a high-level survey of young children's rights within the key international frameworks, and an acknowledgment of the threats to their wellbeing posed by CC&ED in **Chapter 3**. Importantly, Chapter 3 pushes back against the tendency to treat children as an homogenous group and seeks, instead, to specifically re-define early childhood in terms of meaningful developmental stages – conception and pregnancy, infancy and toddlerhood (birth to 2 years), preschool age (3-5 years), and early primary school age (6-8 years) – and provides a high-level global summary of the existing research literature that speaks to the vulnerabilities, challenges, and opportunities facing young children and their caregivers in these different stages of development in relation to CC&ED. Chapter 3 shows that, within the early childhood period, there are profound differences between developmental stages, thereby providing a foundation and rationale for adopting a child-centred approach to integrating ECD within climate actions and environmental protection.

In **Chapter 4** a rationale is presented for using the NCF (WHO et al., 2018) to elaborate the child-centred approach and bring focus to the nurturing care needs of young children. The structure and logic of the NCF is leveraged to engender more differentiated thinking about how CC&ED impacts young children. A high-level mapping of CC&ED effects on the different domains within the NCF – good health, adequate nutrition, responsive caregiving, opportunities for early learning, and security and safety – is presented in an illustrative manner.

Against the backdrop of the child-centred approach and the differentiated lens it provides, **Chapter 5** contrasts the global call to action on ECD and CC&ED (ARNEC, 2021a) with a global snapshot of current policies, programs, and funding, describing how young children currently feature within global policy agreements and frameworks (5.2) and the SDGs (5.3). Whilst there is a clear gap between current status quo and the focus required to integrate ECD into CC&ED actions, there is also growing recognition that there is insufficient attention given to ECD in current policies and frameworks (5.8). Encouragingly, despite the fact that current guiding policy frameworks are not child-centred and Nationally Determined Contributions (NDCs; specified under the Paris Agreement) have insufficient recognition of young children's rights and needs (UNICEF, 2021c), there is emerging evidence globally (5.4) and within the Asia Pacific region (5.6) of initiatives that take a child-centred approach to integrating ECD with CC&ED within policies and programs.

The final section of the global impacts survey and desk review leverages expert insights to identify the principles and strategies needed to put ECD at the heart of climate change actions and environmental protection (Chapter 6). Prominent themes emerging from the expert panel included (a) a lack of data that speaks to the impacts of CC&ED on young children, (b) the need to elevate young children's voices and reposition them as our most valuable asset for future mitigation and adaptation, (c) the need to advocate strongly for better recognition of young children and caregivers in the first 1000 days of life, and (d) a recognition that there will need to be concerted effort from leaders and decision makers to change existing systems so that the child-centred approach is positioned more prominently within our guiding frameworks and within the development of policy and programs at all levels.

Sub-Regional Analysis & Case Studies (Chapters 7 to 9)

The sub-regional analysis and case studies present the synthesis of various data gathering and information sharing mechanisms that are central to the Scoping Study (see Appendix D for information about the methodology). Guiding these chapters are the findings of the questionnaire developed by ARNEC to identify prominent CC&ED issues facing the sub-regions of the Asia Pacific (Oceania & Pacific, East Asia, South Asia, and Southeast Asia), and the key impacts on young children. In addition to the **questionnaire**, representatives from key government bodies and organisations with early childhood and/or climate change expertise were

invited to participate in sub-regional **focus group discussions** (FGDs) or **interviews**, depending on their availability. Representatives were selected in consultation with the ARNEC secretariat and based on their responses to the questionnaire. Interviews and FGDs presented an opportunity to share and discuss insights, key learnings, opportunities, challenges, and recommendations. The responses of the interviewees and FGDs were subjected to qualitative analysis and are largely integrated into Chapter 8. Finally, learnings from the **ARNEC sub-regional conference sessions** (2022, July) were also integrated into the sub-regional analysis and case studies.

The sub-regional analysis and case studies are organised so that the sub-regional profiles are presented first to orient the reader and provide a clear structure for subsequent analysis (**Chapter 7**). **Chapter 8** provides a full treatment of the findings based on the themes which emerged from the qualitative analysis. The most prominent theme was the need for more knowledge and advocacy about the challenges of integrating ECD with CC&ED (8.1), which includes advocacy for the rights of young children to be recognised as stakeholders in their futures and to participate in the responses to and planning for CC&ED. Thematic analysis also revealed strong agreement about the siloed nature of responding to CC&ED challenges within government, service providers and other agencies (8.2). Respondents agreed that improved inter-sectorial collaboration promises to improve planning and responding but also that there is considerable inertia in existing systems to bring about such changes. Further, it was noted that collaboration between health and education was paramount. Respondents were also keen to bring attention to the profound impacts on the wellbeing of young children and their caregivers and relatively poor availability of resources and support mechanisms to address such issues (8.3), and the persistent challenges of air pollution in many sub-regions of the Asia Pacific (8.4).

The case studies in **Chapter 9** present a varied range of experiences from across the region (Mongolia, India, Vietnam, and Fiji) and provide a description of good practices, opportunities, and areas of innovation, as well as considering challenges. These case studies provide tangible examples of the complexities facing different countries and a range of initiatives that are making a difference through very different mechanisms and approaches. Such case studies bring to life on-the-ground responses and planning for ECD in the context of CC&ED and may suggest ways forward within other jurisdictions.

Recommendations (Chapters 10 to 12)

The final chapters of the Scoping Study draw on the previous information sources (research evidence, policy frameworks, case studies, the questionnaire, etc.) and expert views to chart a path for the immediate future and medium term.

Chapter 10 provides a summary and reflection on the power of adopting a **child-centred approach** to climate actions and environmental protection. An overview of the child-centred approach is given emphasising **top-down** (10.1) mechanisms to ensure that the process of responding to and planning for children can be factored into other complex decision-making and planning processes so that they are implemented in ways that adequately reflect the needs and rights of children as described in the previous chapters. By contrast, the child-centred approach can be described in term of the **bottom-up** (11.2) processes and actions that are needed to ensure that children's views, voices, and perspectives are heard and responded to. This distinction between top-down and bottom-up mechanisms and processes can also be described, respectively, in terms of doing things for and with children (CCCC, 2015).

An important feature of Chapter 10 is the articulation of the **need to develop a tool** so that the nurturing care needs of children can be understood and differentiated in ways that are appropriate for the early years when integrating ECD with climate actions and environmental protection. Key factors to be considered within the development of such a tool will include sensitivity to the immediate and broader context, and the following elements:

1. Identification of *differentiated domains of impact* on the child and the caregiving system as, for example, defined within the nurturing care framework for early childhood development (NCF; WHO et al., 2018)
2. A determination of whether/how environmental and climate impacts differ in relation to the *stage of development* (i.e., conception and pregnancy, infancy to toddlerhood, preschool, early primary school)
3. A determination of whether/how environmental and climate impacts differ in relation to important *characteristics of the child* (e.g., gender, presence of disability, etc.)
4. Understanding of how the *duration, intensity* and *(in)tractability* of environmental and climate impacts affect children (at different stages of development) differentially and cumulatively
5. Articulation of the ways in which proposed or current responses will address the differentiated domains of impact on the child (see point 1), and how that will be *evaluated or measured*
6. A clear strategy to capture and communicate the views, voices and perspectives of children and their caregivers, and an *accountability mechanism* to ensure that such information is used appropriately
7. Consideration of how *risk factors and situational volatility* will threaten or undermine proposed or current responses

Using a **child-centred approach privileges the capacity (in absolute terms) to provide and sustain a nurturing caregiving environment for children when considering CC&ED impacts and responses, adaptation planning, and mitigation strategies**. It is an approach to supplement other decision-making and planning processes so that the needs and rights of children can be adequately considered and responded to.

Chapter 11 provides a call to action through a wide-range of recommendations that are derived from the findings of the Scoping Study and reflect the principles of a child-centred approach to climate actions and environmental protection. Furthermore, the recommendations are formulated at many levels, including, home, community, schools and ECE/ECCD programs, and services. The approach adopted in Chapter 11 is designed to provide **many possible starting or entry points**. It is not appropriate to advocate for all these recommendations simultaneously, and some will be more relevant to specific contexts. Nevertheless, the comprehensive approach taken in Chapter 11 is designed to facilitate flexible adaptation and to make the challenges and opportunities of integrating ECD into climate action and environmental protection more concrete.

Finally, **Chapter 12** revisits the main issues identified in the scoping study through the lens of policy considerations and development. Decision makers are encouraged to champion policy change and development in ways that reflect the child-centred approach and support tangible improvements for children and their caregivers through the **rigorous disaggregation of childhood based on meaningful periods of developmental transition**. Only by applying such discipline in policy and program development will appropriate analysis be given to the lives of young children so that their wellbeing will be supported and the harms that they will experience because of CC&ED will be reduced. Other areas for policy consideration include,

- A focus on young children's voice
- The need for evidence-based policy development
- Young children's learning and education environments
- Attention to funding mechanisms
- Children's environments and physical spaces

Key findings

Despite the diversity of information sources, expert views and FGD participants, and despite the richness of context specific information deriving from case studies and different regional settings, there were very consistent messages emerging from the Scoping Study. These include, but are not limited to,

- A. The nurturing care needs of young children need to be put at the heart of climate actions and environmental protection; the current lack of focus on young children is causing them additional harm
- B. To adequately respond to the nurturing care needs of young children and deliver on the commitments within the SDGs (5.3), it is necessary to BOTH highlight the distinctive needs of young children (i.e., ECD) in comparison to older children AND to differentiate developmental stages within the early childhood period (conception and pregnancy, infancy and toddlerhood, preschool, and early primary school). A child-centred tool that systematically incorporates the NCF and important child characteristics (e.g., gender, presence of disability, etc) in relation to climate actions and environmental protection can potentially assist in this endeavour (see Chapter 10)
- C. Children need to be seen as valuable participants in our climate and environmental response, and their education and knowledge needs to be cultivated and supported so that they build competence and a strong sense of individual and collective agency to meet future challenges
- D. Leadership is needed to re-conceptualise funding mechanisms (e.g., Chapter 12) and multisectoral collaboration (e.g., Section 11.5) so that financing and service delivery can be better coordinated to respond to contextual needs and uncertainty, as well as anticipating future needs or challenges
- E. Recognition that there is currently inadequate data to understand and document the impacts of CC&ED on ECD or to form the basis for future data driven evaluation of policies and programs

The findings and recommendations of this report represent a starting point to improve the ways in which we incorporate the needs and rights of young children into our responding to and planning for CC&ED. Future changes and innovation in practice, policy and programs should be shared to engender excellence in upholding children's rights.

Acknowledgment

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Acronyms

ARNEC	Asia-Pacific Regional Network for Early Childhood
CC&ED	Climate Change and Environmental Degradation
DRR	Disaster Risk Reduction
ECCD	Early Childhood Care and Development
ECD	Early Childhood Development
ECE	Early Childhood Education
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
NCF	Nurturing Care Framework
NDCs	Nationally Determined Contributions (National Commitments under Paris Agreement)
NGO	Nongovernmental Organisation
OECD	Organisation for Economic Co-operation and Development
SDGs	Sustainable Development Goals
SSCYG	Sendai Stakeholder Children and Youth Group
STC	Save the Children
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization

Glossary of key terms

Asia-Pacific region

The part of the world near the western Pacific Ocean, generally including East Asia, Oceania, the Russian Far East, South Asia, and Southeast Asia.

Climate change

Long-term term shifts in temperatures and weather patterns, largely caused by human activities, e.g., burning fossil fuels like coal and gas.

Climate change mitigation

Activities focused on addressing the causes of climate change.

Climate change adaption

Activities focused on reducing the negative impacts of climate changes.

Early childhood development (ECD)

Refers to changes in a young child's physical development, as well as social, emotional, behaviour, thinking and communication skills. All areas are interconnected. This is the period within which the foundations for learning, health and behaviour are established.

Early years

Typically refers to the period between birth and 5 years but may also cover the period from conception to 7 or 8 years, as is the case in this document.

Environmental degradation

A process by which the natural environment is compromised, reducing biological diversity and the general health of the environment.

Disaster Risk Reduction

Refers to the prevention of new and reduction of existing disaster risks, while strengthening the resilience of systems, approaches, and people.

Home-learning environment

The combination of everything a child and family does – including the spaces they have access to – that affect their development and learning within their home.

Natural disasters

A natural event that causes great damage or loss of life, such as earthquakes, hurricanes, or floods.

Nurturing Care

The World Health Organisation refers to nurturing care as “a stable environment created by parents and other caregivers that ensures children's good health and nutrition, protects them from threats, and gives young children opportunities for early learning, through interactions that are emotionally supportive and responsive” (World Health Organization, United Nations Children's Fund, World Bank Group, 2018).

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1. A scoping study to support the integration of ECD with CC&ED

1.1 Introduction

This Scoping Study was undertaken to establish a foundation and approach to shift emphasis toward early childhood development (ECD) in the context of understanding the impacts of and responses to climate change and environmental degradation (CC&ED). Specifically, this study recognises that there is currently insufficient attention given to the immediate and longer term needs of children in relation to climate actions and environmental protection, and it leverages the nurturing care framework for early childhood development (NCF; WHO et al., 2018), – a consensus model incorporating both the needs and rights of young children within their caregiving relationships, – to better understand and communicate the impacts of CC&ED on ECD. The Study will also elaborate a *child-centred* (CCC, 2015) *approach* for governments, decision makers, development agencies, advocacy groups, and key stakeholders to support the incorporation of young children’s needs and rights when considering climate actions and environmental protection, inclusive of adaptation and mitigation strategies. Through this process, examples of good practice and areas of innovation and challenges will be identified and considered in relation to future planning.

There are three components to the Scoping Study:

1. Global Impacts Survey & Desk Review (Chapters 3 to 6)
2. Sub-Regional Analysis & Case Studies (Chapters 7 to 9)
3. Recommendations: Looking Forward to Support a Focus on Young Children (Chapters 10 to 12)

Together, these different approaches and foci illustrate and guide the consideration of ECD in relation to CC&ED. Specifically, these different components show how ECD can be considered and supported at a local or community level using the child-centred approach and a focus on case studies, while at the same time positioning these actions within global and regional contexts or trends. Broad consideration is given to a range of CC&ED responses, including policy development, program initiatives, and financing/funding approaches at different levels (i.e., global, sub-regional, national, local). Through these analyses and the elaboration of the child-centred approach, ARNEC and its partners are contributing to awareness and understanding of the need to consider ECD in relation to CC&ED and develop a roadmap for multi-sectoral strategic planning (output 4).

1.2 Guiding Principles

The following principles guided the Scoping Study:

1. Priority was given to the identification of and respect for the knowledge and expertise of those involved in CC&ED policy and program development, including those within disaster risk reduction (DRR), across jurisdictions globally, but with a particular emphasis on the Asia-Pacific region
2. The nurturing care framework for early childhood development (WHO, 2018) was used as a guiding approach to inform analysis, and structure for translational products
3. Connections were sought with the Sustainable Development Goals and other relevant frameworks (as appropriate) to situate the analyses and work within existing internationally recognised agreements, mechanisms, and approaches

1.3 Approach and questions

The following questions were developed to explore ECD in the context of understanding the impacts of and responses to CC&ED:

- a. What are the anticipated global and Asia-Pacific specific impacts of CC&ED on young children's wellbeing and development, specifically aligned with the components of the nurturing care framework (NCF)?
- b. What are some of the global and Asia-Pacific specific opportunities, in terms of policies, programs and financing, to address the impact of climate change and other environmental factors affecting young children?
- c. How do current CC&ED policies, programs, and funding – as identified above – integrate ECD issues?
- d. How can the rights and needs of children inform adaptation, mitigation, preparedness, and actions designed to respond to anticipated CC&ED challenges?

We also document CC&ED impacts in four countries (case studies; Chapter 9) in ways that inform how responses to such events and planning for adaptation, mitigation and preparedness consider (or fail to consider) a focus on ECD.

2. Methodology

In recognition of the various challenges children are facing worldwide in relation to CC&ED, this project utilises the NCF (WHO et al., 2018) and elaborates a child-centred approach (summarised in Chapter 11; see also CCC, 2015) to better understand current effects of CC&ED on ECD.

An Asia-Pacific sub-regional analysis and scoping (across four countries) was also undertaken to explore how different sub-regions may address the impact of climate change, other environmental issues and natural disasters on young children.

The study focused on three areas that are examined in different stages: (1) current and anticipated areas of ECD impact based on NCF, (2) jurisdiction/regional specific challenges, and (3) action in anticipation of key challenges.

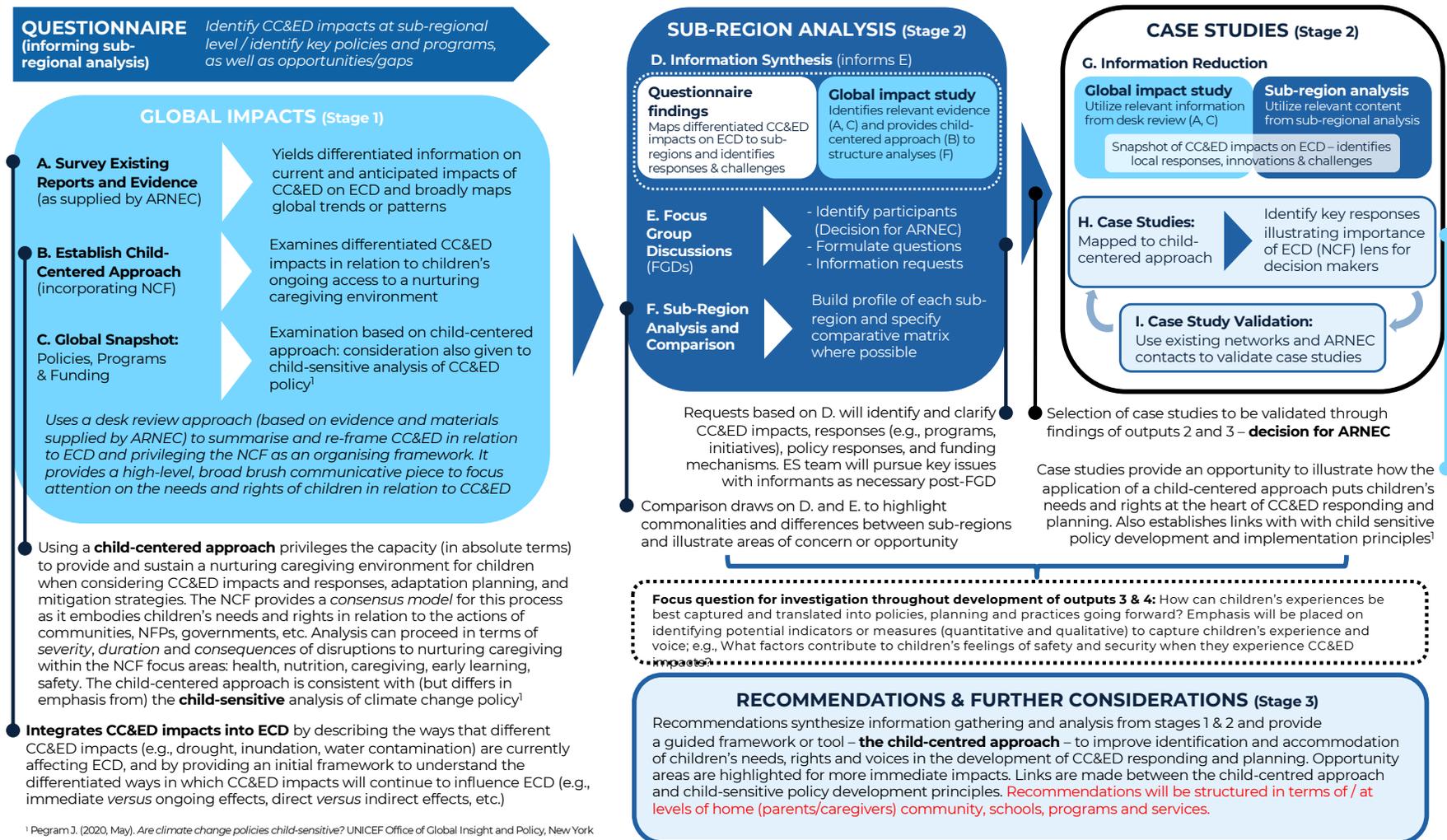
Prior to stage 1, a detailed inception report was completed including the work plan and proposed methodologies for producing each of the outputs. The study followed a bespoke methodology and analytic model (summarised in Figure 1), and the analytic approach prioritised good health, nutrition, safety and security, and early learning, in alignment with the guidelines articulated in the NCF (WHO, UNICEF & World Bank Group, 2018).

Stage 1: Drawing on the NCF, global impacts were determined using a global survey and desk review approach. This elucidated key challenges for ECD in relation to CC&ED at a global level and considered the need for multi-level actions (policies and programs). It also allowed the research team to consider child-centred programs and policies that are already in place. An expert panel was constituted to provide input and guidance going forward.

Stage 2: The impact of CC&ED varies between sub-regions of the Asia Pacific (i.e., felt more acutely in some regions relative to others), this stage of the study highlighted some of the key regional differences and their impacts. Regional profiles for ECD challenges were developed with reference to the NCF, which was utilised to frame sub-regional specific challenges as appropriate. Multiple methods (i.e., interrogation of research literature and existing policy frameworks, the questionnaire, FGDs with experts, etc.) were used to understand the different issues and themes that need to be addressed.

Stage 3: Pulling together the insights, information and views elucidated in stages 1 and 2, including the four national case studies, a series of recommendations were made across different ECD domains (recommendations were aligned with the NCF Strategic Actions 1 to 5) and a further elaboration and articulation of the child-centred approach was undertaken along with key considerations for policy development.

Figure 1. Methodology and Analytic Approach



GLOBAL IMPACTS SURVEY AND DESK REVIEW

The Global impacts survey and desk review is presented in four chapters, beginning with a high-level survey of children's rights within the key international frameworks, and an acknowledgment of the threats to their wellbeing posed by CC&ED in **Chapter 3**. Chapter 3 seeks to re-define early childhood in terms of meaningful developmental stages – conception and pregnancy, infancy and toddlerhood (birth to 2 years), preschool age (3 to 5 years), and early school age (6 to 8 years) – and provide a high-level global summary of the existing research literature that speaks to the vulnerabilities, challenges, and opportunities facing children and their caregivers in these different stages of development in relation to CC&ED. Chapter 3 also shows that, within the early childhood period, there are profound differences between developmental stages, thereby providing a foundation and rationale for adopting a child-centred approach to integrating ECD with climate actions and environmental protection.

In **Chapter 4** a rationale is presented for using the NCF (WHO et al., 2018) to elaborate the child-centred approach and bring focus to the nurturing care needs of children. The structure and logic of the NCF is leveraged to engender more differentiated thinking about how CC&ED impacts young children. A high-level mapping of CC&ED effects on the different domains within the NCF – good health, adequate nutrition, responsive caregiving, opportunities for early learning, and security and safety – is presented in an illustrative manner.

Against the backdrop of the child-centred approach and the differentiated lens it provides, **Chapter 5** contrasts the global call to action on ECD and CC&ED (ARNEC, 2021a) with a global snapshot of current policies, programs, and funding, describing how children currently feature within global policy agreements and frameworks (5.2) and the SDGs (5.3). Despite the fact that current guiding policy frameworks are not child-centred and Nationally Determined Contributions (NDCs; specified under the Paris Agreement) have insufficient recognition of children's rights and needs (UNICEF, 2021c), there is emerging evidence globally (5.4) and within the Asia Pacific region (5.6) of initiatives that take a child-centred approach to integrating ECD into climate actions and environmental protection within policies and programs.

The final section of the global impacts survey and desk review, **Chapter 6**, leverages expert insights to identify the principles and strategies needed to put ECD at the heart of climate actions and environmental protection. Prominent themes emerging from the expert panel included (a) a lack data that speaks to the impacts of CC&ED on children, (b) the need to elevate children's voices and reposition them as our most valuable asset for future mitigation and adaptation, (c) the need to advocate strongly for better recognition of children and caregivers in the first 1000 days of life, and (d) a recognition that there will need to be concerted effort from leaders and decision makers to change existing systems so that the child-centred approach is positioned more prominently within our guiding frameworks and within the development of policy and programs at all levels.



3. ECD, Climate Change and Environmental Degradation (CC&ED)

3.1 The current context

The world is in the grips of a climate crisis, with CC&ED proving a significant threat to livelihoods and wellbeing. Extreme weather events and environmental degradation are already having significant and devastating implications for people across the globe (UNICEF, 2021b). Extreme weather events, such as cyclones and heatwaves, are increasing in intensity and frequency (Thiery et al., 2021), threatening lives, and destroying infrastructure critical to wellbeing (UNICEF, 2021a). Floods, droughts, and land degradation are resulting in failing crops and increasing costs of food, which are factors driving food insecurity, nutritional deprivation, migration, and conflict (UNICEF, 2021a). Increasing scope of infectious diseases resulting from CC&ED also proves a significant threat to populations the world over (Bernstein & Myers, 2011). These climatic and environmental impacts compound risks to populations from non-climatic hazards such as earthquakes, tsunamis, and volcanoes, to which the Asia-Pacific region is particularly exposed.

In October/November 2021, the United Kingdom hosted the 26th United Nations (UN) Climate Change Conference of the Parties (COP26) in Glasgow. The COP26 summit brought representatives together to plan urgent action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. The COP26 Glasgow Climate Pact (United Nations, 2021) was established to speed up action, globally, in the following areas.

- **Mitigation** – Reducing carbon emissions, for example, via reduction and reversal of deforestation and phasing out coal power.
- **Adaptation** – Assisting those impacted by climate change to date. For example, pledges have been made toward 80 countries who are now covered by Adaptation Communications or National Adaptation Plans to foster preparedness toward extreme climate events.
- **Finance** – Assisting countries to work toward climate goals. For example, developed countries committing significant funding toward the Least Developed Countries Fund.
- **Collaboration** – Working together, across countries, toward collective action. For example, increasing collaborative efforts between governments, businesses, and civil society to accelerate actions toward the climate crisis and agree upon common timeframes for reduction of harmful activities such as emissions.

While progress is being made, it is critical to recognise that countries must work together toward a shared vision to act on measures to address the climate crisis. Increasingly, it is

being recognised that young children are set to suffer the consequences of the climate crisis in ways that outstrip adults. The Glasgow Climate Pact recognises, to an extent, the importance of focusing on climate-vulnerable cohorts such as children, acknowledging that climate action necessitates the inclusion of children in addressing and responding to climate change. However, it does not differentiate between children at different stages of development, for whom participation and empowerment must be responded to in appropriate ways (ARNEC, 2021).

In 2022, The Global Platform on DRR hosted its 7th session, *From Risk to Resilience: Towards Sustainable Development for All in a COVID-19 Transformed World*, highlighting the need for urgent actions necessary to achieve the goals of the 2030 Agenda of Sustainable Development and the Sendai Framework for Disaster Risk Reduction. The Sendai Stakeholder Children and Youth Group (SSCYG) is one of few that specifically focuses and advocates on the need for young children in relation to DRR.

While representing children's voices across the world, SSCYG believes: (1) all children should be involved in DRR activities, (2) there should be localization of DRR, (3) there is a need to integrate education and training about DRR into school curricula, (4) DRR policies should be more inclusive of children, and (5) there is additional funding needed for children and youth initiatives.

Within this broader context, it is timely to consider the impacts of CC&ED on young children's rights and wellbeing, and to chart a path forward to better meet the nurturing care needs of young children.

3.2 Impacts of CC&ED on young children's rights and wellbeing

Children have rights from birth including:

A right to grow and develop to their full potential and live in conditions that enable them to attain the highest standard of health through the implementation of programmes that address the underlying determinants of health.

General Comment 13, Committee on the Rights of the Child, 2013

Children have the right to a standard of living that is good enough to meet their physical and mental needs. The government should help families who cannot afford to provide this.

Article 27, Committee on the Rights of the Child, 2013

The climate crisis impinges directly on these rights and requires urgent action. This is further underscored by the notion that young children (particularly those from birth to 8 years) are more vulnerable than adults to the impacts of CC&ED and natural disasters (UNICEF, 2021a), which has grave implications for a young child's full and effective enjoyment of childhood (Save the Children, 2021). At all levels, CC&ED impact child rights, with children in low- and middle-income countries bearing a significant brunt of losses and damage with respect to health and human capital, land, culture, indigenous knowledge, and biodiversity (UN Conference of the Parties, 2013).

The climate crisis is a child rights crisis.

UNICEF, 2021b

They [children] have their whole life ahead of them – any deprivation as a result of climate and environmental degradation at a young age can result in a lifetime of lost opportunity.

UNICEF, 2021a

UNICEF (2021a) have outlined the various reasons for the disproportionate impact of CC&ED on children:

- **Children are particularly vulnerable to the impacts of extreme weather, droughts, and floods.** Physically, they are less capable of controlling their level of exposure – both in terms of protecting themselves from immediate danger, as well as in regulation of body temperature.
- **Children are particularly vulnerable to toxic environmental hazards and stresses.** Physiologically, even trace amounts of toxic chemicals can be harmful to children. Children require more food and water per unit of body weight, relative to adults, and they breathe twice as fast as adults. In instances where air, water and/or food are contaminated, children will be disproportionately impacted. While a child's body continues to develop, they are not as well equipped to handle toxic substances, relative to that of an adult. Early exposure to toxic substances can have lasting consequences for brain development and lung capacity, resulting in various other challenges such as cognitive delays.
- **Children are more susceptible than adults to infectious diseases.** Close to 90% of the global burden of disease associated with climate change will fall to children from birth to 5 years of age.
- **Children's entire lives will be impacted.** The climate crisis will result in a plethora of lost opportunities for future generations. The planet will be a more dangerous place to live, children's ability to learn will be negatively impacted, and disasters will be more frequent, prioritising life and livelihood over education and fulfilment.

The consequences of CC&ED for ECD are extensive. The environmental changes that occur as a result of CC&ED impact children's physical health and growth, as well as their psychological development and mental wellbeing. Increasing urbanisation and changes to weather (such as

heat waves, flooding, and drought) directly impact the spaces that children grow, learn, and play in (WHO, 2018). 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, food, and transport, all of which can have far reaching impacts on children's learning, development, and wellbeing. Children experiencing the impacts of CC&ED can lose critical months or even years of education (UNICEF, 2021b). The ongoing impacts of the current climate crisis are already directly affecting the future of today's children. This is further exacerbated by the ever-present dangers of geophysical disaster risks such as earthquakes, volcanic eruptions. According to Global Assessment Report on Disaster Risk Reduction 2019, earthquakes "have been responsible for an average direct death toll of over 20,000 people per year in the last several decades and economic losses that can reach a significant fraction of a country's wealth" (UNDRR, 2019).

The impact of the climate crisis is especially concerning for young children living with disabilities, cognitive and learning impairments, living in poverty and/or within marginalised communities. From a sustainable development perspective, individual vulnerabilities equate to increased vulnerability at a community and national level, proving a significant setback to meeting the sustainable development goals. Failing to protect the future of today's children by ignoring the impact of CC&ED creates a cycle of disadvantage and intergenerational inequity.

While Early Childhood is a time of significant possible disruption to a child's development, it is also a time of significant opportunity. UNICEF (2018) has estimated that for every US\$1 invested in a child's first 1000 days, there is a future return of US\$13. Providing consistent investment in children's by enabling them to access nurturing care is an investment in a country's future. As our future leaders, and the ones who are most directly impacted by the effects of CC&ED, children have the most potential to build successful and resilient communities of the future (ARNEC, 2022). Children are active participants in society and have their own perspectives to bring to discussions of climate change and policy development. Investment in early childhood development offers a way forward for sustainable development to ensure long-term resilience and sustainable futures.

Despite the direct impact interventions in early childhood can make towards mitigating the effect of CC&ED (e.g., CCC, 2015), the specific effects of CC&ED on ECD are frequently overlooked in research and policy development. Policies typically do not give specific consideration to the needs and rights of children and, in 2020 (Pegram & Colon, 2020), only 42% of Nationally Determined Contributions (NDCs) included direct reference to children. Subsequent new and updated NDCs showed an improvement to 72% of inclusion of child sensitive words (UNICEF, 2021c), but NDCs do not disaggregate age groups of children, so the youngest children's specific needs are often not included.

While it is evident that children are disproportionately impacted by CC&ED, in a multitude of ways, **what is not clear is the differential impact on young children at distinctive stages of development.** This is a significant gap and limits the capacity to anticipate and respond to the very different needs of children within distinctive developmental windows. Moreover, while disasters research has shown that the social characteristics of adults (age, bodily ability, gender, etc.) define their disaster vulnerability, children often still tend to be treated as a homogeneous group, and the impacts on the early childhood period (<8 years) are disproportionately under researched. This reality means that the factors that might make some children more vulnerable than others will likely be poorly understood or even ignored. For example, research by Le Masson et al. (2016) suggests violence against girls increases after disasters, and reduced access to education increases their vulnerability. Equally, children with a disability face a range of challenges that other children do not (see Peek et al., 2010). In sum, the stage of development (e.g., even defined crudely as prior to school age versus school age) and the individual characteristics of children (e.g., gender, experience of a disability, etc.) are likely to be of significance when considering the impacts of CC&ED on their development and we do not currently have mechanisms to reflect these important distinctions in our planning and responses.

Below the impacts of CC&ED on ECD are explored across the early childhood period, operationalised in the following age groups:

- conception and pregnancy
- birth to 2 years of age (infancy and toddlerhood)
- 3 to 5 years of age (preschool)
- 6 to 8 years of age (early primary school)

This grouping reflects work increasingly completed in research and policy that recognises there is a shift from a predominant focus on health and general well-being in infancy and toddlerhood to school readiness as children pass through the preschool years (3 to 5 years), which then moves into a stronger emphasis on formal education and curriculum for children from 6 to 8 years. Equally, the prenatal period has emerged as distinctive lens for development that shifts focus to maternal education and wellbeing, service provision and early risk (e.g., environmental teratogens, stress and violence, nutrition, etc.). Investing in health, wellbeing, and education in early childhood presents a powerful opportunity to address poverty and inequality with a focus on future social and community growth and prosperity.

3.3 Conception and pregnancy

During the first 1000 days of life, starting from the day of conception, children's tissues and systems are highly responsive to environmental changes. Response and adaptation to external stimuli can have lifelong impacts on health and wellbeing. Critical environmental factors include maternal physical and emotional health and nutrition, infection, stress and exposure to environmental toxins. A foetus' adaptation to manage changes in the environment can come with distinct long-term costs, particularly when considering neurodevelopment. Evidence also suggests that epigenetic changes can be inherited, and intergenerational trauma increases disease risk for generations even if the source of the trauma or environment is addressed (Moore, et. al., 2017).

Examples of specific environmental impacts on children's development and wellbeing include:

- In-utero exposure to family stress and trauma as a result of CC&ED (including access to adequate nutrition, reduction on family income and disruption of access to safe housing) can impact key immune cells and lead to ongoing inflammation and other chronic diseases (Moore, et. al., 2017)
- There is a clear association between high levels of air pollution and foetal loss, pre-term delivery, lower birthweight, and infertility (UNICEF, 2021b)
- Exposure to mercury and other environmental contaminants in-utero (teratogens) affects foetal brain development (World Health Organization, United Nations Children's Fund, World Bank Group, 2018)
- A foetus uses maternal nutrition as an indicator of nutritional availability and develops accordingly (Moore, et. al., 2017). If the mother does not receive adequate nutrition as a result of CC&ED, the foetus will react through the development any number of immune responses (dependent on nutrient deficit and other environmental factors). Such responses can lead to lifelong immunological impacts, including the potential for the child to be more susceptible to a number of diseases through their life (Moore, et. al., 2017).
- Depending on which stage of neurodevelopment a stressful or traumatic experience (such as the impacts of a natural disaster) or exposure (such as exposure to toxins in food or water) may occur, a variety of central nervous system disorders may develop (e.g., cerebral palsy, intellectual disabilities; Moore, et. al., 2017)

POTENTIAL OPPORTUNITIES

Reversing the impact of early adaptations and inheritances becomes significantly more difficult after they have developed in pregnancy. The traits a foetus develops in response to its environment often become fixed biological traits of the child. However, this means that pregnancy is a clear period of opportunity to address some of the key concerns that impact development and ongoing quality of life. Some of these opportunities include:

- Ensuring access to healthy and affordable food and clean drinking water for the pregnant parent
- Reducing the percentage of environmental contaminants in air, water, and soil
- Relieving family stress brought on by unstable housing, lack of food, or unstable income in climate crisis and during climate shocks through targeted government support programs
- Restoring access to basic services such as healthcare, water and sanitation as well as supporting breastfeeding, after a natural disaster
- Including disaster risk reduction and management (DRRM) and climate change adaptation as part of the programs that will deliver behavioral changes in response to health, education, and disaster risk reduction
- Ensuring access to early detection structures for impairment screening, developmental monitoring and pregnancy and pre-birth assessments

3.4 Birth to 2 years of age

After birth, there is still significant development happening in a child's body. Infant's brains and nervous systems are directly affected by environmental impacts and exposures. Children play and interact in environments that can be contaminated by air and soil pollution. Children may be drinking polluted water sources from industry and contaminated rainfall, water supply disruption due to natural disasters events or eating food that does not meet their nutritional needs due to cost and availability. Even low-level exposure to environmental toxins can have a marked impact on a child's developing nervous system and brain development, particularly in their first 1000 days of life (including days since conception) (Moore, et. al., 2017). In turn, the damage from these toxins can lead to issues with cognition, social and emotional behaviour, limiting the opportunity a child has to learn, develop and participate in learning and development, and the wider society.

Examples of specific environmental impacts on children's development and wellbeing include the following:

- Heatwaves impact children under 12 months most significantly as they are unable to regulate body temperature, communicate discomfort clearly or control their environment (UNICEF, 2021b)
- Restricted access to adequate nutrition due to drought or flooding stunts physical growth and development. This includes access to breast milk during the first 12 months so the breast-feeding parent's nutrition and their ability to take the time to breastfeed is of equal importance (Innis, 2014)
- Exposure to lead, especially critical at this young age because they crawl around and put their hands and other things in their mouth. It can lead to damage to the brain and nervous system, slowed growth and development, learning and behavior problems and hearing and speech problems (Nicholas and Richard, 2020)
- Service disruptions due to natural disaster events restricts access of young children and their families to basic services such as vaccinations, health check-ups, early learning services, parenting groups etc.

POTENTIAL OPPORTUNITIES

Creating a sustainable environment that reduces children's exposure to modifiable environmental hazards goes a long way toward addressing these issues and impacts. Opportunities include:

- Ensuring access to clean water and sanitation, uncontaminated by environmental pollutants from industry and agriculture
- Ensuring that water supplies are not disrupted during disasters (e.g., placing water pumps at higher ground, having preparedness plans to quickly restore access to WASH services)
- Supporting education programs for both parents and children around appropriate sanitation
- Providing affordable or subsidised food to families with young children
- Monitoring and referral to specialised medical care and psycho-social support, if the child is at risk or with disabilities
- Promoting early stimulation that caregivers can give to their children at home
- Creating both education programs around the importance of temperature regulation and opportunities for cooler spaces in communities during times of significantly increased temperature and drought
- Establishing an Education sub-cluster on ECE for all ECCD stakeholders to have a platform for response programs and advocacy
- Including disaster risk reduction and management (DRRM) and climate change adaptation as part of programs that will deliver behavioral changes in response to health, education and disaster risk reduction
- Promoting and establishing responsive breastfeeding to optimise children's nutritional and cognitive outcomes, as well as alleviating maternal depressions
- Ensuring CC&ED and natural disasters are integrated into ECD policies

3.5 Three to 5 years of age

By 3 years of age, children are entering another key stage of development and building their physical strength and emotional skills. Children start exploring life outside of the family or nearby community to develop their language and communication skills, build their confidence and develop physical independence. Children are still highly reliant on their immediate family responsive caregiving and achieving developmental milestones. Children between 3 and 5 years old are also still rapidly growing, developing physically, emotionally, and intellectually.

Examples of specific environmental impacts on children's development and wellbeing include:

- Restricted access to clean, green, protective play spaces and safe spaces (e.g., structures in flood plains and landslide zones put children at risk of disaster) through increased urbanisation and development prevents children from getting enough physical movement and can discourage the development of social relationships between both peers and caregivers through active play (WHO, 2019)
- Flooding can lead to an increase in insect populations including infectious mosquitos. Children under 5 make up 67% of global malaria deaths 2019 (UNICEF, 2021b)
- Restricted access to adequate nutrition can impact a child's ongoing cognitive development and physical development and has lifelong health impacts (Jarman, et.al., 2022)
- Childhood toxic stress due to unstable home environments can disrupt the continued development of the brain and increase the risk for stress-related disease and cognitive impairment (ARNEC, 2022)

- Children whose carers need to work full time to address climate related shortages (due to drought, fire, flooding or climate shock) missing out on crucial exposure to early learning and language through adult interaction or early schooling/childcare (Yoskikawa, et. al. 2020)

POTENTIAL OPPORTUNITIES

- Parent education programs about early childhood learning and supporting their child where possible, including consideration of climate stress and shock and disaster risk reduction education. This may include climate adaptation strategies that families can take into their homes.
- Provision for family education and development programs focused on building resilience and ensuring child participation in family decision-making in preparation for active engagement in formal education.
- Providing clean green and safe spaces for children to play, move and learn that are not contaminated with environmental pollutants (including reducing air pollution) and are not exposed to natural hazards such as floods, landslides, or tsunamis (World Health Organisation, 2017). These spaces should have environmental preparedness and evacuation plans in place to safely evacuate children and have solutions in place to ensure safe reunification with families after a disaster.
- Government funding to support families to stay where they are or to move as a group to a more stable location (e.g., away from a flood zone). This funding should include provision to support children and their families to cope with the ongoing impacts of CC&ED. In this period of development, children are building a sense of themselves as social participants, with obligations and responsibilities to others. During this time, children's awareness of their own roles in responding (at a domestic and local level) to the challenges of CC&ED can be cultivated in developmentally appropriate ways through the integration of CC&ED in preschool curriculum and teacher education programs.
- Disaster risk reduction and management (DRRM) and climate change adaptation as part of the programs that will deliver behavioral changes in response to health, education, and disaster risk reduction.

3.6 Six to 8 years of age

Most children turn 6 in their first year of formal education program. Early childhood investment is an opportunity for sustainable development and a way to ensure long-term resilience and sustainability. Investing in environmental and social education for young children can provide them with the knowledge, agency, and opportunity to impact the development of the world they are living in. Children are the future custodians of the environment and can start to build their sense of agency and responsibility to engage with the problems facing their communities and societies during this time.

Examples of specific environmental impacts on children's development and wellbeing include the following:

- Reduced access to education due to more pressing needs to find food, water, or money to support their families (Faustini, 2014)
- Reduced focus when attending school due to heat and hunger (UNICEF, 2021b). Exposure to higher-than-average temperatures during early childhood was also associated with fewer years of schooling in Southeast Asia, across all household income levels, significantly reducing elementary student learning and achievement (Randell & Gray, 2019).
- The environmental stability needed for learning and emotional stability is potentially constantly under threat or undermined (Pegram & Colon, 2019)

- Adverse childhood events create toxic stress leading to earlier death and increased risk-taking behaviour (Pegram & Colon, 2019)
- Increased risk of mental illness and a rise of infections and chronic diseases due to reduced access to healthcare services (UNICEF, 2021b)

POTENTIAL OPPORTUNITIES

- Empowerment of children through education and participation improves their adaptive capacity and equips children to be active agents of change (UNICEF, 2021b)
- Environmental education informs the lifestyle decisions children make as they grow and develop to reduce their carbon footprint, address environmental pollution, while also potentially contributing to the development of transformative solutions (UNICEF, 2021b)
- The implementation of disaster risk reduction frameworks (such as the Sendai Framework for Disaster Risk Reduction (SFDRR, 2015) and Comprehensive School Safety Framework (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, 2022) by Early Childhood Education centres can build resilience during extreme weather and other geophysical disasters, and avoid the closure of schools
- Disaster risk reduction and management (DRRM) and climate change adaptation as part of the programs that will deliver behavioral changes in response to health, education, and disaster risk reduction

3.7 Summary: Impact of CC&ED intervention on ECD

Close consideration of children's earliest years is of critical importance in the development of any CC&ED intervention. This follows from a consideration of their rights (to health, education, family life, protection and participation in society) and also from any reflection on the compounded return of investment made to address the impact of CC&ED on early childhood. Here, the early years includes the pre-birth period when fixed biological traits are being developed, as well as consideration of the wider family, community, and environment in which the child lives.

Young children are vulnerable, but ECD is a key building block in sustainable development. By considering the impacts of CC&ED on today's children, there is the opportunity to not only improve their lives now, but also to secure a stronger future for a whole community. Building resilience through ECD is not merely a response to our most vulnerable citizens, it is also an act of empowerment (see section 11.2).

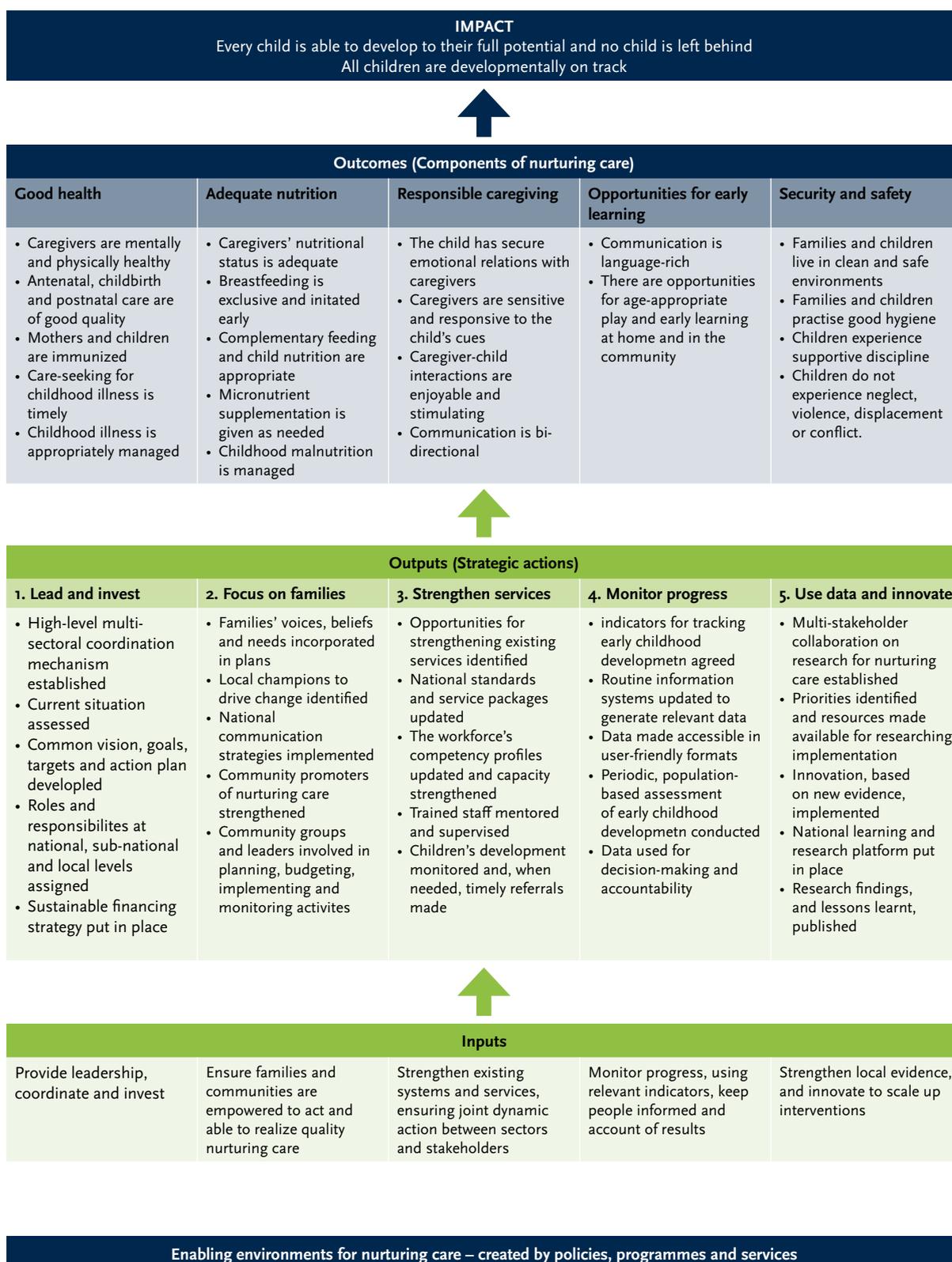
4. Mapping Impact: The Nurturing Care Framework

The Nurturing Care Framework (NCF) for early childhood development was developed by WHO, UNICEF and the World Bank Group (2018) in collaboration with the Partnership for Maternal Newborn and Child Health, the Early Childhood Development Action Network, and others. The framework provides an evidence-based and clearly structured template for supporting the holistic development of children from pregnancy to 3 years but is also aligned with older children's needs in the prior-to-school period. The aims of the NCF are to address the needs of children through inspiring multiple sectors to work in new and collaborative ways with clearly defined goals to provide children with nurturing care. The NCF is a consensus model linked to evidence-based tools and practices, and, as such, has tremendous potential to inform national and international ECD policy.

The NCF logic model (Figure 2) and guiding principles provide a thoughtful and thorough starting point to approach the differentiated child-level outcomes to impacts of CC&ED. Similarly, the Inputs and Outputs (Figure 2) provide a structure that can be used to interrogate alignment between ECD and current policies, programs, and funding initiatives to address the impacts of CC&ED.

Nurturing care encompasses a set of five interrelated components including: (1) good health, (2) adequate nutrition, (3) security and safety, (4) opportunities for early learning, and (5) responsive caregiving. The NCF for ECD urges policymakers and stakeholders to consider actions in relation to the needs of children within familial and community contexts. This report draws upon the NCF to inform analysis and in the consideration of case studies when exploring the effects of CC&ED focussed programs on ECD. Additionally, the NCF was used to guide recommendations and areas of policy opportunity.

Figure 2. Nurturing Care Framework Logic Model (WHO, UNICEF and World Bank Group, 2018)



4.1 Impacts of CC&ED on ECD: Mapping to the Nurturing Care Framework

In 2022, the Asia-Pacific Regional Network for Early Childhood (ARNEC, 2022) released a statement on the latest Intergovernmental Panel on Climate Change (IPCC) report, *Climate Change 2022: Impacts, Adaptation and Vulnerability*. The IPCC is the world's leading authority on climate science, and the report assesses the impacts of climate change with consideration to human communities at global and regional levels. ARNEC's commentary highlights the link between the key messages of the IPCC report and implications to ECD. ARNEC concluded that the IPCC report highlights the significant vulnerabilities of human societies and their limited capacities to adapt to climate change. ARNEC noted the following key points:

1. Climate change exacerbates inequalities. The consequences for vulnerable populations – notably, young children – remain significant
2. Immediate action is necessary to shape young children's futures in ways that are more protective or resilient to climate change
3. Human development measures are integral to the promotion of sustainable development

In light of these points, the NCF is used below to frame and reinforce the impact of the climate crisis on ECD by focusing on the ways in which CC&ED affect children's good health and their access to adequate nutrition, as well as the impacts on their responsive caregiving relationships, opportunities for early learning, and their experience of security and safety. For each area identified in the NCF, we first define the aspect of nurturing care. We then provide a high-level overview, based on existing literature and evidence, of the current and anticipated impact(s) of CC&ED on each aspect of nurturing care.



GOOD HEALTH

Health has a significant impact on how children develop. Good health is associated with active exploration and learning. In describing good health, the NCF (WHO, United Nations Children's Fund, World Bank Group, 2018) notes the following key considerations for a young child's development:

- The quality of antenatal, childbirth and postnatal care is good
- Children are supported by caregivers who are mentally and physically healthy
- Caregiver(s) and child are immunised
- Childhood illness is treated with care in a timely, attentive, and effective manner

Quality care comprises opportunities that promote both physical and mental health of the child. Adger et al. (2014) underscored how worsening CC&ED adds to further **conflict** in areas where there are complex relationships between socio-economic and political factors. In conflict-affected settings and during natural calamities (e.g., earthquakes, floods etc.), children have limited access to necessary services. This presents a significant threat to quality care and livelihoods. Save the Children (2021) assert that, without necessary social and emotional support services, exposure to stressful events, such as displacement due to a climate change related extreme weather event, can have lifelong impacts on mental health. Physically, children are at increased risk of death, injury, violence and attacks, which – if they survive – can result in long-term impairments. Children's nervous systems absorb greater amounts of **toxins** than adults (4 to 5 more times lead) (Moore et al., 2007). The presence of environmental toxins during and after pregnancy has a significant, negative impact on a child's health and wellbeing. Toxin exposure can permanently alter brain development and function in a child (Moore et al., 2007).

Heat waves lead to **exhaustion and stroke**. **Dehydration and fever** can occur due to heat stress, which are a prevalent cause of hypothermia and death in babies and young children (UNICEF, 2021b).

Air pollution can lead to the development of **numerous respiratory issues** with long lasting damage to health and wellbeing (e.g., asthma, bronchitis; Save the Children, 2021). Pollution affects children's cognitive development in utero and in early childhood (Save the Children, 2021; Nicholas, 2017). While this certainly applies for acute and devastating disasters, such as bushfire/wildfires, it also applies to daily exposure. More than 90% of children across the globe are breathing in fine particulate matter that is damaging to their lungs and growth (World Health Organisation, 2018).

Further to this, outdoor air pollution can lead to limited opportunities for **outdoor play**, and lack of **exposure to green spaces**. The Raising Children Network (2022) underscores the benefits of outdoor play for young children across the development stages. Outdoor play has various positive health benefits. It promotes engagement with the natural environment, development of motor skills and fitness, exposure to sunlight for Vitamin D, and mental relaxation. Similarly, the World Health Organisation (2017) asserts that access to green spaces (e.g., parks, playgrounds, residential greenery) promotes mental and physical health, including stress reduction and relaxation, social cohesion, and physical activity.

ADEQUATE NUTRITION

When a child is well nourished, they have access to adequate calories and nutritional content. Also, they have access to clean water. When children have access to adequate nutrition, they are well placed to develop mentally, physically, and socially. Adequate nutrition is also essential to preventing illness. In describing adequate nutrition, the NCF (WHO, United Nations Children's Fund, World Bank Group, 2018) notes the following key considerations for a young child's development:

- The infant is exclusively breast fed for the first 6 months of life (only receives breast milk without any additional food or drink) and this is initiated as early as possible and then begins complementary feeding until 2 years of age (WHO, 2022)
- Caregivers are well nourished, especially pregnant mothers
- Where necessary, micronutrient supplementation is provided, including maternal supplementation
- Childhood malnutrition is suitably managed

Estimates suggest half a billion children live in flood-prone areas and 920 million children are exposed to water scarcity, including drought (UNICEF, 2021b). Having **access to clean water** prevents children contracting water borne diseases (e.g., cholera and typhoid) or infection by water borne insects (e.g., malaria and dengue). Waterborne infections can cause diarrhoea, one of the biggest killers of children globally (UNICEF, 2021b).

CC&ED will result in sudden **decreases in food production and access to food**, including food that is culturally 'known', as well as **decreased diet diversity** (IPCC, 2022). Already, communities are facing **increased malnutrition** – particularly those most vulnerable (e.g., Indigenous Peoples, low-income households with children and pregnant women).

Children are more **vulnerable to food scarcity** than adults due to their higher need for food per unit of bodyweight (Save the Children, 2021). Drought, flooding, and heat lead to crop failure and increased food costs. Food insecurity and nutritional deprivation have lifelong impacts. In childhood, food scarcity can result in stunted growth and development (Pegram & Colon, 2020). It is well established that maternal nutrition has an impact on various aspects of a child's development (Moore et al., 2007), such as growth and brain development. Similarly, in infancy, inadequate nutrition can lead to deficits in neurological functioning and increased risk for various diseases (Innis, 2014).

RESPONSIVE CAREGIVING

Affectionate and responsive caregiving, provided by adults (e.g., caregivers, parents, and educators) and reinforced through communication and play, is critical to a child's development. In describing responsive caregiving, the NCF (WHO, United Nations Children's Fund, World



Bank Group, 2018) notes the following key considerations for a young child's development:

- The child has secure emotional attachments with caregiver(s)
- Caregivers respond – and are sensitive to – the child's cues
- Caregiver-child interactions are stimulating and enjoyable
- Communication is bi-directional between the caregiver and the child

Much of a child's development is influenced by parental and family characteristics (Moore et al., 2007). There exists a complex interplay between quality of parenting, the child's own personal characteristics, and the social and physical environment in which they are nurtured (Moore et al., 2007). CC&ED may result in: loss of caregiver(s) in the short- or long-term, and/or increased parental stress. Stress may occur due to actual emergencies related to CC&ED, for example, loss of income, shifts in perceptions of safety, and/or safety fears for their children. The stress and potential trauma of CC&ED impacts may result in caregivers being unavailable, unresponsive, or unpredictable in responding to their child's needs, exacerbating the likelihood of **difficulties in the attachment** relationship arising (Mikulincer et al., 2003). In the short- to medium-term, interrupted attachment (losing access to a caregiver) can result in despair and apathy, crying and searching for the caregiver(s), and/or emotional detachment. In the long term, interrupted attachment is implicated in social and emotional maladjustment in adulthood (Benoit, 2004). In addition, other caregivers (e.g., grandparents) in a child's expanded network of care may also become inaccessible due to stress, or completely unattainable geographically.

Severe or chronic disasters and/or CC&ED are likely to result in displacement in areas of significant threat and vulnerability caused by CC&ED. The **instability associated with displacement** presents challenges to responsive caregiving. Affordability of secure housing is a key consideration that disproportionately affects low-income households (Moore et al., 2007). Displacement and high housing costs can negatively impact children, resulting in financial hardships, which in turn negatively impacting parenting capacity and mental health (Leventhal & Newman, 2010). Caregivers facing financial hardship are at increased risk of family and partner conflict, increasing the likelihood of poor-quality interactions between parents and children (Leventhal & Newman, 2010).

Trauma disrupts the way a child – or caregiver – relates to, interprets, and responds to the world around them (Moore et al., 2007). Climate change is resulting in higher frequencies of intense disasters, which increases the prevalence of a child's depression, anxiety, and/or post-traumatic stress (Harvard School of Public Health, 2022). Further, air pollution has been linked to children experiencing more symptoms of anxiety and depression (Harvard School of Public Health, 2022). Moreover, in the long-term, intergenerational trauma impacts the structural formation of the brain, impacting future generations (Bednarek, 2021). Similarly, **toxic stress** – where a child experiences strong, frequent and/or prolonged adversity (e.g., exposure to the accumulated burdens of family economic hardship without adequate adult support) – has profound impacts on young children's brain development, health, and relationships (Harvard Center on the Developing Child, 2022).



OPPORTUNITIES FOR EARLY LEARNING

In the early years, skills are developed interpersonally through imitation, play, modelling and interactive communication. Learning is a built-in mechanism ensuring children's adaption to changing circumstances. In describing opportunities for early learning, the NCF (WHO, United Nations Children's Fund, World Bank Group, 2018) notes the following key factors that support a young child's early learning:

- Language-rich communication
- Development of executive function skills (cognitive skills such as organisational strategies and working memory or recall skills) and self-regulation skills (emotional skills)
- Opportunities for age-appropriate play and early learning within the home and in the community that lead to school readiness (learning to learn and engage in different ways)

Flooding and other extreme weather/disaster events can prevent children from **accessing schools, other learning services, and community resources**. Extreme heat events can also impact education attainment and result in lower learning outcomes (Save the Children, 2021). Children are highly affected by a rise in temperature and can become dehydrated or get heat stroke. High heat can also make it difficult for children to focus and retain information in the classroom.

In extreme weather events, **schools and transportation infrastructure may be destroyed** (Pegram & Colon, 2020). In many instances, flexible and accessible distance learning programmes are not an option when schools are closed (Save the Children, 2021). Thus, the impact of a singular climate event can last long after the event itself.

Save the Children (2021) note that many low- and middle-income communities are becoming uninhabitable due to CC&ED, resulting in **displacement**. Relocation due to climate change related weather events, including floods and droughts, increases the risk of reduced access to critical health and education services. In some circumstances, families are relocated to regions where they are still at risk of extreme weather events, with fewer resources and support.

SECURITY AND SAFETY

Young children need safety and security, inclusive of safe drinking water and sanitation, as well as safe play spaces in rural and urban areas. It is also important to prevent child abuse, neglect, pollution, family violence, and harsh punishment, to ensure the best outcomes for young children. In describing security and safety, the NCF (WHO, United Nations Children's Fund, World Bank Group, 2018) notes the following key considerations for a young child's development:

- Caregivers, children, and their families live in clean and safe settings
- Caregivers, children, and their families practise good hygiene
- Children experience supportive discipline (i.e., stopping misbehaviour early by engaging children's self-control)
- Children do not experience neglect, violence, displacement, or conflict

Adverse childhood events, including disasters, lead to **toxic stress**, which in turn is connected to early death, high rates of cancer, and an increase in risk taking behaviour (Pegram & Colon, 2020).

The climate crisis will impact **access to stable and adequate housing** for many families. This is a basic human need (Maslow, 1948) with significant implications for the health and wellbeing of children and families, undermining their autonomy and security, which limits their exposure to positive social, educational and community experiences (AIHW, 2010).

Children's **interpersonal relationships** are central to their development (Moore et al., 2007). Parenting behaviour can be altered, in the short- or long-term, as a result of CC&ED. For instance, catastrophic and acute events (e.g., tropical cyclones, wildfires, flooding) can lead to stress and anxiety. **Parental stress** can manifest in behaviours such as using inconsistent discipline strategies and a lack of warm and gentle interactions (Lengua et al., 2000). In more extreme circumstances, this may lead to violence and neglect and can have significant negative implications for the child, including increased insecure attachment, fearfulness and self-regulatory difficulties (Benoit, 2004).

Most children are aware of climate change and are concerned about its impact on them (Australian Institute for Disaster Resilience, 2020). This includes children who are yet to experience a climate event first-hand, with children experiencing fear and anxiety, and a **perceived lack of safety** (Burke, Sanson & van Hoorn, 2018). This 'eco-anxiety' can be debilitating for many children, resulting in nightmares, despair and other concerning behaviours (Burke et al., 2018). However, research has largely focused on children and 'youth' broadly without specifically focusing on young children.



5. Global Snapshot: Policies, programs, and funding

It is generally accepted that responding to climate change includes mitigation and adaptation, defined as follows,

1. **Mitigation** (i.e., reducing climate change) - reducing emissions with a goal of avoiding significant human interference with the climate system
2. **Adaptation** (i.e., adapting to a changed climate; actual or expected) - reducing vulnerability to the damaging impact of climate change and making the most of potential opportunities associated with climate change (e.g., longer growing seasons)

Globally, the impacts of CC&ED are starting to be factored into a variety of development plans. This has included advancements in climate change policies and programs over the past century.

Although children are particularly vulnerable to the impacts of CC&ED (CCC, 2015; Thiery et al., 2021), it is recognised that they can be empowered to act as *agents of change* through the course of their development and lives. Children, including young children, ought to have the option to actively participate in the decision-making processes, including policies and programs, that will impact them now and into the future; their knowledge, consciousness and understanding of the challenges presented by CC&ED and our responses to them will better prepare them to embrace their roles in the future as agents of change and adaptation.

In this Chapter, we provide a snapshot of opportunities and gaps in current policies and programs that are trying to address the impact of CC&ED on children. First, we explore a global call to action and the steps that have already been taken by global policy makers (sections 5.2 and 5.3). Then, we consider changes that have been made at a national level by exploring case studies of current policies and programs across the globe (section 5.4) before narrowing the focus and considering the actions of policy makers in the Asia Pacific region (sections 5.5 and 5.6).

The case studies explored are a sample of the significant amount of work being conducted globally. Various peak bodies are prioritising urgent action toward more child-friendly climate policies and programs. Other studies have evaluated global policies with reference to children in detail, most notably the UNICEF 2021 discussion paper on the presence of children in both policy development and the 2020-2021 Nationally Determined Contributions (NDCs; UNICEF, 2021c). In their paper, UNICEF evaluates the NDCs of 103 countries to identify child centred policy. UNICEF identifies a clear gap in including the needs, priorities, and perspectives of children and young people across the world and provides targeted guidance for policy makers to address this gap, although notably specific needs of young children are not brought out. Section 5.7 comments on the importance of including CC&ED in ECD policy, and section 5.8 provides a brief summary of the current state of affairs by looking at both the gaps in policy and the opportunities that exist to make change.

To further the work of UNICEF (2021c), Chapter 6 considers current policies and programs in light of the NCF. The NCF operates as a tool to examine the policies and programs below holistically, considering both their strengths and potential areas of need. The child centred approach taken throughout this paper leverages the work already done by the NCF. Through this

lens, Chapter 6 works to frame the discussion around policy and programs in reference to the youngest and most directly impacted children by considering specific links to the period between conception and age 8.

5.1 Call for action

In 2021, a joint statement by the Early Childhood Development Action Network (ECDAN), Asia-Pacific Regional Network for Early Childhood (ARNEC), UNICEF, and Save the Children, in collaboration with other global, regional, and national partners, presented four priority actions to place children at the forefront of climate change discussions and policies. These four priorities are repeated below (ARNEC, 2021a):

1. Ensure that global and national climate-sensitive policies, national adaption plans, and disaster risk management plans address the direct and indirect impacts of climate change on the youngest children and support programs and services in the early years to build preparedness, resilience and adaption for young children, and their families and communities.
2. Increase investments which promote the nurturing care of young children, particularly good health and nutrition, early learning opportunities, responsive care, and security and protection and targeting the most vulnerable and marginalised groups of young children in lower- and middle- income countries where inequalities have been exacerbated by the combined effects of the climate crisis, hazards and risks from environmental degradation and the COVID-19 pandemic.
3. Build evidence through research and evaluation to inform policy choices and investment decisions and raise awareness on the central role of ECD in protecting young children from the lifelong impacts of climate change, and effectively monitor and track impact on their health, wellbeing, and development.
4. Empower civil society to implement locally led and child-sensitive actions on climate change, ensuring that the voices of the youngest children – as future custodians of our planet – are heard, both directly and indirectly through their parents, caregivers, and communities, and integrate in early learning programs and services.

Many global and national policies have been developed with the specific goal of reducing the impact of CC&ED through the reduction of greenhouse gas emissions, increasing community resilience, and ensuring funding is available for mitigation and adaptation strategies.

5.2 Existing global policies

Globally, there exist various policies targeted toward climate change mitigation and adaptation. They each acknowledge the impact of CC&ED on children, to varying degrees. A snapshot of existing global policies is included below, with consideration to young children and selected elements of the Nurturing Care Framework.

5.2.1 THE PARIS AGREEMENT

The Paris Agreement (United Nations, 2016) was established to limit global warming and reach global peaking of greenhouse gas emissions as quickly as possible. The agreement is significant as it is a binding agreement bringing together over 196 nations toward mitigation and adaptation efforts in relation to climate change. The agreement specifically notes consideration for the human rights of vulnerable groups, including children. The Paris Agreement is one of the most important tools for protecting the quality of life of children (UNICEF, 2020b).

Implementation of the Paris Agreement will encourage achievement of the Sustainable Development Goals and, in this respect, it prioritises protection and respect of human rights in all climate changes. This includes the rights of children but it does not specifically differentiate between the needs of children at different developmental stages with regard to important considerations such as responsive caregiving, nutrition, safety and security, and opportunities for early learning. Importantly, children and young people are encouraged to speak up in establishing and implementing national plans and climate targets (UNICEF, 2020b). However, further work is needed in terms of establishing specific actions to ensure consideration of the rights and needs of children in the early years.

5.2.2 GLASGOW CLIMATE PACT

A key outcome of the COP26 was the Glasgow Climate Pact (UNFCCC, 2021). The aim of the pact is to underscore commitment to climate action and support over the next decade. This includes actions such as reducing greenhouse gas emissions, building resilience, and establishing funding mechanisms to ensure the former two are adequately supported. Developed nations reaffirmed their commitment to provide funding toward climate action and support efforts.

The Glasgow Climate Pact encourages achievement of the Sustainable Development Goals. In this respect, it prioritises protection and respect of human rights in all climate actions, and this includes the rights of children. However, the pact does not specifically differentiate between the needs of different developmental stages with regard to important considerations such as responsive caregiving, nutrition, safety and security, and opportunities for early learning. It does encourage children- and youth-led dialogues to be part of future action for climate empowerment. More is needed to acknowledge and counteract lost opportunities for children as a result of climate change and its impacts.

Although children are alluded to in the Glasgow Climate Pact, young children are not. There is no distinction made between *young children, school aged children and youth*. More focus is needed to underscore the needs of young children from birth to 8 years, as well as in the prenatal period, in terms of both the impact of climate change on their wellbeing and development, and how investment in early childhood can support climate adaptation and sustainable futures (ARNEC, 2021b).

5.2.3 SENDAI FRAMEWORK FOR DISASTER REDUCTION 2015-2030

The Sendai Framework for Disaster Reduction 2015-2030 (United Nations Office for Disaster Development, 2015) was adopted at the Third United Nations World Conference on Disaster Risk Reduction in 2015. It specifies clear targets and priorities for action toward preventing and reduces existing disaster risks. This includes measures such as understanding disaster risk, strengthening governance to manage disaster risk, and investing in disaster reduction for resilience. Its overarching aim is to reduce the number of lives and livelihoods lost to disasters, as well as maintain health, economic, physical, social cultural and environmental assets from 2015-2030.

The Sendai Framework acknowledges concerns for human health and wellbeing in relation to disaster risk reduction, climate change and sustainable development. It also recognises that children are disproportionately affected by disasters, acknowledging health impacts in the short-, medium- and long-term. The Framework suggests fortifying resilience of health infrastructure as a key strategy toward mitigation and adaptation. However, in keeping with other global policies and frameworks, it does not discuss the unique needs of children in the early years. The Sendai framework does, however, acknowledge the need to strengthen the design and implementation

of inclusive policies and social safety-net mechanisms that prioritise access to basic health-care services, including maternal, newborn, and child health, and access to education. Durable solutions post-disaster – for young children – are necessary to prioritise safety and security, responsive caregiving, nutrition and early learning opportunities for this vulnerable population.

5.2.4 ATTENTION TO EARLY CHILDHOOD IS A KEY GAP IN EXISTING GLOBAL POLICIES

While the global policies discussed above make great efforts towards controlling the impacts of CC&ED to the wider community, it is important to note that they are not child centred. Children are sometimes placed as a consideration within policy development, but not as central focus or concern, for whom certain approaches, initiatives or measures should be privileged. Opportunities for reducing negative impacts of CC&ED for children, and particularly young children, are missing or only alluded to in vague terms. Even if a policy does include measures directed at children, the term children is often used broadly to indicate people below age 16 or 18. It is important to stress that, through lifespan development from conception to adulthood, the absolute degree of development (e.g., neurological, social, cognitive, etc.) change between stages of development (e.g., infancy to toddlerhood) are greatest in the early years but these stages are rarely differentiated in existing policy and frameworks. By not choosing to specify age ranges, policies do not take the needs of specific groups of children – which can be radically different – into account. The young children who are at the forefront of this paper – birth to 8 years – will be impacted the most by CC&ED and potentially stand to benefit the most from good policy development, but they are routinely overlooked; an issue that has been recognised for many years (see, for example, CCC, 2015).

5.3 Sustainable Development Goals

In 2015, the United Nations Members States (United Nations, 2018) adopted the 2030 Agenda for Sustainable Development to provide a shared plan for peace and prosperity for all people and the planet, now and into the future. The foundation of this Agenda is shaped by the 17 Sustainable Development Goals (SDGs), which identify urgent actions for all countries worldwide – developed and developing – in a global partnership. SDG 4.2 was a milestone in the new Agenda as it was the first clear goal in reference to ECD:

We commit to providing inclusive and equitable quality education at all levels — early childhood, primary, secondary, tertiary, technical and vocational training. All people, irrespective of sex, age, race or ethnicity, and persons with disabilities, migrants, indigenous peoples, children and youth, especially those in vulnerable situations, should have access to life-long learning opportunities that help them to acquire the knowledge and skills needed to exploit opportunities and to participate fully in society. We will strive to provide children and youth with a nurturing environment for the full realization of their rights and capabilities, helping our countries to reap the demographic dividend, including through safe schools and cohesive communities and families.

The SDGs 2030 agenda included specific targets that are relevant to children's wellbeing, health, and development (e.g., SDG 1.2 - reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions). These targets recognise the importance of ECD as foundational to sustainable development. In addition, the 2030 agenda also clearly identifies targets that relate to the importance of climate change and environmental health (e.g., SDG 3.9 - substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination). Therefore, such strong links with ECD and CC&ED highlights the importance of the SDG agenda as a framework for organisations and countries to commit to when addressing ECD and CC&ED issues, policies, or programs. A full list of the SDG targets relevant to children's health and CC&ED are presented in appendix C.

5.4 National policies and programs: Case studies

34% of the 103 submitted new and updated Nationally Determined Contributions (NDC's) are considered child sensitive

UNICEF, 2021c

For actions to truly make a difference, advocacy for children must be instigated across different sectors, from government, to academia, and public and private sectors. Actions should be achievable, funded, and strategic. Child-sensitive policies are those which acknowledge children's vulnerabilities to CC&ED and underscore the role of children in influencing mitigation and adaptation to climate change (UNICEF, 2021c).

Countries across the world are making significant efforts to address the gaps explored here by the creation and implementation of child-centred environmental programs and policies. Key themes are around acknowledging children as the leaders of the future and acknowledging their unique perspectives and understandings of the world around them. Each of the policies and programs highlighted below factor in children's voices and meet various needs by providing a framework for a comprehensive and strategic approach to climate change adaptation and mitigation. The selection of climate policy is not a comprehensive review of global policy but an example of successes in child-centred climate policy development. Many NDC's are not child sensitive and do not include children in their discussion so the policies act as an example of what can be achieved in response to the gaps identified.

Within this paper, a policy is a country wide legislated change in behaviour or action. Policies are intended to have extensive and powerful impacts across a nation. A program is a targeted intervention, looking to solve a particular problem in a particular place. Programs often focus on one group within a community and are responsive to the needs of that group in the planning and execution of the program. Both have been considered below as they have different specific purposes but a shared intent: to improve the lives and futures of children and young people. The case studies have been carefully selected to represent different areas of the globe as countries and communities have unique needs in response to their environmental circumstances. By considering case studies from both global and national policies and selected national programs, a snapshot understanding of the current state of climate management strategy can be considered

5.4.1 POLICY EXAMPLE 1: ZIMBABWE (AFRICA)

Zimbabwe's National Climate Change Response Strategy (NCCRS; Government of Zimbabwe, 2019) factors in climate events such as severe drought, rising temperatures, and irregular rainfall patterns. The strategy clearly outlines risks and impacts, and associated strategies with accompanying implementation timeframes. Significantly, Zimbabwe's strategy specifically notes understanding of the significant impact of climate change on children in Zimbabwe, and suggests strategic action is necessary to prevent harm to children as a result of the impacts of climate change. Further, it specifies that children's voices should be included in the policy formulation process, and in adaptation and mitigation activities. This strategy refers broadly to children and does not differentiate between different developmental stages (e.g., infant, toddler). Inclusion of a developmental lens would encourage more specificity in planning and responding.

Zimbabwe's strategy acknowledges that 48.8 per cent of their total population is below 18 years of age and are presented with significant health risks as a result of climate change, including disease, disasters and the collapse of public service and infrastructure. They propose creating

an enabling environment that prevents harm to children and youth, including strengthening surveillance programmes that monitor human health. An approach that differentiates developmental stages and their different nuances may better support young children. Similarly, Zimbabwe's strategy notes various measures to overcome challenges such as lack of clean and safe water, through strengthening the adaptive capacity of vulnerable groups (including women and children), however more is needed to understand the implications – and associated measures – for young children birth to 8 years.

Encouragingly, in Zimbabwe's strategy it is suggested that children are provided access to the information they need to understand how climate change impacts on their rights, opportunities, and responsibilities. Further, it encourages children's voices to be included in the development of adaptation and mitigation actions and interventions. This response strategy acknowledges that climate change, and its effects, will have negative implications for children's learning. Pressures within the home environment may keep them out of school or force them to join the workforce sooner, as they lack financial and natural capital on which to fall back. Strategies include strengthening and mainstreaming climate change in all education curricula (formal and informal); providing relevant training on climate change to educators and practitioners working with children; and influencing governments to create climate and disaster management policies that address the likelihood of decreased early learning opportunities for children.

5.4.2 POLICY EXAMPLE 2: GEORGIA (EUROPE)

Georgia's Updated Nationally Determined Contribution (NDC; Government of Georgia, 2021) lays out their plan to support the country of Georgia's sustainable development whilst considering climate change and its associated challenges. The updated NDC includes a climate change strategy and action plan detailing mitigation measures and targets, and includes acknowledgement of plans to implement adaptation measures through mobilisation of domestic and international resources. This strategy refers broadly to children and does not differentiate between different developmental stages (e.g., infant, toddler). Inclusion of a developmental lens would encourage more specificity in planning and responding.

Georgia's NDC acknowledges that children are among the most vulnerable groups requiring urgent adaptation measures in relation to climate change and extreme weather events. They propose creating a national adaptation plan that specifically identifies the needs of children and parents and note intentions to continually assess climate change impacts on human health across domains of social, economic, biological, ecological, and physical systems. Differentiated plans based on developmental stages of children aged birth to 8 years are not noted, and we suggest this is a necessity. Further to this, Georgia's NDC encourages international partners to collaborate in ensuring protection programs for children and families impacted by climate change. Further, they encourage active involvement and raising awareness on climate change mitigation and adaptation, suggesting children and families speak up about the necessary measures to ensure their safety and security. Again, it will be important to differentiate the needs of different ages, birth to 8 years.

5.4.3 PROGRAM EXAMPLE 1: NATURAL PLAY SPACES IN LIMA, PERU (LATIN AMERICA)

Lima has undergone significant growth over the past decade, creating new challenges to its residents. In an effort to provide housing and essential facilities, much of the green space has been replaced by grey infrastructure. Nine square metres of green space per resident is an often referred to guide (WHO, 2017) but, in many areas, Lima has less than 3m² of accessible green space per citizen. To address this issue and to mark the 200th year of Peru's independence, the green space initiative of Limeños al Bicentenario was launched. This program transformed 19,000 m² of Lima's urban development across 11 sites. The program partnered with an initiative by Lima95 called 'Salidas Seguras' (going out safely) which is specifically designed to provide opportunities for outside play for young children, both independently and with caregivers. Child-centred spaces for play were developed with child-sized plantings and landscaping included for physically active sensory play.

These green spaces also help to mitigate the impact of heat waves and native plants have been selected to reduce any additional water burden. Green community spaces have become an alternative to shopping centres and concrete plaza and provide opportunities for active play and increased physical movement for children. Carers can engage with their children in active play and in community activities, strengthening emotional attachments between carer and child. Increased green space is linked to improved mental health outcomes for both children and adults (Roe, et. al., 2013; Ward Thompson, et. al., 2012). Urban gardening programs have been developed and community kitchens feed families healthy, affordable meals and provide flexible, local jobs to carers. Community consultation allowed for the customisation of each of the 11 spaces to the needs of the immediate community.

5.4.4 PROGRAM EXAMPLE 2: NAIROBI AND INVESTING IN SAFER SIDEWALKS (AFRICA)

Sidewalks are a simple means of enabling children and their carers to increase their movement, reducing emissions from short car journeys, and reducing injury and death for children by both vehicle accidents and direct exposure to exhaust fumes. In 2021, Nairobi Metropolitan Services announced that they would invest in over 100 km of sidewalks and cycle paths. By providing safer options for movement, this infrastructure enables children to access key resources such as schools and play spaces more easily. Children and their carers can now use these safe pathways to access local markets and community centres, play spaces and education centres. As children are often most directly located near car exhaust and other emissions due to their height, providing distance between children and exhaust fumes also reduces the prevalence of respiratory issues in children. Children and their caregivers were central to the decisions made in this large infrastructure project, with extensive consultation being undertaken with communities in Nairobi and several other African countries to ensure that the project meets the needs of those who will be using these new resources (Gilbert-Patrick, 2021).

5.5 Asia Pacific policies and programs: High-level overview

Several countries across the Asia Pacific region have developed targeted CC&ED policies through their Nationally Determined Contributions (NDCs). Each country has prioritised different strategies to address in their policy development. By considering a high-level overview of the regions policies on CC&ED and their connection to children, we can understand the possible opportunities and gaps for future policy and program development.

Bhutan, the Philippines, and Cambodia have all included gender issues and the relationship to climate change as priority areas. Nepal allocated specific resources to ensure full participation by all groups including children in climate change related policy development through their Gender Equality and Social Inclusion (GESI, 2018) initiative. Targeted climate change disaster resilience is also a focus for Cambodia, including a revision of building standards. In Vanuatu, to improve community resilience, a target was set that by the end of 2022, 80% of agriculture SMEs and private sector operators should be able to generate sufficient income to cover essential household needs (food and housing) during times of climate stress. Independently of the NDCs, the Pacific Regional Council for ECD (PRC4ECD), made up of Pacific countries and territories, has joined together to ensure that all young children reach their full potential, and advocate with policy makers to commit to investing in and prioritising ECD in the Blue Pacific to ensure a climate resilient future (see Chapter 9, Case Study 4)

Laos has implemented climate informed health programs focusing on improving access to clean water, improved sanitation and hygiene, dengue control, nutrition, and women's and children's health. Papua New Guinea has also taken climate-sensitive diseases into consideration, introducing measures across the community to ensure 100% of the population have access to tools such as mosquito nets to manage malaria by 2030. In Naru, Pakistan, and the Philippines, a focus is being placed on the health and wellbeing of children by addressing the worsening of

under-nutrition and malnutrition through climate change, reducing child mortality rates through disease prevention and maternal health, and increasing the capacity of the public health systems.

Climate change education is a strong focus for many countries, but each NDC address how that education will be implemented differently. In Cambodia, climate change education will be implemented in classrooms in primary school and up. In Indonesia, the focus appears to be on increasing capacity building through training for young adults and adults. Myanmar intends to include climate change in their curriculum and has also emphasised the need for climate resistant education to ensure ongoing access to education for all children. In Pakistan, climate change education is being introduced into secondary schools and as targeted courses in colleges and universities, while in Thailand an emphasis is placed on general climate education across the board with training to strengthen teachers and other educators in climate change education specifically. Vanuatu has set a goal to increase the percentage of public schools using the existing climate change and disaster risk reduction modules in national curriculum at all levels.

5.6 Asia Pacific policies and programs: Case studies

Having considered a high-level view of NDCs across the Asia Pacific, the case studies below explore specific examples of what is being done to address CC&ED in early childhood. These are just a few examples of what is happening across the region and of successful program and policy development.

5.6.1 POLICY EXAMPLE 1: CAMBODIA

Cambodia's 2020 NDC is one of the most comprehensive submitted to the UNFCCC, receiving a ranking of 14 out of 15 possible points by The Global Climate & Health Alliance Healthy NDC Scorecard (2021). The Cambodian government has taken a holistic and actionable approach to their NDC planning, with strategic mitigation and adaptation measures across all areas of climate-change impact. A strong focus is placed on health services and reducing the impact of CC&ED on health, air quality and emissions reduction and gender equality. The Cambodian government recognises that Cambodia is currently a low greenhouse gas emitter and is actively developing its industry and with these development priorities in mind, the NDC aims to implement climate change and disaster resilient construction and infrastructure standards including for public sector and community-focused buildings covering public health, education, and WASH.

Cambodia's NDC specifically recognises the impacts of CC&ED on children and young people, separate to the impacts on adults and industry. The NDC demonstrates an understanding of not only the role that children will play in managing CC&ED in the future, but also the role that they play now. Children are involved in planning, developing, implementing, and monitoring climate policy and action. There is a heavy focus on mitigation and adaption through education from primary school to university, with centres of excellence across the country where young people can engage in research and development. Climate change education is being included across the curriculum at all levels, although it is not clear whether this includes pre-primary education. Cambodia's NDC meets UNICEF's (2021c) guidelines for meaningful participation: there is a space for them to develop and share their views freely, and those views are listened to and acted upon.

5.6.2 POLICY EXAMPLE 2: PHILIPPINES

The Philippines consists of more than 7100 islands, with a large proportion of the population living in coastal areas. The is one of the most vulnerable countries when it comes to CC&ED, with the increased risk of severe typhoons, heavy rain fall, raising temperatures, droughts, rising sea levels and surge storms. The effects of CC&ED are severe, with direct impacts on agriculture and fishing, access to clean water, and ongoing and reliable supply of energy. CC&ED also has a negative impact on the wider natural environment and as a result, health (e.g., with an increase mosquito-borne diseases).

In 2009, the Philippines passed the Climate Change Act (RA 9729) and its Implementing Rules and Regulations (IRR). This is a comprehensive framework for systematically integrating the concept of climate change, in synergy with disaster risk reduction, in various phases of policy formulation, development plans, poverty reduction strategies, and other development tools and techniques. The Climate Change Act and IRR required local governments to develop climate change action plans. However, less than 10% of local government units (of a total of 1700) had put in place actions plans by 2016.

In response to the Climate Change Act a Climate Change Commission was established, “to take the lead in the development and mainstreaming of evidence-based climate adaptation and mitigation policies through optimum coordination among key stakeholders towards achieving a climate-resilient and climate-smart Philippines with healthy, safe, prosperous, and self-reliant communities.” (Climate Change Commission Mission, 2022; available on <https://climate.gov.ph/>).

The Philippines’ Children’s Emergency Relief and Protection Act of 2016 (RA 10821) and its Implementation Rules and Regulations (IRR) aimed to protect young children, pregnant and lactating mothers in emergency situations and to support their immediate recovery. The law set standards for maternal and newborn child-friendly spaces, health and nutrition provisioning and psychosocial services in emergency settings and the resumption of education and childcare services post-emergency.

5.6.3 PROGRAM EXAMPLE 1: REDUCING EXPOSURE TO AIR POLLUTANTS IN MONGOLIAN KINDERGARTENS

Mongolia has particularly long and cold winters that necessitate the use of fossil fuels to keep warm. With widespread coal and other fossil fuel use, there are high levels of CO₂ emissions that build up both in the air and within individual buildings. This includes childcare spaces such as kindergartens. A recent study found that the pollution levels within 29 kindergartens in both the Mongolian capital of Ulaanbaatar and the provincial capital of Bayankhongor exceeded WHO guidelines (Sereeter, 2021). Researchers also determined that out of 44 kindergartens, 40 had no working ventilation system and all were overcrowded (UNICEF Mongolia, 2018). While the government is actively tackling the high levels of air pollution, fossil fuels are still the most easily accessible option and carbon monoxide poisoning is a particular problem.

As young children are most susceptible to the effects of air pollution, UNICEF Mongolia retrofitted an existing kindergarten and built three new kindergartens. The project intended to demonstrate how new construction methods and key retrofitting can significantly improve the air quality of indoor spaces for young children. The new buildings had higher building standards that included better insulation, electric heating, and air filtration. Since the success of this project, the government has installed electric heating in all kindergartens across Ulaanbaatar.

5.6.4 PROGRAM EXAMPLE 2: ADAPTING CITIES TO CHILDREN’S NEEDS IN INDIA

The Indian city of Udaipur has rapidly grown over the past 50 years, and in response to the needs of the residents, green spaces have been reduced by 45% per resident since 1970 (Arjuna, et.al. 2021). Alongside this increased grey space, a rise in high-speed vehicle traffic and the resulting air pollution have made it difficult to enjoy the remaining green spaces available throughout the city. Through the Bernard van Leer Foundation’s Urban95 program, the government targeted their revitalisation of the city for the children of Udaipur, addressing the specific concerns of children and their carers to make the city more responsive to the needs of children in the face of climate change. To test these changes, the city tried three experimental solutions: (1) adding high visibility road markings near a school; (2) redeveloping a public square with paint, plants, and bright colours to encourage play and reduce dumping; and (3) engaging children and caregivers in a tree planting festival with messages about the environment and climate change. Each of these brought the community together to implement the changes and take ownership of the new spaces. Based on these and other similar government programs, the city now has a targeted budget for improving access to quality green spaces.

5.7 Early childhood development policy (Asia Pacific)

This Scoping Study examines national policies and plans in the context of ECD and CC&ED, to determine whether existing strategies support the needs of young children now and into the future. In addition to looking at environmental policy and programs, including NDCs, considering Early Childhood Development (ECD) policy provides important insights into the importance placed on the impact of the environment and climate change on children.

Importantly, across the Asia Pacific region, **climate change is not specifically mentioned in any existing ECD plans**. This is a significant gap, highlighting the fact that young children's needs are not being directly met and CC&ED is being positioned as separate to or independent of ECD, rather than central to it.

Nevertheless, several countries do include indirect links to CC&ED through policy on:

- **Disaster Relief and Recovery.** Nepal has provision for the safety and protection of pregnant people and young children in their disaster preparedness planning, including the supply of targeted emergency supplies and the prioritisation of pregnant people and young children in emergency situations. Myanmar also includes disaster prevention and preparedness in their ECD policy that includes schools at all levels.
- **Environmental protection.** Sri Lanka includes student participation in environmental cleaning activities and environmental awareness in their education plans.
- **Education.** Cambodia has included parents and guardians as role models for environmental protection and mentions the importance of education and raising awareness among parents, teachers, and guardians so that they in turn can teach the children in their care.

At this critical moment for the climate change discourse, countries who are developing or updating national ECD policies and action plans to become more climate sensitive should be encouraged to actively integrate climate adaptation and resilience measures for children between birth and 8 years of age.

5.8 The gaps between climate policies and young children

As mentioned previously, current CC&ED policies often do not refer to children at all, and if they do refer to children they do not specifically differentiate between the developmental ages or stages (e.g., infancy, toddlers, pre-schoolers etc.). These gaps were not only found during the review of the case studies described above, but there is also well-documented evidence by UNICEF (UNICEF, 2021c) that provides in-depth analyses on child sensitivity with climate policies.

This recent discussion paper presented by UNICEF (UNICEF, 2021c) explored existing climate policies across the globe. They reviewed 103 Nationally Determined Contributions (NDCs are the commitments made by countries that signed the Paris Agreement) ahead of the COP to inform strategic discussions at COP. An overview of the child sensitivity analyses on new and updated NDCs is presented in Figure 3. UNICEF's key findings regarding the NDCs review included:

- There exist a small number of child sensitive NDCs
- Comparing new and updated NDCs with previous NDCs, there have been only few improvements regarding meaningful references to children and young children
- NDCs captured stakeholder engagement and participatory processes, yet more information is needed to adequately address the impact of climate change on children

- NDCs contain sectoral commitments, indicators, and targets, which varied per sector, yet again only few commitments were child-sensitive
- Many countries were making commitments in line with the pillars (e.g., climate education, public awareness, and participation) of the Action for Climate Empowerment agenda

This was not the first time that UNICEF reviewed the NDCs (UNICEF, 2020a). The findings of UNICEF's 2020 report also demonstrated that NDCs were not addressing children adequately, and suggestions were made on how climate policies could be made child sensitive (i.e., ambitious and urgent, rights-based, holistic and multi-sectorial, and inclusive).

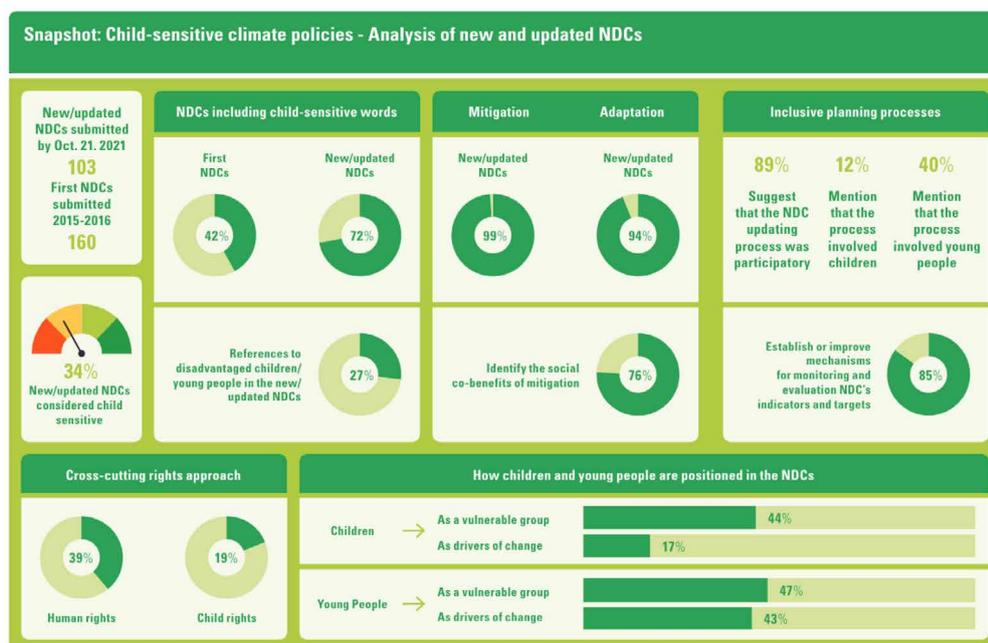


Figure 3: Overview of child-sensitive climate policies as presented by UNICEF (UNICEF, 2021c)



6. Expert insights: Putting children at the heart of climate actions and environmental protection

Synergy between climate change and early childhood development policies, knowledge and interventions requires more research to support evidence-based actions, such as that proposed by Carlos Dora (2020) in the following areas:

1. Validate indicators of ECD for children under the age of 3 and link to policies and programs
2. Link evidence-based pathways between ECD and policies to tackle climate change
3. Establish continuing engagement of populations and stakeholders regarding ECD and climate change

For the current Scoping Study, knowledge and insights were sought from four leading organisations – the Bernard Van Leer Foundation, UNICEF, Sesame Workshop India, and the World Health Organisation (WHO) – as well as an independent expert, Adrian Cerezo (henceforth referred to as the expert panel). These experts support climate change programs and research focused on the gaps between ECD and CC&ED. The following is based on the information gathered through written e-mail conversations and/or online video consultations with the expert panel. Whilst all the members of the panel brought a distinctive contribution to the conversations, it was clear that their perspectives and recommendations could be summarised in one central insight: **young children need to be placed at the centre of policy development and planning.**

6.1 Establishing a child-centred focus

While young children are often referred to as the most vulnerable community members within the CC&ED context, it was suggested that such framing be changed with emphasis instead shifting to seeing young children as our most valuable community members. While children are in fact young and do need support, they are also the future of our communities. A child-centred focus must necessarily be child-sensitive (Pegram & Colon, 2019), as we place children and their specific needs at the centre of planning for and responding to the impacts of CC&ED. This shift in perspective positions ECD as a key building block in sustainable development: When children are supported to flourish, they can have an enormous impact on the future. How to best achieve a sense of capability and empowerment in children regarding the challenges presented by CC&ED, however, needs close attention and requires a differentiated view of how to engage children at different stages of development (see section 11.2).

6.2 Including the needs of our youngest citizens

Many initiatives that do have a child-centred focus or work to include young children's perspectives on CC&ED start from a preschool age or older (see Sesame Workshop India project example below). The expert panel reiterated that it is critical that a focus be placed on the youngest children (i.e., birth to 3 years of age). There is a significant difference between the needs and focus of interventions intended for pre-schoolers and interventions aimed at very young children (i.e., post conception and the first 1000 days).

6.3 Including children's voices

The Mera Planet, Mera Ghar (My Planet, My Home) project surveyed 10,000 children aged 5-10 years old on their understanding of the environment and their unique needs in a changing world. Based on these results, 1600 children participated in weekly, newly developed workshops, which included engaging activities to learn about their environment and climate change (e.g., why is air quality important).

Sesame Workshop India

As seen in the Sesame Workshop India project, and highlighted by the expert panel, children can be put at the centre of environmental discussion by incorporating and prioritising their voices in program and policy development. While including children’s voices and examining their knowledge and needs is an important start, it was acknowledged that, for the youngest age groups, this can be challenging and will likely require mechanisms to obtain the perspectives of caregivers. The community around ECD can bring the support to children and families to be more resilient in the face of CC&ED, which over time will promote children’s voices.

6.4 Collecting targeted data to support policy change

The expert panel agreed that additional data concerning the state of the physical environment and associated behaviours for young children and for caregivers is needed to fully understand the problem of CC&ED for ECD. During the consultations, it was observed that climate policies and programs need to be more sensitive to the special vulnerabilities of young children. In particular, as described by WHO, (1) children with immature immune, respiratory and central nervous systems are highly sensitive to environmental pollutants and climate events, (2) young children have particular pathways of exposure and behaviours that make them more vulnerable to exposure to environmental toxins compared to adults, (3) environmental and climate change policies must recognize the special vulnerabilities of young children, the periods of ECD, pathways of exposure and the dependency upon adults, and (4) environmental and climate change policies should restrict where polluting industries are located (e.g., away from schools, playground and residential areas).

“Incorporating an environmental lens to ECD policies would entail identifying and addressing the underlying vulnerabilities that put children and their caregivers at additional risk against climate-change. For instance, 88% of the global disease burden attributable to climate change occurs in children younger than five years.”

Bernard van Leer Foundation

6.5 Showing the impact of ECD on meeting countries' SDG targets

ECD policies and programs help with efforts to reach the SDGs faster, with less cost, in a more equitable way, and with the longest lasting (and compounded) impacts (e.g., CCC, 2015). The relation between ECD and the SDGs needs to be viewed bidirectionally with policies and programs focused on ECD thoughtfully linked to the SDGs. Sustainable development programs are those that are mindful of the fundamental and cross cutting importance of ECD (Adrian Cerezo). It is also important to aim for appropriate financing to ensure that the programs are high-quality, equitable, scalable, and implemented at the right moment.

Numerous challenges (e.g., program reach, sustainability, quality, lack of available technology, financing) and issues (e.g., undernourishment, forced displacement, living in poverty in urban slums) have to be addressed adequately to ensure that young children and their families get opportunities to grow and flourish. For example, the following challenges and issues (Bernard van Leer Foundation) need to be addressed in many jurisdictions:

- increasing access and quality of prenatal and child health services
- revising and updating national nutrition strategies to address climatic risks
- increasing access to quality early childhood education and incorporating environmental education in its curricula
- providing access to safe and affordable drinking water services that are sustainable and close to home
- developing technical guidance notes to assist the ECD workforce in program implementation

Overall, it is important to be aware of the systemic approach that the ECD ecosystem and the levels of governments involved allow for driving changes to programs and policy. There needs to be a systems approach from decision and policy makers at the national level to create opportunities for ECD to crack into existing systems. This will be, in the view of expert pane, one of the most robust long-term strategies to reduce and mitigate the impacts of CC&ED (UNICEF, 2021b).

SUB-REGIONAL ANALYSIS AND CASE STUDIES

The sub-regional analysis and case studies present the synthesis of various data gathering and information sharing mechanisms that are central to the Scoping Study. A high-level description of the methodology can be found in Appendix D, and the questionnaire itself can be requested from the ARNEC secretariat directly.

Chapters 7 to 9 are guided by the findings of a **questionnaire** developed by ARNEC to identify prominent CC&ED issues facing the sub-regions of the Asia Pacific (Oceania & Pacific, East Asia, South Asia, and Southeast Asia), and the key impacts on children. In addition to the questionnaire, representatives from key government bodies and organisations with early childhood and/or climate change expertise were invited to participate in sub-regional **FGDs** or **interviews**, depending on their availability. Representatives were selected in consultation with the ARNEC secretariat and based on their responses to the questionnaire. Interviews and FGDs presented an opportunity to share and discuss insights, key learnings, opportunities, challenges, and recommendations. The responses of the interviewees and FGDs were subjected to qualitative analysis and are largely integrated into Chapter 8. Finally, learnings from the **ARNEC sub-regional conference sessions** (2022, July) were also integrated into the sub-regional analysis and case studies.

The sub-regional analysis and case studies are organised so that the sub-regional profiles are presented first to orient the reader and provide a clear structure for subsequent analysis (**Chapter 7**). **Chapter 8** provides a full treatment of the findings based on the themes that emerged from the qualitative analysis, and the case studies in **Chapter 9** present a varied range of experiences from across the region (Mongolia, India, Vietnam, and Fiji) and provide a description of good practices, opportunities, and areas of innovation, as well as considering challenges.



7. Sub-Regional Profiles

Based on the sub-regional analysis (see Chapter 8), four sub-regional profiles were created (below). These profiles incorporated challenges and opportunities, which were linked to the five outputs of the Nurturing Care Framework (NCF; see Chapter 4), as well as stated recommendations for the region. In the following infographics, NCF icons are utilised to draw attention to key components of the framework, as they relate to young children, including good health, adequate nutrition, responsive caregiving, security and safety, and opportunities for early learning.

7.1 Oceania and Pacific Region

Oceania and the Pacific encompass countries such as Australia, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, Fiji, French Polynesia, Kiribati, the Marshall Islands, Nauru, New Caledonia, New Zealand, Palau, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna. Many countries in the Pacific region are characterised by small, remote populations. Moreover, costs for telecommunications and transportation are high, and infrastructure is less developed than in other regions (WHO, 2013). Young children in this region are particularly impacted by rising sea levels and tropical cyclones, which have already led to displacement and loss of income for many families. There is great opportunity for awareness-raising and integration of climate change in the early childhood curriculum across this region. Region profile is presented on page 56.

7.2 East Asia Region

The East Asian region encompasses countries such as China, Japan, Mongolia, North Korea, South Korea, and Taiwan. Population density is a very significant feature of this region, and it is home to several major world cities (e.g., Tokyo, Beijing, Seoul). Air pollution and a lack of green space are particularly concerning in this region, with limited focus on long-term planning. There exist opportunities for awareness raising and increased consultation with young children to improve outcomes for ECD in this region. Region profile is presented on page 57.

7.3 South Asia Region

The South Asian region encompasses countries such as Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka. This region is the most densely populated geographical region in the world. The climate of this region varies profoundly from area to area, with some areas experiencing regular flooding and tropical monsoons (South) and more temperate climates (North). The region is impacted considerably by air pollution, floods, and a lack of green space. Prioritisation of CC&ED issues is critical for this populous region and there exists opportunities for regional representatives to champion efforts and awareness around the impact of CC&ED on young children. Region profile is presented on page 58.

7.4 Southeast Asia Region

The Southeast Asian region encompasses countries such as Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. The climate in this region is mainly tropical – hot and humid with high rainfall – with exceptions in mountain areas and the dry zone of central Myanmar. South East Asia is one of the most vulnerable regions to climate change in the world, given the significant impacts CC&ED are already having on their agriculture. Flooding and air pollution from agricultural burn offs are particular concerns, and CC is not widely talked about or publicised. The issue of air pollution specifically has wide ranging economic, political, and social impacts, and is of profound importance for children. There exist opportunities to bring experts together to champion awareness raising and advocacy efforts and encourage increased investment in human and capital resources. Region profile is presented on page 59.

Region Profile Oceania and Pacific

CHALLENGES

Strongly impacted by rising sea levels and tropical cyclones	✓	✓		✓	
Poor public awareness of impact of CC&ED on ECD			✓		
Families facing multifaceted challenges caused by CC&ED	✓		✓	✓	
Loss of family income due to climate impacts on industry and economy		✓	✓		
Limited availability of funding to address impact of CC&ED on ECD	✓			✓	✓
Strong social and emotional impact of displacement on young children			✓	✓	✓
Poor availability of information on children’s needs in relation to NCF	✓	✓	✓	✓	✓

OPPORTUNITIES

High level of awareness of CC&ED impacts on children amongst regional representatives and leaders (e.g., Pacific Regional Council for Early Child Development)
Conditions are conducive to working to include climate change in the national ECE curriculums
Regional representatives across governing bodies and relevant organisations are collaborating to advocate for policy makers to commit to investing in and prioritising ECD in the Blue Pacific to ensure a climate resilient future
Regional forums on climate change include diverse perspectives such as youth advocates and young children on the importance of ECD in building resilience, addressing inequity and adversity and accelerating efforts for sustainable development (e.g. Pacific Islands Forum Leaders Meeting)

NCF (WHO, 2018) core impacts



Recommendations

1. Targeted CC&ED education programming is necessary for young children, parents, and educators; see 11.1(a) & 11.2(a). This can include wider engagement of the community; see 11.2(b) & (c)
2. Focused CC&ED planning for ECE and early primary school can be undertaken, including curriculum and resource development, that is suitable for rollout in evacuation centres or to be delivered to homes and communities in times of climate crisis; see 11.3(a), (b), (c), & (d)
3. Adopt a child centred approach to integrate children’s voices creatively (e.g., through art and play) in the development of policy and program development; see 10.2, 11.3(e) & 12.2
4. Age-appropriate responses are necessary, both in terms of policy and program development. Emphasis should be given to gathering age disaggregated data; see 11.1(e) & 11.5(e)
5. Additional government support is needed, specifically addressing the impacts of CC&ED on young children; see 11.4(a), 11.5(a) & 12.2

Region Profile East Asia

CHALLENGES

	Good health	Adequate nutrition	Responsive caregiving	Security & safety	Early learning
Strongly impacted by air pollution and lack of green spaces	✓	✓		✓	✓
Government is responsive to immediate challenges, less focused on long term planning	✓			✓	
Siloed ministries/agencies focus on different elements of a shared problem	✓			✓	
Struggling to develop economies and reduce climate impact (e.g., use of coal)	✓	✓		✓	
Lack of public knowledge on CC&ED means low motivation to make change				✓	✓
Young children largely excluded from participation in CC&ED action					✓
Poor availability of data on impacts of CC&ED on youngest children	✓	✓	✓	✓	✓

OPPORTUNITIES

- High level of awareness of CC&ED impacts on children amongst regional agencies (e.g., UNICEF) is filtering to government and policy development (e.g., Green Development Policy, Mongolia), which can be accelerated
- Conditions are conducive to build on already active monitoring strategies (e.g., air quality monitoring) and increased dissemination of knowledge and communication products to address environmental and climate crises for young children
- Increased consultation with varied stakeholders (families and communities, education and health professionals, government, etc.) can be promoted to raise awareness of the impacts of CC&ED on young children, and the need to include them more actively in climate actions and environmental protection
- Review norms and standards for the development of ECE centres and schools, to provide young children with safer and more flexible environments

NCF (WHO, 2018) core impacts



Recommendations

1. Ensure ongoing access to education during times of climate crisis and disruption; see 11.2(f), 11.3(b), (c) & (d)
2. Build community resilience and engagement by educating parents, caregivers, educators in impacts of CC&ED on young children; see 11.2(a), (b), (c) & 11.4(e)
3. Longer-term planning for the needs of young children in the face of CC&ED must be made an immediate priority; see 11.4(b), (c) & (d), 11.5(a) & (c)
4. Increased funding for human and capital resources needs to be designated to meet children's changing education and health needs; see 11.4(a)
5. Planning should take existing child engagement and consultation strategies into consideration to implement targeted programming; see 11.5(g)
6. Disaggregated data must be collected on the impacts of CC&ED on young children, with a focus on first 1000 days; see 11.5(e) & 12.2
7. Restructure or reorganisation of government ministries to allow for knowledge sharing and service coordination; see 11.5 – in particular (a) & (d)

Region Profile South Asia

CHALLENGES

Strongly impacted by air pollution, floods and lack of green spaces	✓	✓	✓	✓	✓
Poor public awareness of impact of CC&ED on ECD				✓	✓
Lack of prioritisation within government and community of CC&ED issues					
Parents/caregivers parents lack knowledge on parenting and responsive caregiving which is exacerbated in the face of CC&ED			✓	✓	✓
Complex and severe impacts of displacement on young children	✓	✓	✓	✓	✓
Loss of family income/livelihood due to climate impacts on agriculture and the wider economy		✓	✓		

OPPORTUNITIES

Regional representatives across various organisations and agencies are collaborating to advocate for Government and policymakers to make commitments to ECD and CC&ED
There is growing climate change awareness and engagement with environmental issues amongst young children and youth which can be supported and expanded
Learn from existing local/community innovation and activism (e.g., Warrior Moms, India) to raise awareness of impacts of CC&ED on children and mobilise communities more effectively advocate for children's rights

NCF (WHO, 2018) core impacts

	Good health	Adequate nutrition	Responsive caregiving	Security & safety	Early learning
					
Strongly impacted by air pollution, floods and lack of green spaces	✓	✓	✓	✓	✓
Poor public awareness of impact of CC&ED on ECD				✓	✓
Lack of prioritisation within government and community of CC&ED issues					
Parents/caregivers parents lack knowledge on parenting and responsive caregiving which is exacerbated in the face of CC&ED			✓	✓	✓
Complex and severe impacts of displacement on young children	✓	✓	✓	✓	✓
Loss of family income/livelihood due to climate impacts on agriculture and the wider economy		✓	✓		

Recommendations

1. Build community resilience and engagement by educating parents, caregivers, educators in impacts of CC&ED on young children, with a particular focus on first 1000 days and responsive caregiving; see 11.2(a), (b), (c) & 11.4(e), and 12.2
2. Ensure ongoing access to education during times of climate crisis and disruption; see 11.2(f), 11.3(b), (c) & (d), & 11.5(d)
3. Build up evidence base on children's wellbeing in relation to NCF and impacts of CC&ED to form a basis for public awareness, program design and policy development; see 11.1(e), 11.5(e), and 12.2
4. Integrate children into the development of CC&ED policy (including education and health policies) and actively work to amplify their voices, both individually and collectively; see 10.2, 11.3(e), 11.5(g)
5. Work to establish models and practices that support multi-sectorial collaboration and build capacity to respond to children and families in ways that reflect NCF principles and the child-centred approach; see 10.1, 11.5(a) & (f), 12.2

Region Profile

Southeast Asia

CHALLENGES

Strongly impacted by flooding and increased air pollution	✓	✓		✓	
Lack of media and national attention on the issue of climate change				✓	
Lack of understanding on impact of CC&ED on people's daily lives and on ECD	✓		✓		
Siloed sectors (e.g., between climate/environment and emergency response)				✓	
Lack of consistency across areas of early childhood education					✓
Lack of information on specific needs for children between birth and 3 years in relation to NCF and integrated with CC&ED impacts	✓		✓		✓

NCF (WHO, 2018) core impacts

Good health	Adequate nutrition	Responsive caregiving	Security & safety	Early learning
✓	✓		✓	
		✓	✓	
			✓	
				✓
✓		✓		✓

OPPORTUNITIES

High level of awareness of CC&ED impacts on children amongst agencies (e.g., Save the Children, Philippines) and their representatives
Conditions are conducive to work with regional agencies (e.g., UNICEF, Childfund Cambodia) and their representatives to conduct awareness raising activities – focusing on parents, caregivers and communities – that improve public understanding of CC&ED and its impacts on young children (including different stages of child development)
Opportunity to develop policy frameworks and programs that bring services together through shared goal setting, training, and education (e.g., collaboration between climate, emergency response and ECE agencies)
Leverage existing regional innovation (e.g., Child-Centred Climate Change Adaptation Project, Vietnam) to amplify children's voice and improve educator preparedness to engage with and include children in climate action and environmental protection

Recommendations

1. Increased and uninterrupted access to education which includes readiness for CC&ED impacts must be ensured even in times of crisis; see 11.3 (a), (b) & (c) & 11.5(d)
2. Educate caregivers, educators, and other social services workers about the impacts of CC&ED on young children, including differentiated periods of early development with specific focus on birth to 3 years. This can contribute to community resilience, increase engagement, and raise awareness of their roles in reducing climate impacts on young children; see 11.4(e), 11.5(e) & (f), 10.2(a), (b) & (c), and 12.3
3. Collaboration and coordination across different levels of government, government departments and other community agencies to ensure that services and programs are coordinated and work for the best interests of young children with a framework that recognises the impacts of CC&ED; see 11.4(b), 11.5(a) and (d).
4. Establish or build on existing child-centred programs and policy: involve children in advocacy and sharing their perspectives (see 10.2, 11.3(e), 11.5(g) and 12.2); increase support to address impacts of CC&ED on young children, particularly first 1000 (see 11.4 (a), 11.5 (a))

8. Sub-regional analysis: Findings

8.1 Knowledge and advocacy: Impacts of CC&ED on young children

Across the different sources of data and information that inform this scoping study (existing research, expert panel, questionnaire, etc.), a need for knowledge and advocacy on the impact of CC&ED on young children arose as a key finding. This included ways to implement climate-sensitive programs that have children as a focus and contribute to resilience. Questionnaire findings consistently revealed that there is a familiarity with terms such as climate change, environmental degradation and environmental sustainability but not always familiarity with frameworks for CC&ED (Paris Agreement, etc.) and the Sustainable Development Goals (SDGs). **Extreme flooding, air pollution and lack of green spaces** were the most common concerns across all regions. This has implications for how climate-sensitive policies and programs are developed.

Based on the questionnaire, respondents from the different sub-regions of the Asia Pacific identified specific risks that impact the wellbeing and development of young children in the following areas: wildfire, heat, land degradation, floods, tropical cyclones, rising sea levels, air pollution, exposure to toxins, and lack of green spaces. Figure 4 summarises responses within sub-regions. Further graphical presentations of responses are available in appendix E.

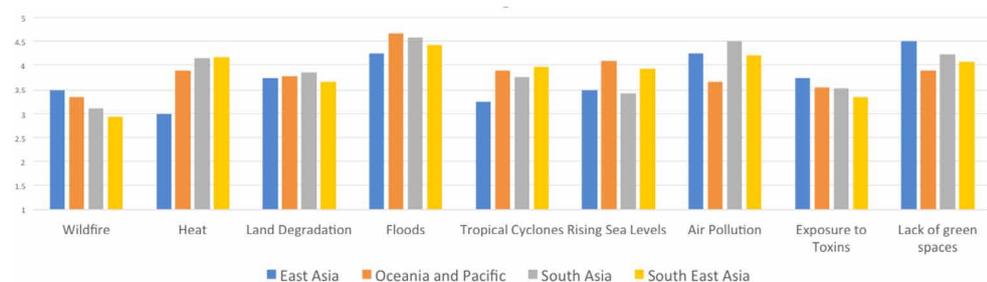


Figure 4: Impacts of climate change and environmental degradation risks on the wellbeing and development of young children by sub-region (Y-axis: 1—Not at all impacted, 2—slightly impacted, 3—somewhat impacted, 4—highly impacted, 5—very highly impacted)

Other common impacts noted by respondents included climate-induced public health issues such as **non-communicable diseases**, impacts on **children’s mental health**, **disruptions on learning**, **a lack of spaces for play**, **restricted access to clean water and food insecurity**, as well as the negative impacts of CC&ED on carers and toxic stress. It is important to comment that many of the countries represented in each regional area are large and there are expected variations in responses due to the physical location of the respondent.

Furthermore, FGD findings highlighted the **lack of specific research, evidence, and practices relating to young children** (birth to 3 years in particular) versus older children and youths in relation to CC&ED. Across sub-regions, respondents revealed concerns regarding the lack of focus on young children, birth to 3 years, in existing knowledge and advocacy materials. They

suggested a **lack of disaggregated data** was leading to all-encompassing approaches that did not take into consideration unique needs of young children within different developmental windows. Respondents reflected on the need to **integrate parent voices to represent the youngest children in policy discussions**. It was also noted that **educator training** and **government funding** were critical to ensuring representation of children birth to 3 years in existing policies and programs.

The questionnaire highlighted a general awareness of the impacts of CC&ED on children, particularly when considering the responses by region. Respondents were more aware of the impacts that directly affect children in their location. Figure 5 compares the awareness of the respondents on CC&ED impacts (brain development, disruption to learning, reduced access to adequate nutrition, forced migration and displacement, caregiver's ability to provide responsive care, loss of caregiver's livelihoods, children's health, and the impacts of ECD service delivery) on the wellbeing and development of young children.

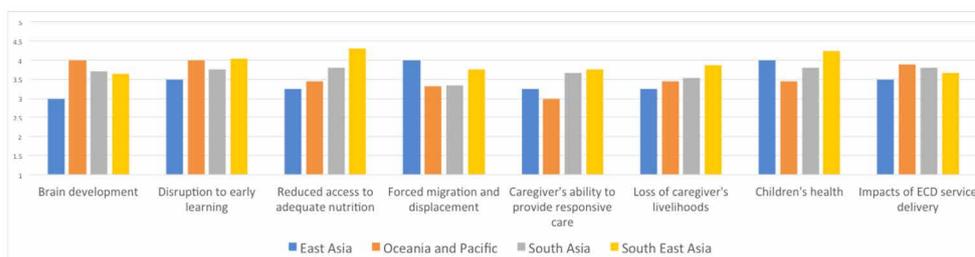


Figure 5: Impacts of climate change and environmental degradation risks on the wellbeing and development of young children by sub-region (Y-axis: 1—Not at all aware, 2—slightly aware, 3—somewhat aware, 4—highly aware, 5—very highly aware)

FGD respondents were asked about efforts to include children in policy planning and development in their region. Answers varied widely, with some countries having large scale advocacy and engagement programming already in place (e.g., the Philippines) and others having made limited progress (e.g., China). **Participants agreed on the importance of engaging children**, particularly very young children, but generally agreed that it was difficult to do so. Barriers include a **lack of targeted funding**, a **lack of human resources and time**, a **lack of government interest or support**, and a **lack of knowledge regarding how to integrate young children's voices effectively**. We underscore the general lack of common understanding on what is meant by integrating young children's voices into policy planning and development.

Respondents asserted that **children should be recognised as agents of change**; as individuals who can contribute to managing and mitigating climate change. While children may be consulted, sometimes follow-up is insufficient or surface-level, and **more needs to be done to engage and empower young children**. This is seen as an untapped area of opportunity. For example, in China, there are no established pathways to include children in policy conversation, but those working in the ECD space recognise the potential for change.

The global impacts analysis presented at the start of this report revealed that establishing youth groups and education programs is a good start, but it is not enough. Children need to be

able to see the impact of their work through their communities. As an example, with funding from UNICEF, young children in Mongolia were selected from across the provinces to work directly with national authorities and share their views with high-level policy makers. **Through actively creating these relationships, children are supported in both forming and sharing their perspectives and are engaged in the end-to-end process.**

In other countries, including Pakistan, teacher training includes CC&ED and ways to **engage children and their community in becoming advocates for policy change**. This includes a focus on the direct impacts of CC&ED on their immediate community and opportunities for discussion on ways to address these impacts. Participants noted that across South Asia, there has not been a focus on including children in policy and program development, and further engagement is required.

In the conference sub-regional consultations, representatives from South Asia noted that there is a general awareness among the community that CC&ED can have significant impacts on health and education services, however there is less acknowledgement or awareness of the impact on young children's brain development, and on parents' capacity to care for young children.

8.2 Siloed sectors and opportunities for intersectoral cooperation

Across data sources, respondents drew attention to the siloed nature of sectors and how this was impacting upon CC&ED efforts in relation to young children. Here we draw attention to opportunities for intersectoral cooperation.

Questionnaire respondents agreed that more can be done to mitigate the impact of CC&ED on ECD, and they saw this as a **common responsibility** across high-income countries, global corporations, and national climate policy makers. Respondents also agreed that local representatives and stakeholders at all levels, including children, should be involved in addressing CC&ED across sectors. Respondents largely agreed that CC&ED related learning should be integrated into existing teaching and education programming and policy, and they indicated an understanding of the **importance of including discussion of CC&ED in early learning** to increase resilience and mitigate the impacts of CC&ED in the future.

In FGDs, it was noted that **intersectoral cooperation** within government is necessary to address the breadth and complexity of issues arising from CC&ED and their impact on ECD. Participants in several FGDs noted that **government structure can become an impediment to comprehensive and systematic change** (in relation to the impact of CC&ED on ECD). Furthermore, it was noted that, when different government and ministry departments focus on specific elements of one shared problem, **communication and planning can be disjointed and may not serve the best interests of young children and their families**. For example, until recently in China (East Asia), ECD was not integrated into the basic health system as it was seen as the responsibility of the government. With support from UNICEF and the government, ECD is now comprehensively implemented into China's health system, and children and families can now access government support, resources, and services centrally within the public health framework.

Intersectoral cooperation also arose as a key consideration in discussing how to address the needs of children aged birth to 3 years versus the needs of older children. In China, children who are not yet in school are overseen by the health agency, while children in school fall under the regulation and authority of the Ministry of Education. Participants agreed that, **when creating ECD policy, both the education and health ministries must be involved** to create a strong and comprehensive program. Often, other ministries are also involved, such as the Ministry of Development who oversee infrastructure improvements (e.g., Child Friendly Building Initiative). It was observed that while an integrated approach is one of the greatest challenges for ECD policy development and implementation, it is also an opportunity for significant and impactful change if addressed well.

In the conference sub-regional sessions, representatives from the Pacific region noted that **internal advocacy is needed to work in a less siloed manner with non-government organisations and to ensure connections are made with the climate sector. Further, they asserted that this requires significant time and resources.** Representatives from South Asia suggested, within non-government organisations, that prioritisation should be given to collaboration between areas that service ECCD and climate change where possible. In making these connections, and sharing materials and resources, future programming can be truly representative of the needs of young children with consideration to CC&ED impacts. Representatives from South East, East, and South Asia also remarked that the NCF highlights the need to collaborate with other sectors to ensure young children are protected from toxic stress and address the impact of CC&ED holistically.

8.3 Community wellbeing, agency, and social justice

Across data sources, respondents highlighted the need to consider community wellbeing, agency, and social justice. A key component of this was consideration of parents and caregivers, and how they can provide responsive caregiving.

In FGDs, respondents expressed concerns about **how to support families in the context of both chronic and episodic events**, and how these events impact children directly. This echoes findings from the global impacts analysis, which revealed that **CC&ED can lead to toxic stress that can be passed down to young children**, and caregiver mental wellbeing can also impact on their ability to provide responsive, nurturing care. Participants also noted that they were very conscious of the need to provide **age-appropriate response and support**. Again, children aged birth to 3 years are often grouped with older age groups when it comes to policy and program development. This remains the case during chronic and episodic events, such as flash flooding, where temporary schools and learning programs are set-up for children in primary and secondary school, with minimal or no focus placed on providing socio-emotional support and opportunities for development among the youngest children. This includes a lack of support for parents and caregivers of young children.

Respondents to the FGDs described how it is a significant challenge to ensure there is good coverage of knowledge about CC&ED and the impacts on children from the perspective of parents and caregivers. They noted a **lack of awareness among some parents and educators about the impacts of CC&ED on children's health**. This is something many countries are working to address, often alongside ECE programs as targeted parent education and support. Participants suggested there exists an opportunity for **parental education** when capturing data on children from birth to 3 years. As caregivers are seen as the most direct route to identifying the impacts of CC&ED on these children, the caregivers need to understand CC&ED in order to engage fully in the discourse.

Similarly, respondents also noted a **lack of priority on supporting caregivers to provide responsive care**. Participants observed that parents often do not have the resources, skills, and emotional energy to support children effectively in times of stress or family need. **Families are often experiencing multiple impacts of CC&ED simultaneously**. They may have lost their livelihood, become ill and unable to work, lost their home, been displaced and lost their community of caregivers and support network, or experience any number of other significant events in combination. In many countries across the Asia Pacific region, the government has limited resources available to support these families financially or socially.

However, there are some positive examples being implemented to provide psychosocial support in times of climate disaster. In **Tonga**, a recent triple disaster (an underwater volcanic eruption, a tsunami, and then the first waves of COVID-19) led to families spending extended periods of time in evacuation centres. This is not only incredibly stressful, but highly disruptive to all members of a family. Alongside the government, UNICEF Pacific worked to build on existing systems to create focused curriculums for ECD to be rolled out in evacuation centres. This

provided support for the wider family grouping by relieving stress and concern over their children's education and providing time for the adults to find work or to simply have some social-emotional help from others. This example is being considered, reflected upon, and refined for future implementation in other Pacific Island nations.

In conference sub-regional consultations, representatives from South East and East Asia agreed it is critical to work with children and families to identify ways to address the climate crisis. They suggested **disseminating information on integration of the NCF and resilience/adaptation principles into the ECD spheres in which we work**. Further, they asserted that **CC&ED should remain a priority when planning and budgeting for ECCD services**.

8.4 Air pollution and environmental degradation

For sub-regions within the Asia-Pacific, air pollution and environmental degradation were highlighted as a particular concern. As noted above, questionnaire findings revealed **extreme flooding, air pollution, and lack of green spaces were the most common concerns across all regions**. This has implications for how we develop climate-sensitive policies and programming.

The scoping study revealed it is important to underscore that **CC&ED events and issues can impact children and families in a multitude of ways and arise from a multitude of causes**. In urban areas, air pollution often results from manufacturing and large-scale industrial processes. In rural areas, wildfires contribute to air pollution and impact crops and food supply. In turn, rural fires have a significant impact on the air quality in large cities with winds blowing pollution into already heavily polluted areas. There is also the issue of heating indoor spaces which was noted by participants as more prevalent in rural areas. For example, the use of coal indoors to warm homes and schools, in addition to the use of coal in power stations, is associated with a number of health and developmental issues among young children, as well as ongoing lung and breathing issues for adults.

The issue of air pollution and environmental degradation on young children arose across all FGDs and was also reflected in the conference sub-regional consultations. It was noted as a particular concern for sub-regions South East Asia and East Asia, where countries are developed and populous.

In the conference sub-regional consultations, representatives from the South East and East Asia expressed that **climate policies do not consider young children and suggested including principles of child protection in school-level regulation policies and national ECD programs**. They also suggested integration of child protection principles within education sector development plans, and they flagged that the ECE curriculum can play a critical role in protecting children by influencing their understanding, knowledge and behaviour. Further, it was noted that working within their own countries is not the best way forward. Rather, they recognised the **lobbying and engagement needs to occur across the region**.



9. Case Studies

The countries discussed below – Mongolia, India, Vietnam, and Fiji – present a positive example of CC&ED mitigation policy in action across each sub-region of the Asia Pacific. For each case study, the **general climate change context** for CC&ED, including which issues are having the greatest impact currently, were considered along with the effects on young children. This overview is followed by the exploration of **good practices** already in place to protect young children from the impact of CC&ED and the steps taken towards policy development and mitigation. Specific program successes, advances in policies and plans, and **innovations** were presented as examples of good entry points for incorporating the needs of young children. Gaps in existing/planned responses were also considered to identify places for growth in the future (next steps) within **challenges, opportunities, and recommendations**.

Case study 1: Mongolia

GENERAL CLIMATE CHANGE CONTEXT

Mongolia is a landlocked country in East Asia with a unique climate, a low population density, and a traditionally nomadic population. Mongolia has distinct seasons across both desert regions and mountain ranges. It also experiences some of the most extreme weather in the world, with very cold winters following dry hot summers. In winter, Mongolia experiences some of the highest levels of air pollution in the world due to the common use of raw coal for heating homes. The annual mean concentration of fine particulate matter is 6-10 times higher than the safe levels set by the World Health Organisation (WHO, 2018). In winter, this increases to 8-14 times the recommended guidelines. Rapid urbanisation over the past decades has created a transition in both cultural lifestyle and livelihoods as people move towards cities and away from traditional agriculture and livestock herding (World Bank Group, 2021).

Due to its delicate and varied ecosystem and the importance of agriculture and livestock to both the economy and the culture, Mongolia is particularly susceptible to the impacts of CC&ED (WHO, 2018) and is already experiencing significant shifts in its water and weather patterns. Table 1 below outlines the current CC&ED issues across Mongolia. These issues directly impact already vulnerable children. While children in both rural and urban areas are equally impacted by air pollution, children in rural areas are most directly affected by storms and periods of heavy snow, disrupting their access to education and responsive caregiving. Children already living in poverty often also experience the secondary impacts of CC&ED because of inadequate nutrition due to crop failure, livestock death, or loss of family income due to natural disasters.

Table 1. Climate change, environmental degradation, and disaster risk recovery issues in Mongolia

Issue	Impact
Air pollution due to high dependence on coal for heating	Respiratory health disease, increased childhood mortality (pneumonia), increased incidence of heart disease and stroke
Drought	Dust storms, crop failure, reduced water supply
Increasing temperatures	Heat waves, desertification and deforestation, threat to biodiversity
Increased frequency of Dzud (temperatures of -40°C in winter to 50°C following a hot and dry summer)	Death of livestock, economic damage
River flooding	Crop destruction, displacement

GOOD PRACTICES

Mongolia has worked closely with international organisations such as the WHO and UNICEF to address the impacts of CC&ED through their updated NDCs. As air pollution is having such a significant impact on the Mongolian population, the 2020 revised NDCs have a focus on reducing greenhouse gas emissions by 22.7% by 2030 (CCAC Secretariat, 2020). This target is in addition to existing and in progress plans that specifically tackle air quality in major Mongolian cities, such as bans on coal use, replacement of coal with electric heating, and air quality monitoring projects in schools and early childcare centres.

Mongolia has also engaged in a Country Partnership Framework (CPF) with the World Bank to address the impacts of CC&ED on the most vulnerable populations, including livestock herding communities, and to provide better DRR and management strategies and stronger delivery of social services, particularly to pregnant women and young children. An extensive evaluation of the impact of CC&ED was conducted by the Ministry of Education and Science, in partnership with UNICEF Mongolia. This focused on mitigation of the impacts of CC&ED on young children and the creation of a plan to inform future curriculum and policy development.

INNOVATIONS

The following program innovations represent examples of good entry points for incorporating the needs of young children in environmental and climate change planning.

Investment in Strong Health Networks

As air pollution is a critical issue for women and children, addressing the source of pollution, providing education, and creating stronger health networks is a focus for UNICEF Mongolia and the Mongolian government. This program of work includes training for health workers in treating children with chronic respiratory illness, increasing access to affordable medication, increasing the coverage of pneumonia vaccinations, and raising awareness among communities of the impact of air pollution in the home (UNICEF Mongolia, 2016).

Green Development Policy (2014-2030)

Mongolia has developed the Green Development Policy to ensure that ongoing and future development is environmentally sustainable. This includes the development of social services including early childhood education and health centres. Measures outlined include energy efficient building and heating technologies, the introduction of a green building rating system and energy audits, and the implementation of an incentive scheme for green building. The Green Development Policy is funded through the creation of a Sovereign Wealth Fund from mining sector revenues which are utilized to ensure long-term sustainable development. Increased income from sustainable development and industry, such as the processing of raw materials such as leather, wool, and cashmere, will also provide funding and sustainable jobs to transition communities away from mining as a stable source of income. Specific commitments were also made for the provision of a stable income for women who care for children.

Youth Climate and Clean Air Network (YOUCCAN)

UNICEF's Youth Climate and Clean Air Network (YOUCCAN) works to engage children across Mongolia in a variety of child driven projects with the goal of enabling young people as champions and changemakers. YOUCCAN builds on the 2021 online Mongolian Children and Youth participation in Climate Change forum which invited 120 young people to participate in active discussions on the impact of CC&ED on them and their communities. YOUCCAN members receive training around climate change and air pollution and are supported to engage policy dialogues with local and national stakeholders. While this project initially targeted children between 15-17 years of age, wider activities involve children from primary school through dissemination and discussion activities. This program is a strong model that can be taken down into younger ages groups to build skills, knowledge and confidence from an early age.

NEXT STEPS

Challenges

- While 74% of children under 5 years of age attend formal early childhood education (Nurturing Care for Early Childhood Development, 2021), changing weather conditions – increasingly extreme winters and hot summers – have a significant impact on children's education (Ministry of Education and Science, Government of Mongolia, UNICEF, 2019).
- The national curriculum, including early childhood education, does not currently reflect current climate data which will ensure children are well-informed and support their engagement in climate action.
- Government agencies often work in silos or independently of one another, even when working on parallel project targets.

Opportunities

- Recent changes to the national curriculum for preschool education (children aged 3 to 5 years) sees the introduction of environmental education at an early age with curricula focusing on protection of nature through simple actions like turning off lights, growing vegetables and trees, saving water, and recycling and reusing. This can be expanded to include up to date information on the impacts of climate change on children in their day to day lives to create tangible linkages between CC&ED and these actions.

- Planning needs to be across government ministries (for example, across the Ministry of Health, Ministry of Science and Education, and Ministry of Planning and Infrastructure).
- Work also needs to be done within communities to change behaviours by providing practical information to parents on protecting children from air pollution during pregnancy and early childhood.

Recommendations

The following recommendations are expanded in Chapter 11, below (where indicated).

- UNICEF (2019) recommends collecting additional data to inform climate resilience planning as well as conducting vulnerability assessments to fully understand the impact of CC&ED on education; see 11.5(e).
- Plans for alternative education at all levels in remote and rural areas to support the ongoing access to education during climate-related disasters are essential. This includes the development of emergency buildings in local communities and programs that can be delivered by mail or online where access is available; see 11.3(b) and 11.3(c).
- Additional training to enable teachers to respond to changes in curriculum and climate sensitive education planning should also be offered; see 11.4(e).
- There is an ongoing need for targeted climate finances to support alternative education needs and adaptation integration. This pool of funding should be immediately designated, and systems put in place to ensure that it can be used in a timely and targeted manner to address these needs; see 11.4(a) and 11.2(f).

Case study 2: India

GENERAL CLIMATE CHANGE CONTEXT

India is a large, developing country in South Asia. UNICEF (2022) has noted that, globally, India is considered the 5th most vulnerable country to climate change, based on the Climate Risk Index 2020. Climate change is already having a significant financial impact on India, and this is predicted to worsen in coming years. Residents of India face several CC&ED and DRR issues, outlined in Table 2 below. According to UNICEF (2022), India is among four South Asian countries where young children are most impacted by CC&ED and DRR, affecting their health and wellbeing in a multitude of ways.

Table 2. Climate change, environmental degradation, and disaster risk recovery issues in India

Issue	Impact
Shifts in natural vegetation	Deforestation
Monsoons, tropical cyclones, and unseasonal rains	Crop failures
Rising sea levels	Reduced water supply
Habitat loss and fragmentation	Threat to biodiversity
Air pollution	Respiratory health issues
Flash flooding	Acute water shortages
Earthquakes	Trauma, death, injuries

In India, the number of children under 5 years suffering from poor health and nutritional deficiencies remains high, largely due to poverty and/or stunting (Nurturing Care for Early Childhood Development, 2021). Moreover, progress on child development indicators in India has been slow compared to countries with similar economic growth (Rao, Ranganathan, Kaur & Mukhopadhyay, 2021). Unfortunately, there are also various gaps in terms of data on early

learning in the home, and responsive caregiving. In 2021, only 38% of young children in India were attending early childhood education (Nurturing Care for Early Childhood Development, 2021). **Effects of CC&ED will compromise the already vulnerable situation of young children in India.**

GOOD PRACTICES

At the United Nations COP 26 in Glasgow, representatives from India announced that they would put climate change at the centre of their environmental policies. Save the Children (2020) have acknowledged that women and children remain most impacted by CC&ED in India due to their existing vulnerabilities. They have proposed a roadmap for implementation of identified climate change adaptation strategies, following an extensive assessment of the risks and impact of CC&ED on children in vulnerable regions of India. The roadmap encompasses strategies which leverage existing childcare and welfare initiatives and ensuring child safety, health, and nutrition are prioritised in climate-smart agriculture practices. Importantly, the approach specifically lays out cross-cutting recommendations for inclusion in policies, institutional frameworks, and financial mechanisms to ensure implementation of proposed adaptation strategies. Moreover, a comprehensive implementation plan is included, with proposed adaptation measures to support women and children.

Similarly, following the COVID-19 pandemic, and resulting exacerbation of existing vulnerabilities, UNICEF India (2022) committed to strengthening its support to vulnerable communities, especially women and children in India. Their commitment includes building resilience against CC&ED, which they have broken into government advocacy, strengthening service delivery, empowering communities, and investing in convergent programme delivery. This will include working with government partners, and program developers, to strengthen climate resilience through “adaptive and mitigative interventions” which are aimed at improving outcomes for children in terms of education, health and nutrition, access to clean water, sanitation and hygiene, safety, and security.

INNOVATIONS

The following program innovations represent examples of good entry points for incorporating the needs of young children in environmental and climate change planning.

Bernard van Leer Foundation’s Urban95 Programme

The Urban95 program evolved from work undertaken by the Bernard van Leer Foundation (BvLF) in India (BvLF, 2022). With a significant proportion of India’s population living in urban areas, the Urban95 program focuses on creating healthy and safe cities for young children and their families. Recognising that cities pose serious risks to the health and wellbeing of young children (due to climate and environmental concerns such as air pollution, traffic congestion, social isolation, and lack of green spaces), Urban95 brings together key, cross-sectoral stakeholders to support and advocate for ways to bolster early childhood development in these communities. BvLF have created the *Early Years Starter Kit* as a starting point for governments and partners seeking to improve the lives of young children.

Warrior Moms

Warrior Moms (2022) is a movement working across 14 regions of India, seeking to address the significant impact of air pollution in their country. Started in 2020 as a community initiative, Warrior Moms brings together women across India to raise awareness about climate change and its impact on young children. They have initiated several awareness campaigns, with reach across urban and rural areas. Campaigns focus on issues such as waste management, biomass burning, urban mobility and non-motorised transport, thermal power plants and health impact and more. The movement has gained significant traction via social media, particularly during the COVID-19 pandemic. Warrior Moms seeks to uphold Article 21 of the constitution in India, which guarantees the Right to Life and therefore, the right to clean air and water. Warrior Moms – which consists mostly of young parents – aims to address the sources of pollution as opposed to focusing on post-pollution remedies, which are ineffective.

CHALLENGES AND OPPORTUNITIES

Challenges

- While the subject of climate change has been included in India's school curriculum for grades 7 to 11, climate change, at the time of writing, such changes have not been made to India's early childhood and early primary curriculum plans.
- The National Action Plan on Climate Change (Government of India, 2010) does not directly include resilience building for young children.

Opportunities

- India has committed to reduce its carbon footprint, and budget allocations for environmental conservation will likely be of some benefit to young children and their families. However, the budget allocation given to the Child's Affairs Ministry focuses on benefiting children mainly in Child Protection services.
- Many organisations, programs and initiatives seek to raise awareness of CC&ED and the impacts on young children, and work to bridge the funding gap to support the nurturing care of young children in India. These organisations could be directly supported with targeted funding to increase their ability to deliver education and other support more widely across India.

Recommendations

The following recommendations are expanded in Chapter 11, below (where indicated).

- a. The overall budget for children is minimal, with little to no focus on the threat of CC&ED. Additional budget must be allocated towards this need, or budget must be redistributed from other areas of focus to support education, adaptation, and remediation; see 11.4(a), 11.5(b) and 11.2(f).
- b. Additional focus needs to be placed on addressing health and nutrition in the face of changing climate and enabling access to healthy food and healthy spaces across the country; see 11.1(a) and 11.2(d).
- c. Increasing community resilience both with the help and guidance of UNICEF India and increased support from government is essential to build communities in which young children can feel secure in the face of CC&ED; see 11.1(c), 11.2(a) and (b).
- d. Education about the impacts of CC&ED on young children needs to happen at all levels but particularly in government through data supported demonstration of long-term impacts of CC&ED on future generations of workers and health of the country; see 11.5(e) and 11.4(c) and (d).

Case study 3: Vietnam

GENERAL CLIMATE CHANGE CONTEXT

Vietnam is a country of over 97 million people, located in Southeast Asia. It has significant water borders on the South China Sea and the Gulf of Thailand. Due to the large proportion of the population who live and work along these extensive water borders, Vietnam is one of the top countries globally most impacted by climate change and rising sea levels (Government of Vietnam, 2011). The Mekong Delta region, critical for the food security of the nation as well as the economy, is at high risk (UNICEF Vietnam).

Children in Vietnam face multiple CC&ED and DRR issues, outlined in Table 3 below. In Vietnam, 55% of young children (under 5 years) are at risk of poor development primarily due to a lack of adequate nutrition and child poverty (Nurturing Care for Early Childhood Development, 2021). Children in urban areas are more significantly at risk than those in rural areas. The ongoing impacts of CC&ED directly impact the wellbeing of young children in Vietnam in all aspects of the Nurturing Care Framework.

Table 3. Climate change, environmental degradation, and disaster risk recovery issues in Vietnam

Issue	Impact
Unregulated use of toxic pesticides and fertilizers	Water pollution, crop contamination, threat to biodiversity
Monsoons, tropical cyclones, and unseasonal rains	Crop failures, flooding, increased incidence of dengue
Rising sea levels	Reduced water supply
Drought	Crop failure, reduced clean water supply
Air pollution from high dependence on fossil fuels	Respiratory health issues

GOOD PRACTICES

UNICEF is a key partner working with the government to build its strength in supporting children, families, and the wider community in building resilience, with a targeted focus on reducing the impact of CC&ED on young children. In order to enable effective response in both immediate disaster response and managing longer term sustainable development and mitigation programs, a Child-Centred Disaster Risk Reduction (CCDRR) approach is being utilised.

This child-centred response is aligned the newly submitted NDCs (2020) of Vietnam, placing children at the heart of planning with child-centred issues integrated and action areas clearly identified. Vietnam’s new NDCs focus on stronger mitigation and adaptation commitments country wide, by focusing on changing industrial processes such as building practices and decreasing emissions by 9% by 2030 (NDC Partnership, 2020). The NDC also builds a more targeted plan for implementation of mitigation strategies.

INNOVATIONS

The following program innovations represent examples of good entry points for incorporating the needs of young children in environmental and climate change planning.

Child-Centred Climate Change Adaptation Project (4CA)

In 2011, the Child-Centred Climate Change Adaptation Project was developed to provide children with the tools to build resilience to the impacts of CC&ED through education, advocacy, and engagement. This program works to empower young people and children to take a role in managing and reducing climate risks. As part of the 4CA project, a children’s book on climate change was developed and shared (in both English and Vietnamese), 380 teachers from 255 schools were trained on climate change action, and local forums were organised to share information and encourage discussion on climate change and the impacts of CC&ED, as well as the creation of advocacy groups. This program had 20,000 direct beneficiaries (children in schools) and more than 50,000 indirect beneficiaries (their families and communities). This project has since been reviewed and rolled out in several other countries including Indonesia, the Solomon Islands, and Tonga.

Safe School Initiative

In 2019, the Vietnam Ministry of Education and Training, with the support of Save the Children, Plan International and UNICEF, implemented the Safe School Initiative at all levels of formal schooling. This included the adoption of the Comprehensive School Safety Framework. DRR education developed by UNICEF is now included as part of the core curriculum. This program was reviewed in 2021 through a national workshop with a number of international partners (UNICEF Vietnam, Plan International, Save the Children, American Red Cross and US Aid) to share the learnings and recommendations of the Safe School Initiative. Recommendations for changes to ensure that the program met the needs of all vulnerable students were submitted to Government. This program impacts more than 21 million school-aged children across Vietnam.

Think Playgroups

In 2014, *Think Playgroups*, a social enterprise, was founded to construct child friendly play spaces in Vietnam to promote the importance of playing for children's social, emotional and physical growth and development. Think Playgroups consists of volunteers, mainly architects, who work closely with local residents, businesses and governments to acquire land and develop playgrounds from recycled materials (e.g., tires and wooden boxes). They have developed over 150 play spaces, reaching thousands of children in Vietnam. In addition to the development of the playgrounds, Think Playgroups organises Play Days to increase the use of the playgrounds, enhance public awareness, and to involve the media to seek Government support.

UN CC:LEARN course on Climate Change and Children

In 2020, UNICEF Vietnam in collaboration with the Vietnamese Ministry of Education and Training worked with United Nations Institute for Training and Research (UNITAR) to make the Vietnamese adapted version of the UN CC:LEARN course on Climate Change and Children (2020) available for 1 million teachers in Vietnam. This course is online and self-paced, allowing teachers to become 'climate change literate' and ready to engage students in their classrooms. All early childhood, primary and secondary teachers are required to participate in the training.

CHALLENGES AND OPPORTUNITIES

Challenges

- While there is some recognition of children in the discussions of CC&ED in Vietnam, there remains large gaps in how children's needs are embedded within policy initiatives addressing the impacts of CC&ED on ECD.

Opportunities

- This is a significant area of opportunity to target the inclusion of children in the development of key policies such as those focusing on water security, child health, climate-smart schools, and sustainable urbanisation/green growth (UNICEF, 2021).
- UNICEF Vietnam (2021) also specifically highlights the opportunity to more strategically integrate climate change into curriculum programs moving forward. In Vietnam, 76% of pre-school age children attend some form of formal ECE program, but only 52% have access to toys and 26% have access to age-appropriate books in the home.
- There are many opportunities for sharing the extensive knowledge already collected by the WWF and UNICEF to create advocacy networks across different areas of industry, with a particular focus on the vulnerability of young children to climate change impacts.

Recommendations

The following recommendations are expanded in Chapter 11, below (where indicated).

- a. Education is essential in supporting families to support their children reach developmental goals and create the next generation of climate advocates in local communities. Vietnam is already making significant efforts towards this goal, and this is an area where this investment should be built on in future planning. In moving forward, it is important to include acknowledgment of the different needs and risks to children in rural and urban areas; see 11.1(b), 11.1(c), and 11.1 (d).
- b. UNICEF Vietnam (2021) notes that continuing existing multi-sectoral partnerships, and establishing new relationships between government, social organisations and the private sector is essential in making widespread impact in Vietnam; see 11.5(a).
- c. Addressing the ongoing issue of air and water pollution is a challenge as agencies and governments work together to create new policy and provide education on the impacts of pollution on the environment and the people that live and work in that environment; see 11.5(c), 11.5(d) and 11.4(b).

Case study 4: Fiji

GENERAL CLIMATE CHANGE CONTEXT

Fiji (officially the Republic of Fiji) is an island country in the Pacific Islands, consisting of more than 330 islands. At the COP23 Fiji UN Climate Summit (2018), Fijian President and Prime Minister Bainimarama, remarked, “Unless the world acts decisively to begin addressing the greatest challenge of our age, then the Pacific, as we know it, is doomed.” Rising sea levels across the globe have a significant impact on those who live in coastal regions and Small Island Developing States like Fiji. Even though Fiji remains one of the smallest contributors to global carbon emissions, it is faced with devastating consequences in relation to CC&ED and DRR. Table 4 describes some of the key challenges for Fiji.

Table 4. Climate change, environmental degradation, and disaster risk recovery issues in Fiji

Issue	Impact
Rising sea levels	Reduced water supply; portions of land uninhabitable
Increased incidence and intensity of tropical cyclones	Trauma, death, injury
Drought	Increased susceptibility to food- and water-borne diseases
Flash flooding	Crop failures
Changing weather extremes	Displacement
Ocean acidification	Impacting health of the coral reef systems

In Fiji, the number of young children under 5 years suffering from poor health and nutritional deficiencies remains high, with under-five stunting reported in 8% of young children (Nurturing Care for Early Childhood Development, 2021). Using the modelling of Save the Children’s (2020) *Born into the Climate Crisis* report, relative to a child born in 1960, children born in Fiji in 2020 will live through approximately four times the number of heat waves, and more than double the frequency of flooding in their lifetime. Extreme weather conditions such as these can lead to detrimental impacts on food systems, with reduced harvests and a lack of food diversification (Save the Children, 2020). Young children are extremely vulnerable to the impact of food insecurity, and will be affected through increased likelihood of disease, malnutrition, and poor cognitive development (Save the Children, 2020). Experiencing extreme weather events such as flash flooding can result in increased incidence of depression, anxiety, and post-traumatic stress in young children (Queensland Centre for Perinatal and Infant Mental Health, 2017). Flash flooding can also limit access to safe water and increase the risk of water borne diseases, to which young children are particularly susceptible (UNICEF, 2021b).

GOOD PRACTICES

Along with many other Pacific Island countries, Fiji has developed several national policies and plans to tackle climate change, including the Climate Change Act 2021, the National Adaptation Plan 2018, the National Climate Change Policy 2018-2030, the Fiji NDC Implementation Road Map (2018-2030), the 20 Year Development Plan (2017-2036), and the Green Growth Framework 2014. Fiji has been at the forefront of championing change for the Pacific Islands (UNICEF, 2021a). Fijians are actively advocating for their country on the international stage, having signed the Paris Agreements, Kyoto Protocols, and the Sendai Framework for Disaster Risk Reduction 2015-2020. By signing these agreements, the Fijian government acknowledges the impact of climate change on the rights of its most vulnerable citizens, particularly young children and mothers.

Many National Adaptation Plans contain only references to children in the context of challenges and adaptation, however Fiji’s National Adaptation Plan 2018 is a rights-based, holistic and multi-sectoral plan which is inclusive of children. The plan includes child and youth-related measures that specifically acknowledge a child’s right, as per Fiji’s Constitution (2013) to a “clean and

healthy environment, which includes the right to have the natural world protected for the benefit of present and future generations through legislative and other measures.” The plan notes a commitment to operationalising a gender and human rights-based approach to climate change adaptation planning, which specifically prioritises actions that uphold the rights of children and young people.

INNOVATIONS

Disaster Risk Reduction in Schools

Disaster risk recovery has been a key priority of Fiji’s Ministry of Education, with various efforts being made to ensure that children and educators are safe in schools, and that education can continue in the period of recovery following disasters (Save the Children, 2016). Several policies and standards (e.g., Education Sector Strategic Development Plan 2015-2018) advocate for children to receive equitable access to progressive, inclusive, and quality education as part of disaster management (Save the Children, 2016). UNICEF is supporting the education ministries in Fiji, Vanuatu, Solomon Islands and Tonga to roll out the Disaster Risk Reduction in Schools program. This helps school students prepare for future climate risks, such as having safe spaces in case of emergency and evacuation plans in place for school students. The focus is currently on primary students. This innovative program would further benefit from an extended focus to include the needs of younger children, particularly from birth to 3 years, which are very distinctive from the needs of children attending school. As there is limited data on attendance rates for early childhood education in Fiji (UNICEF, 2021a), there would be a benefit to also extending the focus to the home environment.

Regional Leadership and cross-sectorial collaboration for ECD

At a side event at the recent Pacific Islands Forum Leaders Meeting in Suva, Fiji (12-14 July 2022), Forum Chair and Fiji Prime Minister Bainimarama and Samoa Prime Minister Fiame Naomi Mata’afa officiated the *Pacific Child Website Launch* and the Pacific Regional Council for Early Childhood Development (PRC4ECD) Commitment to Climate Change. Young children of *Mobile Kindy Fiji* led the program in which they alongside members of the Pacific Climate Warrior advocacy group shared their perspectives with Pacific leaders on the importance of early childhood development in building resilience, addressing inequity and adversity and contribute to accelerating the efforts for sustainable development and social justice.

Prime Minister Bainimarama took on the role of Pacific ECD Champion to encourage investment and action for the young children of the Blue Pacific to ensure a climate resilient future. PRC4ECD has representation from each of the 15 Pacific Island countries and territories: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tokelau, Tuvalu, and Vanuatu. The Council members are comprised of at least two Ministers – one from the Ministry of Finance, and at least one from the social sector (Ministries of Health, Education, and the Ministry responsible for Social Welfare) – with UNICEF Pacific acting the Secretariat of the Council. By collaborating across sectors and countries at forums, the council is a great example of a convening body who can utilise champions from different sectors to scale up integrated messaging and prioritisation of early childhood development as part of building a thriving society, and a healthy planet for future generations

CHALLENGES AND OPPORTUNITIES

Challenges

- Fiji is a relatively small island nation and one that is one of the most directly impacted by rising sea levels. While much can be done in the country itself to positively address CC&ED, this will require collective action, not only from the Fijian Government and private sector, but also the world’s industrialised nations, which contribute significantly to global carbon emissions (COP 23 Fiji, 2018).
- International support will also be essential in helping Fiji mobilise the necessary resources required to combat CC&ED and implement DRR in country.

- There is a lack of targeted and age disaggregated focus on young children (particularly birth to 3 years) in existing policies, programs and planning.

Opportunities

- At the time of writing this report, greater policy measures are being undertaken to address issues with respect to resourcing in Fiji (UNICEF, 2021). This has included developing sector-specific plans to raise funding and ensuring Fiji's national development plans align with external aid and national budgets where possible (Devadason, Jackson & Cole, 2019).
- Efforts have also commenced to strengthen the ECE sub-sector in Fiji and other Pacific Islands to include impact of climate-related disasters and building climate-resilience for the youngest learners, through policy review, curriculum and workforce training.

Recommendations

The following recommendations are expanded in Chapter 11, below (where indicated).

- a. The Fijian government and private sector remain dedicated to advocacy work in the area of climate change, however, there exists a lack of internal technical expertise, human resources, and funding, which are essential to create and implement mitigation measures (COP 23 Fiji, 2018). Educating both specialists in these areas as well as the ongoing training of general educators at all levels in CC&ED will ensure that human resources are available to support the necessary adaptation across Fiji; see 11.5 (f).
- b. Data on the needs of young children in the face of CC&ED is critical in understanding what pathway and application of resources will best serve those in most dire need; see 11.5(e).
- c. In collecting targeted and age disaggregated data across Fiji young children's voices can continue to be privileged to maximise outcomes when conducting situational analysis to guide program design. Consideration should be given to the needs of young children across the developmental spectrum; see 11.4(b).
- d. In addition to planning for the future, focus on the present generation of young children is critical through the ongoing development and revision of child-centred CC&ED curricula. Fiji is already doing significant work in this area, and this must continue to be supported in both its development and continuous implementation to be impactful for all young children in Fiji; see 11.3(d) and 11.3(b).



RECOMMENDATIONS: LOOKING FORWARD TO SUPPORT A FOCUS ON YOUNG CHILDREN

The final chapters of the Scoping Study draw on the previous information sources (research evidence, policy frameworks, case studies, the questionnaire, etc.) and expert views to chart a path for the immediate future and medium term.

Chapter 10 provides a summary and reflection on the power of adopting a child-centred approach to climate actions and environmental protection. An overview of the child-centred approach is given emphasising top-down (10.1) mechanisms to ensure that the process of responding to and planning for children can be factored into other complex decision-making and planning processes so that they are implemented in ways that adequately reflect the needs and rights of children as described in the previous chapters. By contrast, the child-centred approach can be described in term of the bottom-up (11.2) processes and actions that are needed to ensure that children's views, voices, and perspectives are heard and responded to. This distinction between top-down and bottom-up mechanisms and processes can also be described, respectively, in terms of doing things for and with children (CCCC, 2015).

An important feature of Chapter 10 is the articulation of the need to develop a tool so that the nurturing care needs of children can be understood and differentiated in ways that are appropriate for the early years when integrating ECD with climate actions and environmental protection. The principles that should underpin such are tool are specified clearly in section 10.1.

Chapter 11 provides a call to action through a wide-range of recommendations that are derived from the findings of the Scoping Study and reflect the principles of a child-centred approach to climate actions and environmental protection. Furthermore, the recommendations are formulated at many levels, including, home, community, schools and ECE/ECCD services, programs, and services. The approach adopted in Chapter 11 is designed to provide many possible starting or entry points. It is not appropriate to advocate for all these recommendations simultaneously, and some will be more relevant to specific contexts. Nevertheless, the comprehensive approach taken in Chapter 11 is designed to facilitate flexible adaptation and to make the challenges and opportunities of integrating ECD into climate action and environmental protection more concrete.

Finally, **Chapter 12** revisits the main issues identified in the scoping study through the lens of policy considerations and development. Decision makers are encouraged to champion policy change and development in ways that reflect the child-centred approach and support tangible improvements for children and their caregivers through the rigorous disaggregation of childhood based on meaningful periods of developmental transition. Only by applying such discipline in policy and program development will appropriate analysis be given to the lives of young children so that their wellbeing will be supported and the harms that they will experience because of CC&ED will be reduced.



10. Adopt a child-centred approach to inform climate actions and environmental protection

Referencing children in a policy is not enough. Policies must also cover interventions targeted at children in areas that are most material to children's needs and rights in the national context. Since children face specific and heightened risks in the context of climate change impacts, it is vital that policies integrate measures to address these risks through a holistic and multi-sectoral approach to low-carbon, climate resilience that encompasses education, health, food security, water and sanitation, housing and social protection.

(Pegram & Colon, 2019; p. 12)

The previous Chapters of this report document broad recognition that the effects of CC&ED on children are profound, while at the same time reflecting the fact that children have been given relatively little direct or privileged consideration in relation to planning for and responding to the impacts of CC&ED. In fact, there are no child-neutral policies; all policies must very clearly include the needs of children, or they are causing harm by grouping children's needs in with the needs of adults. In this chapter, a child-centred approach to inform responses and planning for CC&ED is discussed and elaborated (CCC, 2015), first in terms of the top-down mechanisms that can facilitate, support, and operationalise the inclusion of children's nurturing care needs in relation to climate actions and environmental protection (10.1), and second in terms of the bottom-up principles and mechanisms that can engender young children's participation and agency in responding to CC&ED (10.2).

10.1 Doing things for children: Top-down considerations

By using the Nurturing Care Framework for early childhood development (NCF; WHO et al., 2018) as an organising structure (see Chapter 4), it becomes clear that the impacts of CC&ED on children are diverse and wide-ranging, and are highly dependent on context (e.g., nature of the environmental conditions, exposure level, access to resources, existing level of vulnerability, and capacities to manage the shock etc.). This fact alone strongly suggests that if we are to recognise and respond to the challenges facing children it will be important to work through and understand different domains of impact so as to allow a full appreciation of how to plan and

respond in ways that address children's needs and rights in a holistic sense. Furthermore, as discussed in Chapter 3, there is a clear need to differentiate children in the early childhood period (conception to 8 years), both in terms of their developmental stage and important individual characteristics (e.g., gender, the presence of a disability, etc.), if we are to understand how the impacts of CC&ED will be experienced.

In recognition of these factors, **there is an acute need to establish a child-centred approach or tool to inform responses to and planning for CC&ED**, whether that be in the context of an immediate response to a catastrophic event, the development of policies to improve adaptation to CC&ED, or any other response where the ongoing needs and rights of children are affected because of CC&ED. Importantly, a child-centred approach or tool should be inherently developmental, building in recognition that,

- a. the impacts of events are experienced differently at different stages of development
- b. duration and timing of experiences do not have the same meaning or impact at different stages of development
- c. the early childhood period represents, along with the end of life, the time at which individual wellbeing is most closely dependent upon the structures of caregiving, family, and community

Establishing a child-centred approach or tool implies that the process of responding to and planning for children can be factored into other complex decision-making and planning processes in a way that adequately reflects the needs and rights of children as described in the previous chapters. Key factors to be considered within the development of such a tool will include sensitivity to the immediate and broader context, and the following elements:

1. Identification of *differentiated domains of impact* on the child and the caregiving system as, for example, defined within the nurturing care for early child development framework (NCF; WHO et al., 2018)
2. A determination of whether/how environmental and climate impacts differ in relation to the *stage of development* (i.e., conception and pregnancy, infancy to toddlerhood, preschool, early primary school)

3. A determination of whether/how environmental and climate impacts differ in relation to important *characteristics of the child* (e.g., gender, presence of disability, etc.)
4. Understanding of how the *duration, intensity* and *(in)tractability* of environmental and climate impacts affect children (at different stages of development) differentially and cumulatively
5. Articulation of the ways in which proposed or current responses will address the differentiated domains of impact on the child (see point 1), and how that will be *evaluated or measured*
6. A clear strategy to capture and communicate the views, voices and perspectives of children and their caregivers, and an *accountability mechanism* to ensure that such information is used appropriately
7. Consideration of how *risk factors and situational volatility* will threaten or undermine proposed or current responses

Using a child-centred approach privileges the capacity (in absolute terms) to provide and sustain a nurturing caregiving environment for children when considering CC&ED impacts and responses, adaptation planning, and mitigation strategies. It is an approach to supplement other decision-making and planning processes so that the needs and rights of children can be adequately considered and responded to. The WHO NCF (2018) provides a consensus model for this process as it embodies children's needs and rights in relation to the actions of communities, service providers, NFPs, governments, etc. **Analysis can proceed in consideration of differentiated developmental impacts (consequences) and in terms of the severity, duration, and (in)tractability of disruptions to nurturing caregiving within the NCF focus areas:** i.e., health, nutrition, caregiving, early learning, safety. The child-centred approach is consistent with but differs in emphasis from the child-sensitive analysis of climate change policy described by Pegram and Colon (2020) in that it is more squarely focused on the early years and it offers a productive approach for understanding and responding to the nurturing care needs of children in a variety of domains, including, but not restricted to, policy and programs (see Chapter 10, above, for a discussion). Chapter 5 highlights considerations derived from such an anticipated child-centred approach for the purposes of illustration, and the child-centred approach is adopted throughout the sub-regional analysis and case studies (Chapters 7 to 9, above).

10.2 Doing things with children: bottom-up considerations

In adopting a child-centred approach it is important to ensure that the **views, voices, and perspectives of children** are not lost in our attempts to meet their needs when developing policies and programs in response to CC&ED. Throughout this report, we have stressed the need to recognise that children are stakeholders with rights and the ability to contribute to mitigation and adaptation strategies both now and in the future (e.g., Pegram & Colon, 2020). This positive view can be contrasted with a negative view which sees children as vulnerable or powerless. Whilst it is true that children are the most vulnerable and that the impacts of CC&ED will be most acutely felt by the youngest children, it is also true that we – parents, communities, health workers, educators, local governments, policy makers, political and community leaders, etc. – have a responsibility to empower children (see Section 12.2 *A focus on young children's voice*) to develop in ways that allow them to:

1. build an **understanding** of CC&ED throughout their educational pathways starting in the early years
2. acquire **knowledge** about the things that they can do, individually and collectively, to mitigate and adapt to the effects of CC&ED
3. **participate** in initiatives, both modest and ambitious, to positively impact their own environments and communities
4. have a sense of agency, in particular **collective agency**, to meet the challenges of the present and the future

Mechanisms that allow children to see the impact of their own initiatives and voices are empowering because they give children a sense that they have both the right and the ability to influence their world. **Authentic engagement** by children in tangible ways changes to their lives, communities, or institutions (e.g., schools), shows them that they have agency, and begins the process of educating them about how to involve themselves in change (CCC, 2015). Whilst such goals may seem ambitious, there are many concrete examples that already suggest the way forward (see section 5.4, for example) and there is ample evidence that, even in the preschool years, children can engage with their communities in ways that bring about changes aligned to their needs and views. To become agents of change, children need to see themselves as being able to make a positive difference within a complex and challenging future.

11. Act at multiple levels to ensure young children's nurturing care needs and their rights are upheld

In July 2022, the UN General Assembly (UNGA) passed a resolution recognizing the right to a clean, healthy, and sustainable environment as a human right. The Sustainable Development Goals (UN, 2018) also specifically note the need to ensure that children:

- achieve universal, equitable access to water, sanitation, and hygiene
- have less exposure to pollution and, thus, pollution-related deaths and illnesses
- have access to quality early childhood education and care
- are developmentally on track (particularly for ages birth to 5 years)

Climate change and environmental degradation presents a significant impediment to meeting these rights for all humans but impacts the youngest members of our communities most profoundly. The full value of ECD is contingent upon advocating for ECD systems and services to become climate-sensitive, better integrated, and better financed so that high-quality, inclusive, and equitable ECD outcomes can be realised.

The work presented in this document – the global impacts survey and desk review, the sub-regional analysis and case studies – represents an initial attempt to bring together evidence and practices that will allow government and communities to better consider and incorporate the needs of children when planning for and responding to CC&ED. We anticipate that the recommendations identified below, which reflect the insights and perspectives gathered from a consideration of the current evidence base, practices, and leaders in the sector, will continue to evolve as wider stakeholder groups are engaged, practices evolve, and evidence improves.

It should be acknowledged that there are clear gaps in evidence base that limit the ability to provide comprehensive recommendations across all areas of need or all sub-regions. **A key recommendation, therefore, is that additional research is needed to investigate the impacts of CC&ED on ECD**, specifically looking at the age groups identified and explored in this paper and effective responses to their needs. Research into engaging young children's voices and on the needs of groups who experience more vulnerability, such as children with disabilities or from low-income families, will also greatly improve the ability to respond and plan in effective and impactful ways.

The recommendations identified here refer to components of the Nurturing Care Framework (NCF) for Early Childhood Development (WHO, United Nations Children's Fund, World Bank Group, 2018). This approach is designed to draw attention to the need to operationalise considerations for young children facing climate and environmental impacts through the design and delivery of services and programs, the development of policy, and the support of more direct community action. The NCF is applicable across multiple sectors and highlights key considerations for young children and caregivers, including nurturing care, appreciation of caregivers' efforts, enhancing caregivers' skills and knowledge, and addressing the challenges facing caregivers.

Whilst there are abundant recommendations at many levels specified below, **this approach is designed to provide many possible starting or entry points**. It is clearly not appropriate to advocate for all these recommendations simultaneously, and some will be more relevant to specific contexts, but the comprehensive approach taken in this chapter is designed to encourage actions at multiple levels, facilitate flexible adaptation, and make the challenges and opportunities of integrating ECD into climate actions and environmental protection more concrete.

Finally, it is important to acknowledge that, while each sub-region and country has shared concerns, they also have unique challenges. When presenting recommendations below, therefore, examples are provided from preceding chapters of the current report in **blue text** to help contextualise the recommendations and provide links with good practices or approaches from a variety of sources. Going forward, sharing knowledge, practices, and initiatives (policy or program) will enhance the abilities of jurisdictions to innovate and respond to challenges.

11.1 Build resilience within families and homes

The nurturing care needs of young children facing the impact of CC&ED are primarily met through their immediate family unit or home. It is widely understood that the first years of a child's life, including the period of development during pregnancy, create the critical foundation of health, well-being, and productivity (WHO, 2019). This period of rapid development is also the time when children are spending significant time in the home and with their immediate

caregivers, developing in direct response to interactions and exposures in their environment. As such, addressing the impacts of CC&ED in the home is critical.

It is important to emphasise that social systems and programs that support parents and caregivers also support children and build resilience for future challenges posed by CC&ED. Parents and caregivers have primary responsibility for children’s nutrition, safety, social engagement, and cognitive stimulation (WHO, United Nations Children’s Fund, World Bank Group, 2018). To meet these needs parents and caregivers themselves need to have reliable and accessible social support systems in place. This should include community initiatives that build family resilience through networks and support systems, but also child-sensitive social protection policies, protection from gender-based violence, and financial support or support of livelihoods. Safety and security for children and families are always important but they become even more critical during times of disruption and crisis. Recommendations that specifically address or respond to CC&ED within the context of the home include:

- a. **Empower parents and caregivers to create climate resilient homes.** Interventions designed to promote responsive caregiving during times of environmental crisis should also provide tools for parents. The strong link between caregiver physical and mental health and children’s developmental outcomes necessitates a focus on caregiver wellbeing (WHO, 2019). The need for resilience is critical during emergencies related to CC&ED where health systems are most compromised, and caregiver stress is high (WHO, 2019). Empowerment strategies can include interventions to address parent and caregiver wellbeing through stress management strategies, coping mechanisms, and an understanding of how to help children manage their own stress. For example, providing caregivers with additional resources to be responsive to young children’s needs, such as simple stimulating games or activities that can be incorporated during the daily routine, can also play a role in enhancing parent effectiveness, identity, and wellbeing. Furthermore, groups such as Warrior Moms (Case study 2, above) offer an opportunity to engage and empower parents in supporting their children’s needs in the face of CC&ED.
- b. **Enable safer home environments.** Supporting parents and caregivers to create safer home environments by raising awareness of the dangers posed by CC&ED is an essential element of future adaptation and resilience. Providing parents and caregivers with accessible and actionable information on the impact that CC&ED has on children (including during pregnancy) will improve the safety and security of young children. Parents and caregivers can work to create safer home environments when they are aware of the dangers that are present, such as sources of internal air pollution (e.g., from heating), the health impacts of polluted water sources and lead exposure, and the long- and short-term effects of extreme heat.
- c. **Provide guidance and support for responsive caregiving in practice.** Evaluation of current caregiving practices within existing communities can inform the development of additional support strategies to encourage and enhance responsive caregiving. Strategies might include a focus on creating a safe home environment, building family bonds, increasing the amount of time parents spend with their children, privileging and advocating for activities that educate on playful interactions, supporting appropriate routines, and ongoing education initiatives about the importance of breast-feeding and providing adequate nutrition to young children. Connections between the education sector and health services can be designed to support parents and caregivers with the ongoing need for responsive care and its importance when managing the impacts of CC&ED.
- d. **Child-sensitive risk assessment.** Developing a home-based child-sensitive risk assessment to identify and reduce dangers within the household has the potential to create and maintain safer home environments in times of disruption due to CC&ED. Existing tools developed by UNICEF and Save the Children, which look at DRR, can be adapted to be more targeted and include environmental risks within the homes and the immediate home environment. Risk assessment could then be conducted as

part of routine maternal, new-born, and child health programmes by health workers who already raise awareness about creating a clean and safe home for very young children (WHO, 2019).

- e. **Data collection.** Ongoing evaluation of current child health data, including rates of illness, growth patterns and the impact of malnutrition, is needed to provide a better understanding of the impacts of CC&ED in the home at all age levels. When it is possible, health data can be integrated with other early childhood data sources, such as participation in ECE and contact with child protection services, which are also potentially highly relevant to understanding impacts of CC&ED. Where current data collection is insufficient, jurisdictions should consider using approaches to data collection (including establishing baseline profile and ongoing monitoring) that is economical, valid, and efficient¹. Where possible, existing data should be disaggregated by age because of the profound difference between developmental stages/periods during early childhood. Planning for future data collection mechanisms should build in the capacity for dis-aggregation. Ensuring that parents and caregivers have ways of accessing and understanding such data at the level of their community is also necessary to support local advocacy for the rights of their young children.

Summary. The home environment is complex, and any changes can be a sensitive area of discussion for parents, caregivers, and the wider family group. All recommendations implemented in the home environment should consider cultural structures and behaviours and be respectful to the needs of individual families. As the home takes such a central role in the early years of a child's life, and directly impacts a child's development and growth in all ways, it is essential to consider how changes can be made to most effectively address gaps by empowering parents and caregivers to enact nurturing care. When these structures are strong, the capacity to be resilient and respond positively during times of climate crisis and disaster will be improved. In considering the impacts of CC&ED on the family and home, consideration should be given to what home may look like in times of disruption as a result of natural disaster and/or displacement, and how recommendations can be viably implemented to address these changing needs at times of crisis. Coordination with those responsible for DRR policies, services, and mechanisms is critical to ensure that acute responses are sensitive to the needs and rights of young children, and the importance of their family and home environment is fully integrated and central to planning.

11.2 Support and enable communities to be engaged

At a community level, there exists potential to strengthen awareness around, and resilience against, risks presented by CC&ED for children from birth to 5 years in the Asia-Pacific region. The community that exists around a young child – physical and social structures outside of the immediate household and family unit – has a significant impact on a child's ability to access and receive all components of the NCF through their caregivers and community members, which promotes and protects ECD. Physical locations include community centres and shared play spaces, but can also include localised services (e.g., recycling programs, safe transportation routes, and child-friendly urban planning) and human resources (e.g., social and health workers, mothers' and parents' groups, religious leaders, and educators) (WHO, 2019). Recommendations are as follows:

- a. **Raise local awareness and support action campaigns.** Community networks are an opportunity to increase awareness of the impacts of CC&ED on ECD through localised programs. Awareness can be linked to tangible action through targeted activities or themed programs to transform the community into active members that

¹ The Early Childhood Development Index provides a viable tool for population monitoring purposes and can be supplemented with bespoke items that are relevant to different jurisdictions (<https://data.unicef.org/resources/early-childhood-development-index-2030-ecd2030/>)

protect their environment and adopt positive solutions. Engaging local community members who are highly respected – such as local members of government, educators, and religious leaders – provides a conduit for key messaging to the wider community. Building on existing community networks – e.g., childcare centres and schools – is also a viable and efficient way to disseminate information about climate change, health, adaptation, and mitigation. Such networks require well-managed, consistent funding to maximise impact.

- b. **Create community stakeholder groups.** In addition to local awareness campaigns, the creation and support of local community stakeholder groups can help to ensure direct access to feedback regarding the needs of a particular community. Community stakeholder groups engage local community members, thereby increasing the agency of individuals, families, and the wider community. This approach is particularly important when considering CC&ED because there are many community-specific concerns. Community stakeholder groups should include local stakeholders alongside community leaders and representatives with knowledge of CC&ED. Through shared communication and planning, messages can be amplified with the support of local leaders who can utilise feedback for advocacy and implementation of CC&ED related planning and responding to ECD needs at a local, state or national government levels.
- c. **Promote and support citizen science programs.** Citizen science programs are an impactful avenue for community engagement and an opportunity for advocacy at a community level. Citizen scientists, through their participation in data collection and project or program design, directly inform resource management and policy making, while engaging and educating the community. Emphasising the community members as experts in their environment ensures that the needs of their community is centrally positioned to work around CC&ED mitigation and adaptation. Citizen science programs also create a sense of ownership and empower community members in CC&ED. Involving children in these programs is critical as it increases their participation, and they have a perspective that is often missed in research.
- d. **Provide safe and healthy community environments.** Climate change and environmental degradation present various impediments to safe, outdoor play for young children. Opportunities for safe, outdoor play should be prioritised because of the direct benefits to children and because of the focus such initiatives provide on the environment (e.g., lack of green space, contamination of land and water, etc.). Local governments are typically responsible for providing healthy play environments, such as parks and playgrounds, and ongoing development, design and refurbishment of these spaces should be conducted in partnership with the community. Play spaces and parks can, in many contexts, provide access to clean drinking water (through taps or drinking fountains), shade (through water-resistant, climate appropriate, local trees), adequate seating, bathrooms or latrines when possible, and appropriate rubbish disposal and cleaning. These spaces need to be easily accessible by foot, bike, or public transport to ensure they are accessible to all members of the community. As part of this initiative, providing education about the importance of physical activity to both caregivers and young children is essential to ensuring parents and caregivers prioritise safe, outdoor play opportunities irrespective of the impacts of CC&ED on their communities and immediate families. In times of crisis, shared environments can also act as a meeting place for communities, for action and for sanctuary for children in times of heightened climate stress.
[An example of creating safe and healthy community environments is the Limeños al Bicentenario in Peru \(section 5.4.3\) where 19,000 m² of Lima's urban development across 11 sites was transformed into natural play spaces for children.](#)
- e. **Identify and act on community-based child-sensitive adaptation strategies.** While national adaptation plans are critical, exploring the impact of the climate crisis at a local level can reveal the needs of the most vulnerable populations (Children in a

Changing Climate Coalition, 2015). Children living in poverty or in rural areas may not immediately benefit from programs that target cities or nationwide education changes. Community-based adaptation can be targeted to the needs of a small or changing population (such as in times of displacement) and can quickly address priority needs. Considering the needs of young children should be a high priority when conducting local-level vulnerability assessments and the resulting response or intervention. [This fits with the need for targeted data aggregation, highlighted by the climate change expert panel in Chapter 6 \(see section 6.4 in particular\), where it is argued that data can support the understanding of CC&ED issues for young children. Such data can also assist with the development of child-sensitive climate policies and programs \(this contrasts with IO.I.E, emphasising child-focused data\).](#)

- f. **Provide targeted resources for child-sensitive disaster risk reduction (DRR).** To ensure that the recommendations presented above can be implemented, policy makers need to include funding targeted towards child-sensitive disaster risk reduction assessment that results in the identification of community resources in all policy, program, and service planning. These resources (material, human, technical and financial) should be in addition to, and separate from, nationwide plans and funding streams. Explicit resources to address the impacts of CC&ED on young children in local communities, with local authorities able to access these resources quickly in times of crisis, will ensure that they are made directly available to those who need them most. Local stakeholders are also best placed to make recommendations about the application of funding and resources for longer term planning and development of community resources and campaigns.

Summary: Members of the community itself are a community's greatest resource. Engaging community members, including young children, provides an opportunity to reposition individuals as experts in their own lives and the spaces in which they live. It also models collective agency and action to children within the community. Planning should consider strategies for the harnessing of this immense resource through local awareness campaigns, local stakeholder groups, and citizen science programs to ensure that larger infrastructure and preparedness work reflects the needs and wants of the community. This requires funding for the provision of physical resources and child sensitive localised DRR and adaptation strategies.

11.3 Focus on schools and ECE/ECCD settings

The importance of high-quality early learning opportunities in providing an inclusive, nurturing care environment has been acknowledged for many decades (WHO et al., 2018). With growing awareness of the significance of early childhood education for young children, as well as growing numbers of children attending early childhood education services, schools and early childhood education settings are recognised as a gateway into changing children's lives and trajectories with the support of their parents, caregivers, and educators (WHO et al., 2018). Early childhood education provides a setting in which young children and families can be educated about the impacts of CC&ED and its consequences for ECD. Recommendations are as follows:

- a. **Provision of safe and secure physical environments.** The planning and design of schools and ECCD services should consider the impact of CC&ED. Child safe buildings, such as those that include ventilation systems in locations with high levels of air pollution, should be standard. Green spaces and energy-efficient buildings should also be prioritised. Physical spaces can be designed or modified to increase their resilience to natural disasters as well as the ongoing impacts of climate change (e.g., prolonged periods of high heat) to reduce the need for closure and disruption to education. [The Bernard van Leer Foundation's Urban95 program has created an Early Years Starter Kit \(Case Study 2, Chapter 9\) which acts as a helpful starting point for considering the needs of children in local infrastructure and policy design.](#)
- b. **Provision of consistent access to high-quality early childhood education.** Young children should receive consistent access to high-quality early learning services

prior to formal schooling, and consistent access to formal education in their primary years. All young children should have access to an age-appropriate safe and secure environment, and this remains essential when faced with CC&ED issues. Children should also have access to a safe means of transportation to and from ECCD centres, school, services, and other activities to enable access to early learning opportunities (WHO, 2019).

- c. **Efforts to provide continuity of education in times of crisis.** Consistent funding is required to maximise remote learning opportunities in instances where natural disasters and other public health emergencies make it impossible to reach a physical education setting. This may include education opportunities in disaster shelters. For education to be most impactful, whether at an ECCD level or later schooling, it needs to be accessed without disruption whenever possible. [Save the Children \(2020\)](#) has created a multidimensional [continuity of learning framework](#) in response to the needs of children in ECCD during COVID-19 that could be readily adapted for CC&ED needs. This includes provision for remote, in person, and online and offline opportunities as well as tools to for caregiver supporter and semi-independent pathways to ensure all children have some access to ECCD resources.
- d. **The development of child-centred climate and environmental curricula and advocacy programming.** To maximise resilience and awareness, early childhood services and primary education should incorporate environmental health, social-emotional learning, and education on resilience and climate action into their curriculum. For example, CC&ED education is being included across the curriculum from primary school to university within Cambodia (see 5.6.1), yet it is not clear whether this also counts for early childhood education. By providing education on environmental health (inclusive of CC&ED programs) into ECE, young children are offered the opportunity to be drivers of change in the future and utilise their knowledge and awareness of environmental issues to spread awareness throughout communities. [The 4CA program](#) (Child-Centered Climate Change Adaptation Project) is a helpful starting point for developing this approach to programming for young children (see Case Study 3, Chapter 9). Additionally, [Earth Warriors](#) is one of the world's first comprehensive climate education school curriculum for 3- to 11-year-olds that uses a positive and empowering approach, and even has a free school pilot to try lessons.
- e. **Privileging and amplifying children's voices individually and collectively.** Incorporating CC&ED into school curriculum, as well as including children's voices in programs, is challenging, especially in the youngest children. Nonetheless, there is a growing need for inclusion of CC&ED into school curriculum to be undertaken in a measured and legitimate way to ensure that the youngest children's voices are elevated and heard. Children can act as drivers of change from an early age, but this is usually overlooked or its importance to children and the community is undervalued. Having high expectations on what young children can do and providing the opportunity for them to do it can lead to highly impactful change and have long lasting impacts as children develop within their community. This can be achieved with support from educators who understand meaningful activities and age-appropriate approaches that can be used to draw out children's perspectives, needs, challenges, and aspirations across different stages of development. [Zimbabwe's strategy](#) (section 5.4.1) highlights the importance of raising awareness and access to information for children to understand how climate change impacts on their rights, opportunities, and responsibilities. In addition, the strategy encourages the inclusion of children's voices in the development of adaptation and mitigation actions and interventions.

Summary: Consistency and continuity are key in ensuring that young children's access to high-quality education is retained during periods of climate crisis and natural disaster. Pre-existing frameworks will support the widespread implementation of flexible learning strategies under challenging conditions, while additional funding will allow for the adaptation of existing

infrastructure to reduce disruption wherever possible. All education programming should be child-centred, and children including the early years group should have the opportunity to advocate for their own needs, and to be heard. Young children must receive targeted, appropriate CC&ED education to increase their resilience moving forward.

11.4 Strengthen programs

Strengthening programs to meet the nurturing care needs of young children and caregivers facing climate and environmental impacts should involve situation analysis, financing, scaling-up and monitoring of existing programming, and regular monitoring and adjustments to enhance effectiveness. Recommendations are as follows:

- a. **Increase financial support.** Programs require adequate public and climate financing to ensure high quality support can be provided to young children. Increasing public finance is critical to support current programs and develop and sustain new programs to support young children facing the impact of CC&ED. This starts with building awareness around the CC&ED impacts on young children so that Governments and stakeholders recognise the importance of providing programs to support and respond to their needs.
[This recommendation is in line with the COP26 Glasgow Climate Pact \(United Nations, 2021\), which ensures countries are committing significant finances towards their climate change goals.](#)
- b. **Incorporate situation analysis to guide program design.** Links between ECD and CC&ED can be strengthened through (1) the development of a template for situation analysis that allows those designing programs to position young children at the centre and understand the impact and threat of CC&ED on their development, and (2) testing and using this template to inform the design of climate-sensitive programming. Such situation analysis should be informed by a child-centred approach (see Chapter 10 and proposed tool, 10.1). The first step in strengthening ECD programs in each sub-region or country should include such an analysis. The NCF (WHO et al., 2018) can be utilised when bringing together relevant stakeholders to assess the current circumstances in a country/region and identify actions based on strengths and opportunities for improvement in current programs for young children and caregivers (WHO, 2019). A situation analysis can then assist in determining whether additional programming is required.
- c. **Monitor programs.** A key consideration in operationalising the Nurturing Care Framework is program monitoring across various sectors, including the health sector. In the case of CC&ED, program monitoring should aim to assess the provision, coverage and quality of services provided to young children and caregivers (WHO, 2019). Moreover, program monitoring should assess whether programs are equitable and accessible across different areas (rural/urban, and with consideration to socio-economic status), and whether they are having their intended impact both on child development and caregiving practices (WHO, 2019). The Logic Model in the NCF (WHO et al., 2018; see Chapter 4) offers one option for tracking inputs, outputs, and outcomes, and is a solid foundation in creating a program monitoring strategy/plan that can be easily adapted to the CC&ED context if due consideration is given to climate and environmental challenges facing communities and the likely impacts for young children. Consideration should also be given to how information will be obtained, validated, and used (see Pegram & Colon, 2020, for a broad discussion concerning child-sensitive indicators)
- d. **Evaluate program impacts.** Regular program reviews (ideally multisectoral) should be undertaken to ensure they are meeting the evolving needs of young children and caregivers, alongside the evolving landscape of CC&ED in their country/region. Reviews should include identification of barriers to coverage and impact in order to adapt programming to best meet the nurturing care needs of different communities

(WHO, 2019). Review data can then be used for advocacy, accountability and increasing investment (WHO, 2019). [The UNICEF Mongolia program \(section 5.6.3\)](#), which demonstrated how new construction methods and key retrofitting can significantly improve the air quality of indoor spaces for young children, is a good example. The evaluation of this program led to the instalment of electric heating in all kindergartens across Ulaanbaatar by the government.

- e. **Enhance facilitator knowledge of ECD.** Early childhood development programs should be supported by knowledgeable and skilled facilitators who have education and training to support young children facing the impact of CC&ED. This should include education and training in young children’s unique needs across different developmental stages in the context of threats posed by CC&ED, such as supporting social emotional learning, a holistic understanding of children’s development, some knowledge about the impact of adversity on development, and the ability to respond when they encounter children experiencing adversity.

Summary: Programs or interventions for young children that focus on the CC&ED issues must be thoughtfully designed and implemented to impact young children and their environment successfully. Firstly, there is a need for more sustainable financial support for new programs and already existing programs to continue to impact the most vulnerable children effectively in the Asia-Pacific region. This will require awareness raising and advocacy at higher levels, such as COP27, on the importance of CC&ED impacts on the youngest children. Secondly, to specifically address the needs of young children, programs should incorporate strong methodological approaches, including situation analyses, monitoring, evaluations, and facilitator training.

11.5 Create resilient, child-centred services

Early childhood and child and family services ought to optimise children’s development and, as such, their design and delivery must consider the impact of CC&ED. WHO (2019) note that the “most effective, efficient and equitable approach to reach all people and meet priority needs is primary health care” (p. 2). Primary health care is an avenue by which nurturing care can be supported across the population, through provision of quality health services and critical public health initiatives that foster multisectoral action for young children and families (WHO & United Nations Children’s Fund, 2018).

Whilst primary health care serves many distinctive functions, it also has many potential points of intersection with other essential children’s services, such as ECE and family services (e.g., housing, child protection, etc.); as is reflected in the NCF (WHO et al., 2018). Efforts to **integrate service provision**, where possible, improves impact and uptake. For services to have an impact on awareness raising and resilience building in relation to CC&ED, it is important that the professionals and organisations delivering such services are themselves aware of the CC&ED impacts and vulnerabilities of the communities they work with, and they are enabled to facilitate information exchange; providing high-quality information to the families and communities they are serving (see 11.1 and 11.2, above), and providing an information conduit (through informal and formal mechanisms; e.g., 11.1.(d) & (e) and 11.2(e), above) to ensure that future programs, policies and services are informed by the needs and voices of children and the communities supporting them. Furthermore, for services to have their desired impacts, it is important that service provision is accessible, wide-reaching (both geographically and with respect to all nurturing care components), evidence-based, and high-quality. Recommendations for services include:

- a. **Strengthen intersectoral cooperation.** CC&ED, health and ECD services are typically siloed. Encouragingly, there are growing relationships between services and organisations that strive to support young children’s rights and need within the CC&ED context. Intersectoral cooperation provides opportunities to bring services and organisations together to build climate sensitive ECCD programs and climate resilience for young children, as seen within ARNEC’s climate change conference in July 2022. [The COP26 Glasgow Climate Pact \(United Nations, 2021\)](#) highlights

the need for services to work together, across countries, toward collective action. In addition, within the sub-regional analysis it was emphasised that the CC&ED sector is currently siloed, and more can be done by governments and non-governmental organisations to start working together to support the needs of the children and caregivers (section 8.2).

- b. **Work to make services genuinely accessible and plan for adequate coverage.** Often the most vulnerable in a community are the hardest to reach and this is the case when considering the impact of CC&ED on ECD. Community advocates need to be in place (and well supported with relevant training and resources) to facilitate understanding of child and community needs, as well as access to basic services (WHO, 2019). There are several key contact points (e.g., antenatal care, postnatal care, immunisation) that must be considered in the design of service provision to ensure no child is left behind (coverage) in the face of CC&ED issues and to provide a foundation for community engagement and further service delivery. Planning and investment are required to make services accessible. Situation analysis can be used to determine what services and interventions currently exist, and their effectiveness for different age groups. Consideration can then be given to how existing services can be strengthened and, where this is not possible, how additional support can be facilitated to improve CC&ED resilience.
- c. **Plan for the integration of CC&ED perspectives in service delivery design and implementation.** Across many health and other ECD services in the Asia-Pacific, there appears to be a lack of information on CC&ED, including a lack of clear guidance on how to foster responsive caregiving and early learning when dealing with natural disasters and other climate events. Essential services should include information and awareness raising measures in relation to the detrimental impact of CC&ED on ECD. This can include, for example, advocacy for social protection policies that ensure essential support for those families that are most vulnerable (WHO, 2019). Similarly, an *environmental health history* can be assessed as part of regular health service visits, both for pregnant women and women planning pregnancies, to ensure a complete and thorough assessment of climate and environmental risks.
- d. **Identify and ensure continuity of effective service provision.** It is important to identify established health and other ECD services that are already addressing CC&ED issues and responding effectively. Where such good practice or innovation can be identified, it should be supported and, where appropriate, expanded for greater impact. This requires mechanisms to recognise and become aware of varieties of existing service provision and undertake impact monitoring and evaluation, as well as a commitment to the financial sustainability of effective services. The continuity of effective, essential services will enhance knowledge and spread good practice regarding the impact of CC&ED on ECD.
- e. **Build and re-evaluate the evidence base.** The availability of disaggregated data on the impact of CC&ED on young children is limited. There exists a need, therefore, to form a solid evidence base for continuous service improvements. From there, it is recommended that services implement evidence-based approaches (with data feedback mechanisms) to monitor children's development and improve service quality as necessary. See, for example, *the child-sensitive targets and performance indicators* proposed by Pegram and Colon (2020).
- f. **Strive for high-quality service provision and workforce development.** High-quality service provision necessitates a multisectoral approach, integrating and coordinating health, education, child protection and other social services to provide more holistic support (WHO, 2019). Health facilities themselves should also be guided by principles and protocols that support high-quality service provision, prioritising safe water, sanitation, hygiene, and healthcare waste management. Underpinning high-quality services is a skilled workforce. Health care workers require the skills,

knowledge, and expertise to advise and support caregivers on components of nurturing care and ECD. This is particularly important when considering issues arising from CC&ED, such as displacement, caregiver stress, and increased incidence of familial abuse. A skilled workforce has been shown, for example, to increase utilisation of services and improvement of caregiving practices in the home (WHO, 2019). Investment in the service delivery workforce may include, for instance, incorporating environmental health education into health professional and educator training to ensure they have a comprehensive understanding of the impact of CC&ED on young children within different developmental windows and in ways that are relevant to the communities in which they work.

- g. Understand and respond to the needs of young children. Young children's voices and the voices of their caregivers should be treated with respect and integrated into evaluations and adjustments (e.g., re-design or new implementation) to service provision. Keeping the child at the centre of discussions ensures we can genuinely decrease vulnerabilities of the child and retain the child's rightful place as a person who can contribute to adaptation and mitigation efforts relating to CC&ED. Authentic engagement with children and their caregivers should be considered at multiple levels – national, regional, sub-regional –with gender sensitivity in mind. Programs such as [Urban95](#), where the government brought new life to the city of Udaipur for its children, show how addressing the specific concerns of children and their carers can make the city more responsive to the needs of children in the face of CC&ED (section 6.3.4).

Summary: There are many exceptional services throughout the Asia-Pacific region and beyond that support young children's rights and needs in relations to CC&ED, yet there is much work to be done in service design, implementation, and collaboration to ensure that all young children in the Asia-Pacific region are reached successfully. This includes increasing the accessibility, coverage, integration, and continuity of services across the whole region, and concerted efforts to understand the needs and perspectives of children within the contexts of their everyday lives and with respect for their different stages of development, particularly in the early years. It is also important that information and knowledge gets shared efficiently within and between services – locally, nationally, and regionally – to establish high-quality evidence-based practices.



12. Create policies that incorporate the distinctive needs, rights, and perspectives of young children

12.1 The policy context

“Governments and policies need to empower civil society to implement locally led, child-sensitive and gender-responsive actions on climate change, ensuring that the voices of the youngest children — as future custodians of our planet — are heard, both directly and indirectly, through their parents, caregivers, and communities and integrated in early learning programs and services.”

ARNEC, 2022

A recent IPCC report noted that,

“Most observed adaptation is fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and focused more on planning rather than implementation (high confidence).”

(IPCC, 2022b; p. 20)

By contrast, the findings of the IPCC report (2022a, 2022b) strongly endorse a more integrated, flexible, multi-sectorial, inclusive, and long-term planning and implementation approach for future adaptation actions. Indeed, awareness of the importance of inclusion of child-sensitive climate policies was successfully raised during the COP26, which puts in place guidance to improve the inclusion of children in NDCs, policies, and National Adaptation Plans for all countries by the COP27.

Given that there is broadly poor inclusion of young children within climate change policies and programs, it is necessary for governments and other stakeholders to initiate conversations and actions, at many levels, to address this shortcoming. To ensure that such efforts have their intended effects, initiatives designed to better integrate ECD with climate actions and environmental protection should initially privilege perspectives and learnings from locally led and community-based adaptation programs, with a focus on decentralised funding models that

can respond to local contexts and concerns (see Chapter 5, above, for illustrations of localised and contextually sensitive policy and program initiatives).

While transparency concerning the extent to which climate change policies and programs are child-sensitive is necessary, and an expansion of the scope of such policies and programs is desperately needed (Pegram & Colon, 2020), it is also important to **ensure that national governments deliver on their current commitments made within the NDCs**; particularly those that outline localised climate change action, targets, and policies.

Regarding the NDCs and other existing climate related policies and programs, there is a need for an increased specificity in language around children. There should be a stronger focus on meaningful differences amongst age groups rather than the unspecific use of the term *children*. Pressure to adopt more precise terminology based on developmental stages will force consideration of the need for differentiated responses (i.e., conception to 8 years; ARNEC, 2021b).

Below, areas for policy consideration and development that have been identified through the scoping process are provided. These examples are not exhaustive, and it is also important to recognise that the child-centred approach discussed in Chapter 10 and the recommended actions in Chapter 11 can also form a basis for understanding where policy and program development is needed, and how to integrate children's nurturing care needs and perspectives within such processes. Readers are also directed to other work incorporating ECD into climate actions and environmental protection (e.g., ARNEC, 2021b; UNICEF, 2021c) and the high-level overview of policy innovation in the Asia Pacific region presented in Section 5.5.

Finally, it is important to emphasise that countries who are developing or updating national action plans to become more climate sensitive should be encouraged to actively integrate climate adaptation and resilience measures for children between birth and 8 years of age.

12.2 Policy considerations

RIGOROUS DISAGGREGATION OF CHILDHOOD BASED ON MEANINGFUL DEVELOPMENTAL TRANSITIONS AND OTHER IMPORTANT CHILD CHARACTERISTICS

To ensure that global and national climate-sensitive policies, national adaptations plans, and disaster risk management plans are well positioned and designed to address the direct and indirect climate and environmental impacts on young children, it is essential that there is attention given to the rigorous disaggregation of *childhood* based on meaningful periods of developmental transition (see sections 3.3 to 3.6) and other important child characteristics and vulnerabilities (see section 10.1), with a particular emphasis on the first 1000 days and the broader early childhood period.

Regarding meaningful periods of developmental transition, the periods of conception and pregnancy, birth to 2 years of age (infancy and toddlerhood), 3 to 5 years of age (preschool), and 6 to 8 years of age (early primary school) are broadly meaningful in most contexts but can of course be adapted to different cultural and jurisdictional settings. Rigorous consideration of these periods implies analysis of how CC&ED affect young children differently in these periods, and how policy and programs designed to integrate ECD into climate actions and environmental protection need to be designed so that they can meet children's needs in differentiated ways.

Regarding other important child characteristics and vulnerabilities, climate policies and programs need to be more sensitive to child characteristics that have consequential implications for their opportunities and welfare (e.g., gender, presence of disability) and areas of disproportionate vulnerability resulting from developmental stage. For example, children with immature immune, respiratory, and central nervous systems are highly sensitive to environmental pollutants and climate events, and young children have particular pathways of exposure and behaviours that make them more vulnerable to exposure to environmental toxins compared to adults.

In sum, environmental and climate change policies must recognize the special vulnerabilities of young children, the periods of ECD, pathways of exposure and the dependency upon adults.

A FOCUS ON YOUNG CHILDREN'S VOICE

There are initiatives and approaches that can encourage decision makers to listen to children's voices, thereby empowering them to be active participants in managing CC&ED. This can include ongoing education programs and workshops, as well as providing forums for children to be involved in discussing environmental and social issues. By including children at all levels, their specific needs will be given appropriate consideration and can then be included in future policy development. Young children can also be involved in child-sensitive data generation and modelling, providing their unique perspective to analysis and implementation.

Policy development must recognise young children as both individuals with rights and as agents of change within a community. The idea of children being impacted, vulnerable and powerless should be repositioned so that we see them instead as capable individuals with a wide variety of needs, specific vulnerabilities, but also the ability to engage in adaptation and mitigation approaches when given appropriate support and opportunity. As a key part of this repositioning, the voices of children and their families must be central in future policy planning and development.

Children's voices need to be given multiple opportunities to be heard. For younger children, information on their experiences, environments and caregivers can provide a compelling portrait of their lives. However, practices that encourage child participation in responding to CC&ED can build agency and, in turn, empower children to participate in the future solutions and adaptations that their societies will need to make in response to CC&ED.

To ensure sufficient consideration of young children and their needs, we recommend a **bottom-up approach** (Section 10.2) to establish ongoing feedback cycles on the conditions of children's lives and child engagement programs that create opportunities for advocacy and empowerment

through, for example, child-led community projects and programs, the outcomes of which are fed directly back to community leaders and policymakers.

Initiatives that amplify the voices of young children (up to government) should be trialled and supported. Through such initiatives, children can be actively included in education programming, the development of policy, and the review and reimplementation of programs. In tandem with the recommended education programming (see below), this approach will ensure the provision of an active and engaged community of children who are also able to *speak up* in times of crisis.

A clear strategy to capture and communicate the views, voices and perspectives of young children (and their caregivers) also requires an **accountability mechanism** to ensure that such information is used appropriately. Structured follow through, transparency, and accountability with fixed commitments to children including young children are essential. This includes reporting back to children and their families on the outcomes of any changes made that directly impact their experiences of the impacts of CC&ED (e.g., through education structures and products, magazines or publications, and online resources with child-appropriate summaries or language when producing accountability reports).

Engaging young children and their families implies a multi-phase process. Priority should be given to establishing spaces for parent and child consultation and engagement through existing platforms in communities and education programs. Preliminary phases can involve training of teachers and community leaders in consultation delivery and development of a program of work (including setting clear expectations, outputs, and shared commitment to timelines). Subsequent phases can involve consultation with young children in the community about their current levels of understanding around the impacts of CC&ED in their own lives and the lives of their families, to establish a baseline for child participation and engagement.

THE NEED FOR EVIDENCE-BASED POLICY DEVELOPMENT TO INTEGRATE ECD WITH CLIMATE ACTIONS AND ENVIRONMENTAL PROTECTION

To support and inform future child-centred policy development and prevent harms to the youngest members of our communities, it is necessary to evaluate existing data and its sources, and to reconsider how data is collected and used to understand the impacts of CC&ED. While young children are disproportionately affected by CC&ED, they are often not explicitly included in policy design. Not having good sources of data concerning young children allows us to ignore their needs or to inadequately consider these needs in policy development. As such, harm is actively being caused to those who need the most protection.

Monitoring and surveillance systems that already exist, for example through children's health programs, can be utilised and expanded to evaluate young children's access to nurturing care on an ongoing basis and establish foundational data sets for consideration and comparison with data collected in times of crisis. Collecting such information in real-time (through service delivery) can provide an up-to-date picture of the health of children, their access to age-appropriate education programming, and their nurturing care needs.

In tandem with tools for measuring the impact of specific events on children's nurturing care needs and development (see ARNEC 2022, p 95), policymakers will be better equipped to evaluate the level of harm caused (or prevented) by considering the duration and intensity of events vis-à-vis the nurturing care needs of the child (see Section 10.1 for a proposed tool to monitor such outcomes).

To be most effective, data must be disaggregated to yield insights about (1) the needs of young children in different development periods (i.e., conception and pregnancy, birth to 3 years, 3-5 years, and 5-8 years) and important moderating factors (e.g., gender, poverty, etc.) considered distinctly, and (2) specific adaptation and mitigation gaps that prevent access to different facets of nurturing care (e.g., loss of areas for play, poor access to ECE).

Furthermore, evidence needs to be collected in ways that are sensitive to the special vulnerabilities of very young children due to their developing immune, respiratory, and central nervous systems. Children in their first 1000 days are in a period of rapid neurological growth and development;

delays in addressing the needs of very young children impacted by CC&ED can lead to lifelong impacts on their overall health and quality of life². Without awareness of these harms, which are often not immediately visible or manifest in children's behaviour, there will continue to be insufficient attention to adequate protections and responses for young children.

Obtaining high-quality and focused data allows more effective investment in the quality of life of today's children and provides a more comprehensive understanding the impacts of CC&ED. In turn, better ECD outcomes for children help to build more resilient and engaged communities.

Generating suitable evidence and data to inform policy and program development can be linked to ongoing capacity building of universal service providers – health workers, family service providers and early childhood educators – in the components of the Nurturing Care Framework, in conjunction with information about the impacts of CC&ED on young children. A simple tool, such as valid [ECD checklist](#), can be provided to allow these service providers to collect base line and *just in time* data on children and their access to nurturing care with consideration of the impacts of CC&ED across a region. Such data can then be collated and reviewed to provide an accurate and up-to-date picture of the needs of young children in the face of the impacts of CC&ED across a country and these needs can be prioritised to ensure the most targeted and impactful use of limited funds.

YOUNG CHILDREN'S LEARNING AND EDUCATION ENVIRONMENTS

Child-centred interventions need to include ECE and the early primary school years, with recognition that early childhood pedagogy, practice, and curriculum, can all be on the forefront of enacting change and preparing children for their futures. To do so, the ECE and primary education sectors can be actively involved in the inclusion of sustainable practices within learning environments and the creation of mechanisms to encourage and support children's participation and agency (see Section 11.3). Further, learning within pre-service education and professional development can prepare educators and teachers to better understand the links between CC&ED and ECD (see Davis, 2007, for example), as well as approaches that empower children to understand their rights and citizenship.

Education programs and interventions, including ECE and school provision, are an opportunity to support the **bottom-up** approach to child-centred participation (see Section 10.2), through the application of targeted **top-down strategies** (see Section 10.1) working to create resilient, climate-educated populations who understand and expect to participate in climate actions and environmental protection, as well as influencing programs and policies.

Child-centred climate and environmental initiatives and curriculum content can work to maximise resilience by empowering children to participate in initiatives and programs through their education system and wider communities. Children's engagement should give them *knowledge* and foster *participation* through meaningful activities. Children in the early years of school can be provided with developmentally appropriate, accurate information and encouraged to be hopeful about adaptation and mitigation. In this way they can develop a *sense of agency and empowerment* to meet the challenges of CC&ED facing their lives.

Funding can be directed to ensure that education is consistent and ongoing in two ways:

Structural funding. This includes ensuring that funds are made available for the targeted development and ongoing implementation of structural tools and curriculum programming targeting children from their very first years of preschool education. Focus should be placed on building an understanding of CC&ED and the impacts on their community as well as the development of social-emotional and psychological resiliency skills. Structural funding also includes provision for the development of safe and secure physical education environments for all children no matter their age or gender.

Opportunistic funding. Funding should also be provided to maximise opportunities for continuity of learning in times of crisis and disruption because of CC&ED. Building on the

² Moore, T.G., Arefadib, N., Deery, A., & West, S. (2017). The First Thousand Days: An Evidence Paper. Parkville, Victoria; Centre for Community Child Health, Murdoch Children's Research Institute.

structures already in place, opportunistic funding will allow for the rapid engagement of emergency education plans with provision for remote, in-person, online and offline education opportunities as well as tools for caregiver support. All children should have continued opportunities to access high-quality ECE resources and be prepared with the skills needed to access these resources. Continued engagement with ECE, even in times of crisis, is also an important mechanism of child protection.

Two priority focus areas are well suited to meet the needs described above. First, establishing a teacher education program such as the UN CC: Learn course and rolling this out to teachers (including early childhood educators) across jurisdictions. For education programming to support resiliency, educators themselves must first be informed and prepared about CC&ED and its direct impacts on their community. Second, revision of existing funding streams to ensure that both structural funding and opportunistic funding needs can be met. This may involve a reconsideration of the distribution of funding based on the data collected in recommendation one.

ATTENTION TO FUNDING MECHANISMS THAT DELIVER FOR YOUNG CHILDREN

Above, attention has specifically been given to funding mechanisms to better meet the needs of children within the contexts of their learning and education environments. More broadly, funding mechanisms and investments can be specifically highlighted in new policy development, with allocations for age groups defined in terms of developmental periods and targets for implementation. Focused financing and investment can also be designed to privilege high-quality, integrated ECD programs that have mechanisms for reporting, data gathering, and evaluation. At COP27 in Egypt, the need for funding for loss and damage was finally acknowledged by richer nations. This is an example of identifying entry points in financing mechanisms and facilitates negotiations to identify existing sources of funding for ECD programs, and should be focused on in the lead up to COP28 in 2023.

Increased investment will be effective in combination with policy prioritisation of the nurturing care needs of young children (see Chapter 4), particularly good health and nutrition, early learning opportunities, responsive care, and security and protection. Furthermore, targeting the most vulnerable and marginalised groups of young children in lower- and middle-income countries – where inequalities have been exacerbated by the combined effects of the climate crisis, hazards and risks from environmental degradation and the COVID-19 pandemic – will reduce the harms being experienced by these groups.

CHILDREN'S ENVIRONMENTS AND PHYSICAL SPACES

Addressing physical spaces and infrastructure, such as creating suitable outdoor spaces for young children, accessible services, investing in green energy sources and ECE retrofitting, is a process that can directly impact children's environments and their understanding of the need for adaptation and mitigation.

Providing clean, *green spaces* for children through policy innovation and targeted investment, alongside friendly environmental planning (e.g., transport, etc.), directly promotes play, health, and wellbeing, and provides evidence to children and the community that measures can be taken to reduce the negative impacts of, for example, environmental degradation.

Furthermore, recognition of the vulnerabilities of young children (see Chapter 3 and Section 10.1), can be used to directly inform environmental and climate change policies for planning and development purposes. For example, active attention should be given to the positioning of polluting industries (e.g., away from schools, playgrounds, and residential areas).

13. Concluding remarks

As we move rapidly into a world affected by climate change and environmental degradation (CC&ED), and the need for adaptation to its increasingly serious and disruptive effects (IPCC, 2022a), there is growing recognition that young children will be the most profoundly affected (Thiery et al., 2021), but they are at the same time the least well represented in the policies and programs designed to respond to current impacts and plan for future consequences (ARNEC, 2022; CCC, 2015; Pegram & Colon, 2020). This Scoping Study is a response by ARNEC and its partners to this situation, designed to put early childhood development (ECD) at the heart of climate actions and environmental protection.

This Scoping Study moves progressively from a global to a regional and local perspective and, in doing so, develops a *child-centred approach* (CCC, 2015; see Chapter 10) to better integrate ECD with climate actions and environmental protection, while at the same time attempting to capture current areas of good practice, innovation and opportunity.

In conducting this scoping study, priority was given to the identification of and respect for the knowledge and expertise of those involved in CC&ED policy and program development, including those within disaster risk reduction (DRR), across jurisdictions globally but with emphasis on the Asia-Pacific region. The child-centred approach was elaborated from previous work pioneered by the Children in a Changing Climate (CCC) Coalition (2015) and was also informed by the nurturing care for early childhood development framework (NCF; WHO, UNICEF & World Bank Group, 2018). Connections were sought with the Sustainable Development Goals and other relevant frameworks (as appropriate; see Chapter 5) to situate analyses within existing, internationally recognised agreements, mechanisms, and approaches.

To raise awareness and progress a child-centred approach to climate actions and environmental protection, we conclude this report by focusing on *next steps* that follow from the four interrelated strategic action areas identified by ARNEC through the regional initiative (2022). These focus areas are identified below and linked to themes and insights that have emerged in the preceding chapters.

Building and sharing knowledge through future research

- a. Both within and between jurisdictions there is a need to **improve data collection** on the impacts of CC&ED on children within the early childhood period in ways that can be disaggregated and provide differentiated insights on the nurturing care needs of children within developmental stages, i.e., infancy (birth to 12 months) and toddlerhood (1 to 2 years), preschool (3-5 years), etc.
- b. The research community and lead government agencies should be encouraged complete predictive analysis to inform **forecast-based action to reduce climatic shock impacts on young children**, and to increase the preparedness of the children, communities, and relevant services to respond to CC&ED impacts.
- c. National and local **roadmaps for climate sensitive ECD programming** should be developed by government to increase preparedness and reduce short-term, reactive responding to issues as they arise. A roadmap can integrate data (above) that accurately reflects the current conditions of young children with foreseeable

CC&ED impacts and longer-term scenarios. Such roadmaps can endeavour to identify specific actions to increase resilience and flexibility in responding to the challenges posed by CC&ED.

- d. A focus on consistent **CC&ED informed educational curriculum and associated practices** can help to build consensus across the wider region but also within countries. Initial steps can include a survey of current approaches already integrating CC&ED with ECE and school curriculum, and innovative practices to engage young children and develop their knowledge and understanding of the challenges facing their communities.
- e. It is important to support existing mechanisms for **information sharing** (including data) and to continue to develop approaches that promote **knowledge transfer**. For example, the recommendations presented in Chapter 11 can be mapped to existing initiatives, policies, programs, and practices to increase visibility and understanding of the diverse ways in which jurisdictions, regions and communities are responding to the challenges presented by CC&ED. Furthermore, in the educational domain, practices and curricula from different settings and contexts can be shared and compared to drive change in the ways that children are engaged in formal education settings to support their participation and agency (see section 10.2, above).

Increasing awareness through targeted communication and strategic work with governments

- f. **Information dissemination** can be facilitated to increase awareness of entry points for interventions, and to clarify possible courses of action.
- g. The importance of ECD can be communicated through a variety of channels to **ensure that national climate and adaptation plans provide the needed financing for high-quality, equitable and sustainable ECD programs** that address the nurturing care needs of young children.
- h. Measures can be taken to ensure that ECD is a sector that is recognized in climate change policies as one that is, arguably, most affected by climate change. Furthermore, **young children can be presented as stakeholders** in the design of policy and programs going forward.
- i. The clear benefits of reducing the risks experienced by young children and increasing their resilience needs to be demonstrated to governments. This involves stressing the **comparatively low upfront costs of risk reduction**, and the **positive economic impacts** of economies of scale that follow from investment in children's education and preparedness for CC&ED³.

³ For example, see <https://resourcecentre.savethechildren.net/document/child-centred-adaptation-realising-childrens-rights-changing-climate/>

Building capacity of ECD stakeholders through the development of resources and training, and the provision of targeted funding

- j. **Knowledge sharing and advocacy efforts should be increased** particularly in relation to tangible aspects of environmental degradation that can be linked to direct actions, such as air pollution. In this way, children and their communities can develop ways of participating in the responses to CC&ED.
- k. Community leaders and schools, for example, can be resourced and enabled to lead **local initiatives** targeting various domains of environmental degradation or local sustainability in ways that include young children.
- l. The **inclusion of ECD in global climate forums** can be scaled-up. This can include more targeted messaging on investing in ECD and efforts to improve policy implementation in relation to local environmental degradation issues. Such process can include various stakeholders and involve child voice.
- m. Creating partnerships to share resources and tackle CC&ED issues in more integrated ways can promote and **support cross-sectoral initiatives** and expand the knowledge and capacities of stakeholders.
- n. By **targeting funding to community initiatives** based on differentiating the needs of young children, communities and service providers can review how local programs and initiatives can best serve young children's ECD needs. Local initiative of this kind can be supported with high quality resources to facilitate education and capacity building.

Strengthening partnerships across sectors – beyond ECD – through advocacy and impactful relationships

- o. **Stronger coalitions can be built between climate organizations and the ECD sector** to communicate ECD as a key element of climate change resilience and adaptation plans, as well as communicating this at a broader global level at conferences and meetings.
- p. Multiple sectors can work together to **ensure that young children are visible** in climate change dialogues
- q. **Funding mechanisms** can be tied to collaborative and sustainable local initiatives to ensure that stakeholders work effectively together.
- r. Government agencies and departments can take a leading role in integrating key aspects of CC&ED planning, health, education, and family services so that the ECD needs of young children and their caregivers are more effectively addressed and expectations shift to **enhance holistic models of ECD**.



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Appendices

Appendix A. Early Start Team Information

Professor Marc de Rosnay DPhil

Marc is the Professor of Child Development and Academic Director at Early Start, University of Wollongong, where he leads inter-disciplinary early childhood initiatives involving the University and community, with the goal of improving developmental, educational, and social opportunities for young children. With his colleagues at Early Start, Marc works to translate current evidence on child development and early learning into the everyday care of children and professional practices. He also currently serves as the NSW representative on the Board of the Australian Children's Education & Care Quality Authority (ACECQA).

Associate Professor Cathrine Neilsen-Hewett PhD

Cathrine is the Academic Director of the Early Years at the University of Wollongong. Cathrine's early childhood professional roles have included academic director, local and state government adviser, lecturer and researcher. Cathrine is a member of the Early Childhood Development council and is an honored expert of early childhood pedagogy and practices, childhood socialization and staff training. Cathrine leads in the development, implementation and evaluation of evidence-based child development programs and Professional Development services.

Senior Professor Anthony Okely EdD (Physical & Health Education)

Anthony is currently leading an international surveillance study of 24-hour movement behaviours in the early years (called SUNRISE) which involves 42 countries, two-thirds of which are either low- or middle-income according to the UN Human Development Index. Anthony has worked extensively with the World Health Organisation and government authorities to develop guidelines, standards, and resources for children and families.

Professor Lisa Kervin PhD

Lisa is the Director of Early Start Research at the University of Wollongong. Professor Lisa Kervin is a researcher in Language and Literacy. Prof Kervin's main research interests include: (1) children's literacy practices, (2) how children use technology and understand Digital Literacies and (3) how teachers may be supported in using technology in classroom literacy experiences.

Dr Ellie Taylor PhD

Ellie is a Translation and Sustainability Coordinator at Early Start at the University of Wollongong. For the last 10 years, Ellie has been an active researcher on numerous projects that support child development and mental health. Ellie has worked with the World Health Organization to develop Global Standards for healthy eating and movement behaviours in early childhood education and care settings. Ellie's current research focuses on parent mental health and children's movement behaviours during times of stress.

Dr Karel Strooband PhD

Karel is a Project Officer at Early Start at the University of Wollongong. For the last 6 years, Karel has been an active researcher on numerous projects that support child development, while at the

same time facilitating child development programs as a Health Promotion Officer. Prior to his research roles, he worked as a physical education teacher in various countries with the focus on children with additional needs. Karel has particular interest in supporting health and wellbeing of children who need it the most (e.g., children from low socio-economic backgrounds, children with a disability).

Lisa Kilgariff Master of Research & Master of Children's Literature

Lisa is a PhD candidate and Research Assistant with Early Start at the University of Wollongong. Over the last 6 years, Lisa has worked as a Learning and Development project manager for several large education institutions while completing research on children's literacy education design. Prior to moving into research and management, Lisa worked as a secondary English, Social Studies and Art teacher, supporting children with additional needs with digital tools and interactive learning strategies. Lisa's PhD research explores the use of digital tools and creativity in literacy learning.

Appendix B. Examples of climate change and environment degradation

Examples of climate change and environmental degradation

Issue	Impact
Wildfires	Air pollution
Drought	Exposure to environmental toxins (e.g., mercury, lead)
Heatwaves	Lack of clean, green protective spaces (urbanisation)
Increased global temperatures	Rising sea levels pose threats to low-lying islands and coastal cities
Floods	Lower water quality, contamination of food resources, reduced crops
Tropical cyclones	Damage to habitats, landforms, homes
Ocean acidification	Alter marine food chains and food supply
Desertification and land degradation	Loss of vegetation cover and therefore food for livestock and humans

Appendix C. Sustainable Development Goals – Children’s wellbeing and environmental health key targets

Key SDG targets relevant to children’s wellbeing, health, and development within the 2030 agenda

- **SDG 1.2** - reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
- **SDG 1.3** - Implement nationally appropriate social protection systems and measures for all, including floors, and achieve substantial coverage of the poor and the vulnerable
- **SDG 2.2** - end all forms of malnutrition, including achieving the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons
- **SDG 3.2** - end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1 000 live births and under-5 mortality to at least as low as 25 per 1 000 live births.
- **SDG 4.1** - ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant effective learning outcomes
- **SDG 4.2** - ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education
- **SDG 4.5** - eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations.
- **SDG 4.a** - Build and upgrade education facilities that are child, disability, and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
- **SDG 16.2** - end abuse, exploitation, trafficking, and all forms of violence against and torture of children.

Key SDG targets relevant to climate change and environmental health within the 2030 agenda

- **SDG 1.5** - build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters
- **SDG 2.4** - ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- **SDG 3.9** - substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- **SDG 6.3** - improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

- **SDG 6.6** - protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes
- **SDG 11.6** - reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- **SDG 11.7** - provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- **SDG 11.b** - substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
- **SDG 12.4** - achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
- **SDG 13.1** - Strengthen resilience and adaptive capacity to climate-related hazards and disasters in all countries
- **SDG 13.2** - Integrate climate change measures into national policies, strategies, and planning
- **SDG 13.3** - Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- **SDG 13.a** - Implement the commitment undertaken by developed country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
- **SDG 13.b** - Promote mechanisms for raising capacity for effective climate change related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

Appendix D. Sub-regional analysis methodology

QUESTIONNAIRE METHODS

ANREC invited INS members across the Asia-Pacific region to complete a questionnaire to understand the impact of CC&ED on young children's wellbeing and development and how the region is addressing these crises. Participants were recruited via email contact (ARNEC). The questionnaire was completed by 72 members. Table 5 below presents demographic information on the participants.

Table 5. Distribution of questionnaire participants

Participants	72
Gender	
1. Male	22 (31%)
2. Female	50 (69%)
Sub region	
1. South East Asia	33
2. South Asia	26
3. Oceania and Pacific	9
4. East Asia	4
Country	
1. Philippines	10
2. Bangladesh	7
3. Nepal	5
4. Vietnam	5
5. Pakistan	4
6. Other	4 ¹
Organisation	
1. Save the Children	20
2. UNICEF	20
3. ChildFund	4
4. Plan International	3
5. ARNEC	2
6. Other	23
Role	
1. I/NGO	32
2. UN agency	22
3. ECD service provider	7
4. Government Staff	4
5. Other	7

FOCUS GROUP DISCUSSIONS (FGDS) AND INTERVIEW METHODS

Focus discussions groups (FGDs) and interviews were a key feature in the analysis and scoping of how CC&ED affect different sub-regions within the Asia-Pacific. Representatives from key government bodies and organisations with early childhood and/or climate change expertise were invited to participate in sub-regional FGDs or interviews, depending on their availability. They were selected in consultation with the ARNEC secretariat, and on the basis of their responses to the questionnaire. This was an opportunity to share and discuss insights, key learnings, opportunities, and challenges.

The overarching aim of the discussions was to determine challenges, opportunities, and recommendations regarding the impact of CC&ED on ECD. Discussions were semi-structured and invited attendees to speak on topics that were derived from analysis of the aforementioned questionnaire.

The research questions that framed the discussion sessions were:

- What are the impacts of CC&ED on ECD within each region?
- What barriers or challenges are there to mitigating the impacts of CC&ED on ECD (particularly for children from birth to 3 years of age)?
- What opportunities exist within each sub-region (existing or in development) to implement climate sensitive ECCD programs and strengthen climate resilience through ECCD?
- What recommendations can be made to ensure that future policy and program development target the impacts of CC&ED on ECD?

There were five focus groups, covering all sub-regions within the Asia-Pacific, with representatives from various organisations relating to both CC&ED and ECD. Two focus groups were held for the South-East Asia region due to conflicting schedule times. Each focus group went for approximately 1-hour and was facilitated by a member of the research team. Each focus group included at least three participants, with most including four to five participants. Focus groups were audio recorded and transcribed verbatim. Qualitative analysis was conducted systematically using Braun and Clarke's (2006, 2012) guidelines for thematic analysis. Three researchers engaged in a process of familiarisation with the data by listening to audio recordings, multiple readings of transcripts, generating initial codes, searching for emerging themes and reviewing, defining, and naming these through researcher discussion of the focus group dataset. Data were coded inductively as codes emerged from the data. Deductive coding was then applied as these themes were examined according to the overarching aims of the focus groups, and how responses related to the impact of CC&ED on ECD in each sub-region to build trustworthiness of analysis. This process enabled each theme to be identified and described to create a final set of higher-order themes and sub-themes which are presented and discussed in Chapter 8 of this report.

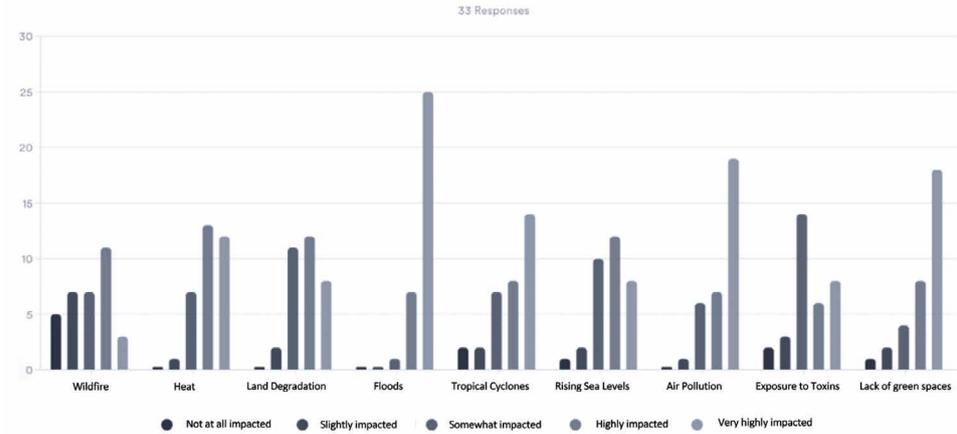
SUB-REGIONAL CONFERENCE SESSIONS

From 5-8 July 2022, ARNEC hosted the 2022 Asia-Pacific Regional Conference on Early Childhood Development (virtual edition). University of Wollongong representatives walked participants through the impacts of climate change in the Asia-Pacific region using the Nurturing Care Framework as an analytical lens for ARNEC's scoping study. The findings of the UOW scoping study were used to trigger breakout discussions at the sub-regional level on the nexus between ECD and climate change in Southeast and East Asia; South Asia; and The Pacific, Australia, and New Zealand. Participants included CC and ECD experts across the Asia-Pacific region.

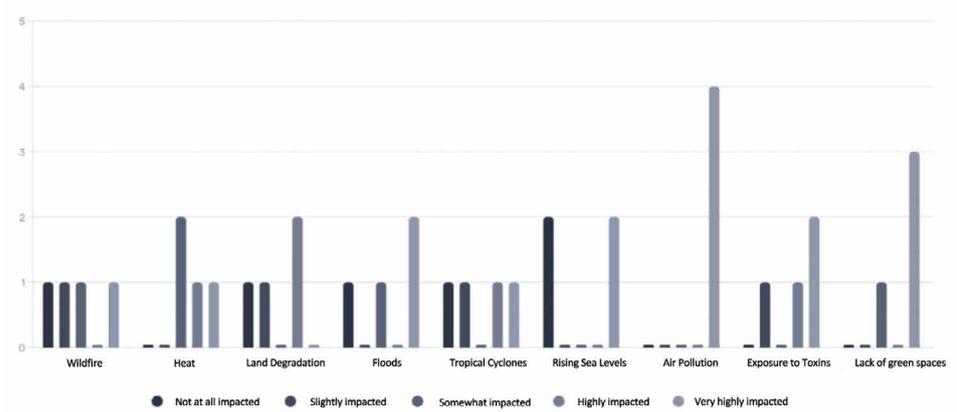
Appendix E. Sub-regional Analysis Graphs

The following four graphs show the number of participants (Y-axis) in each impact category (not at all impacted to very highly impacted) for the different CC&ED impacts.

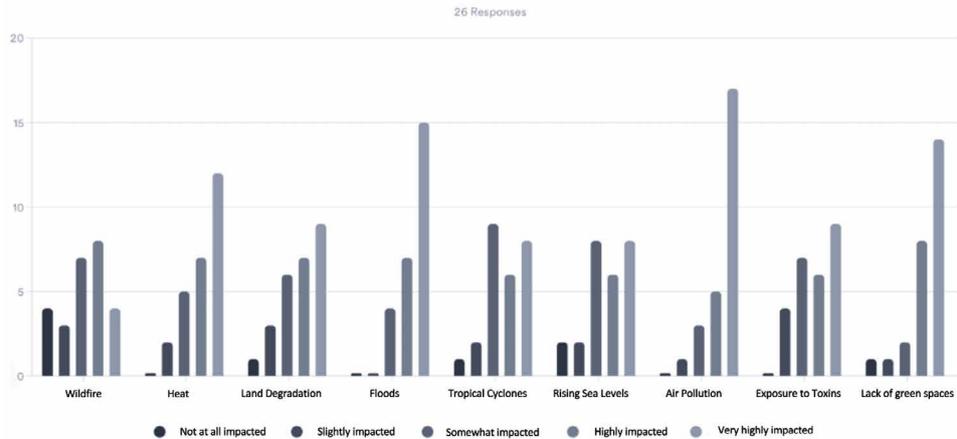
South-East Asia



East Asia

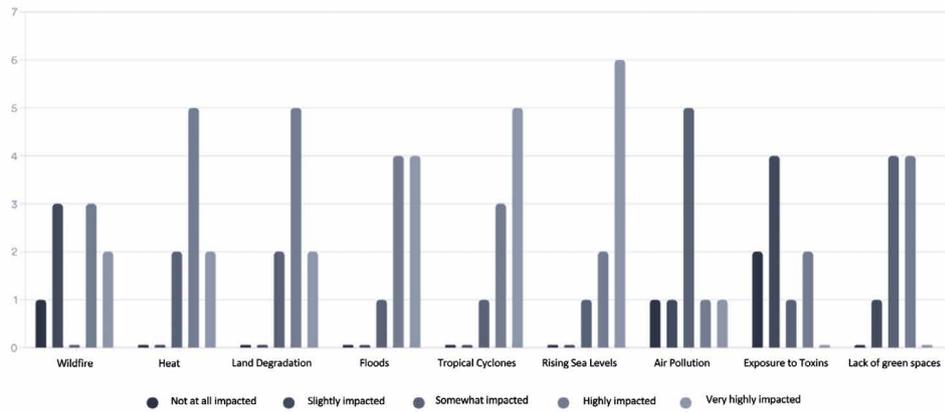


South Asia



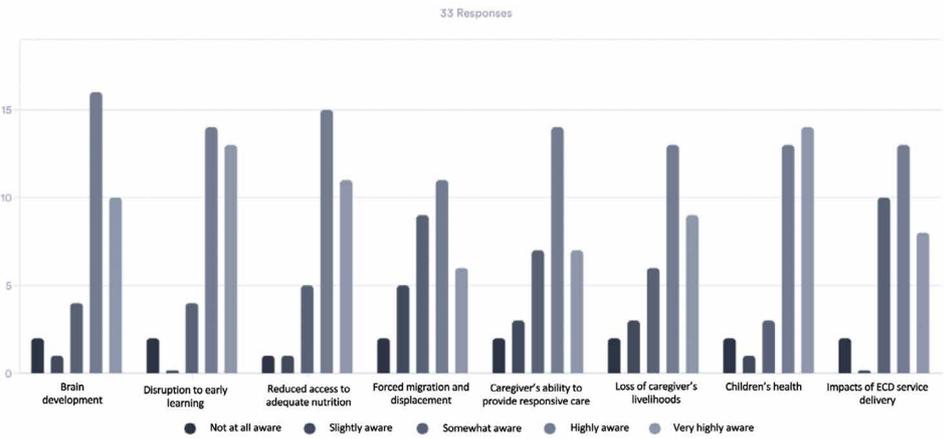
MOST VULNERABLE TO MOST VALUABLE

Oceania and Pacific

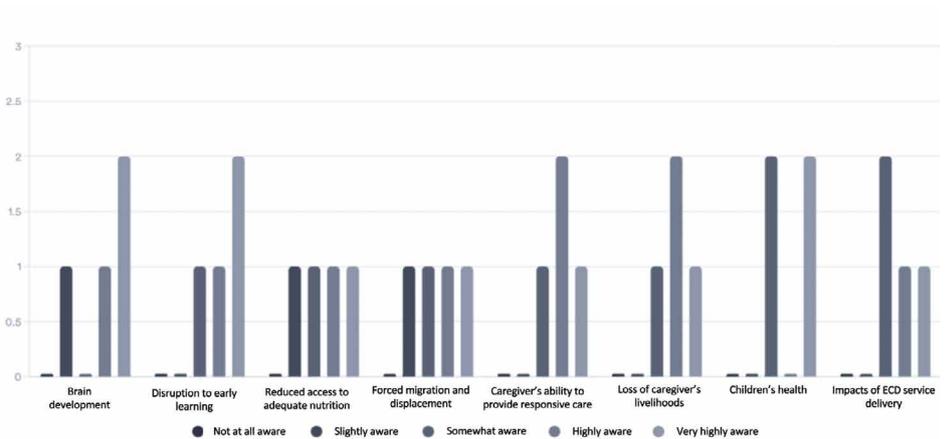


The following four graphs show the number of participants (Y-axis) in each awareness category (not at all aware to very highly aware) for the different child impacts

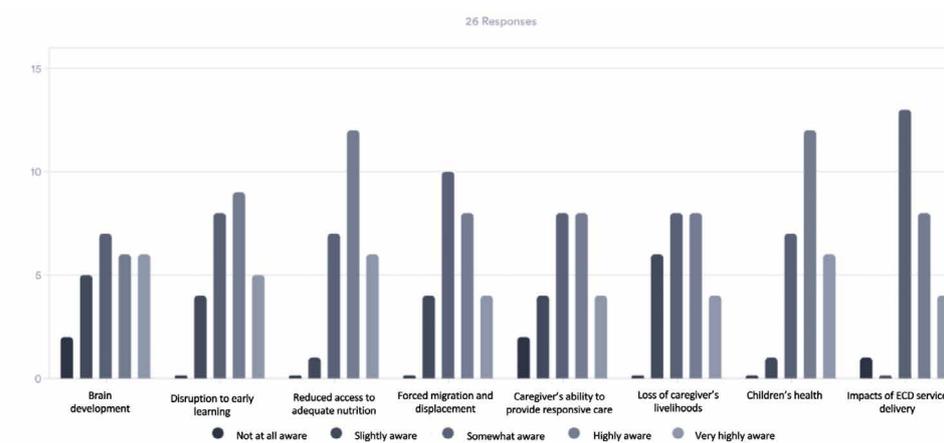
South-East Asia



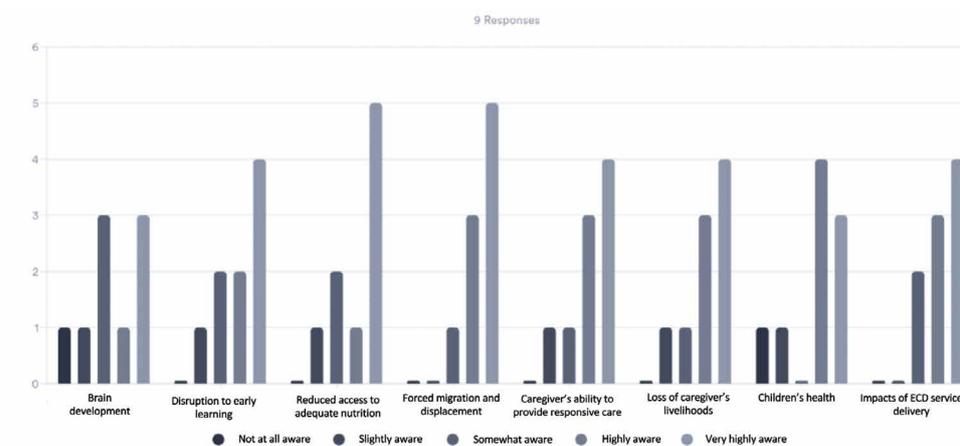
East Asia



South Asia



Oceania and Pacific



Appendix F. Focus Group Themes

CONTEXT FOR THE RESPONSE

Participants' responses were shaped by their understanding of the existing impact of CC&ED on ECD across the Asia-Pacific region. Across the focus groups, participants described wide ranging experiences and unique perspectives, maximising a holistic approach to the issue. As we move through the analysis, we will be considering both areas of shared concern and issues that are sub-region specific.

Shared concerns

There exists a breadth and diversity of CC&ED issues, which impact children and families in a multitude of ways. Focus group participants were asked to consider various CC&ED issues (e.g., flooding, air pollution, lack of green spaces) and their impact on children and families within their sub-region. Here, we describe issues that were shared across all or most sub-regions.

Air pollution was seen as a very important issue across all sub-regions. It was noted that due to the visibility as well as the ease of measurement of air pollutants, funding is generally made available for mitigation, and policy is under development or already in place. However, the scoping study found that this is not true everywhere, and in some places where policies are in place, they are not implemented (e.g., ...). There was also observation that as air pollution is something that is ongoing, it is perceived to be permanent.

Heat was a pressing issue raised across focus groups, as several of the sub-regional groups were experiencing significant disruption to education due to necessary school closures (including early childhood settings) during heat waves (e.g., in Malaysia, India, and many countries in South Asia). Consideration was given to the idea that heat may be considered to be a 'natural' event, and not always connected to the impacts of CC&ED in government policy or education. This has implications for prioritisation – i.e., it may not be prioritised as readily as other events seen to be more 'serious.'

Similarly, focus group data across the sub-regions revealed concerns regarding the lack of focus on young children, birth to 3 years, in existing policies and programs. Participants reflected on the need to integrate parent voices to represent the youngest children in policy discussions. It was also noted that educator training and government funding were critical to ensuring representation of children birth to 3 years in existing policies and programs.

Region specific concerns

While there were many shared concerns/problems across the region, various sub-regional representatives noted region-specific concerns. Here, we draw attention to the need for individualisation in certain aspects of policies and programs targeting ECD and CC/ED, with reference to several key examples.

Increased family migration and forced displacement due to heat and rising sea levels was reported as a particular concern in South Asia where it was observed that disaster planning is now including a focus on the impacts of heat. There was also a notable difference between rural and urban concerns. For example, a lack of green spaces was framed as a distinctly urban problem, experienced by people in cities with significant gray space (i.e., open spaces with hard, impermeable surfaces such as car parks) and built infrastructure. However, in rural areas including farmlands and housing and agriculture near water sources, increased transmission of airborne and vector borne diseases such as dengue, was a significant concern. Participants reflected on the potential for loss of productivity, as well as impact on health and in some cases, risk of death. Deforestation was also noted as having an increasing impact on city fringe and rural communities with urban sprawl. These issues impact those in urban areas to a lesser degree.

It is important to underscore that CC&ED events and issues can impact children and families in a multitude of ways and arise from a multitude of causes. In urban areas, air pollution often results from manufacturing and large-scale industrial processes. In rural areas, wildfires contribute to air pollution and impact crops and food supply. However, there is also the issue

of heating indoor spaces which was noted by participants as more prevalent in rural areas. For example, the use of coal indoors to warm homes and schools in addition to the use of coal in power stations is associated with a number of health and developmental issues among young children, as well as ongoing lung and breathing issues for adults.

Sub-region-specific concerns were raised, reflecting the need to carefully consider policy, planning, and infrastructure needs unique to each sub-region. This will ensure adaptation and mitigation efforts are aligned with identified needs and concerns of children, families, and educators. This includes a need for targeted education programming for both adults and children. For example, in the Philippines one of the challenges is the lack of information and education about climate change. Although people know that there is an effect of climate change, people in the community are unaware of how climate change impacts their day-to-day activities and how to make change. In response, targeted programs have been offered in community groups, such as those around schools or in local government, to address this knowledge gap. However, there exists a lack of focus on early childhood settings.

NEED FOR INTERSECTORAL COOPERATION IN ADDRESSING CC&ED

Participants noted a key challenge in addressing the impact of CC&ED on ECD is the complexity and breadth of the issue(s) at hand. CC&ED impacts all individuals within a country at all levels and the need for intersectoral cooperation in government, organisations, across sectors (CC&ED) and across the sub-regions emerged strongly throughout focus group discussions.

The impact of CC&ED is multifaceted. Young children and families experience a multitude of difficulties as a result of CC&ED. Yet, financing is often disparate and/or targeted to one particular area of need, while other areas of need may not be funded at all or very minimally. This may be due to the multisectoral nature of ECD. Focus group participants placed significant focus on the need to consider existing policies and programs and leveraging the knowledge in place across different sectors to create a common approach for the most vulnerable groups. This requires consideration at various levels including: government, organisations, and regions.

Government

Intersectoral cooperation within government is necessary to address the breadth and complexity of issues arising from CC&ED and their impact on ECD. Participants in several focus groups noted that government structure can become an impediment to comprehensive and systematic change, in relation to the impact of CC&ED on ECD. Within different government and ministry departments, focusing on specific elements of one shared problem, communication and planning can be disjointed and may not serve the best interests of young children and their families. For example, in China (East Asia), until recently, ECD was not integrated into the basic health system as it was seen as the responsibility of the government. With support from UNICEF and the government, ECD is now comprehensively implemented into China's health system, and children and families can now access government support, resources and services centrally within the public health framework.

Intersectoral cooperation also arose as a key consideration in discussing how to address the needs of children aged birth to 3 years versus the needs of children 3 years and older. In China, children who are not yet in school are overseen by the health agency, while children in school fall under the regulation and authority of the Ministry of Education. Participants agreed that, when creating ECD policy, both the education and health ministries must be involved to create a strong and comprehensive program. Often, other ministries are also involved such as the Ministry of Development who would oversee infrastructure improvements such as the Child Friendly Building Initiative.

Organisations

The risk of a siloed approach is not unique to government bodies. This is also a key consideration within and across key organisations and institutions – which serve to address CC&ED and/or ECD needs. Here, too, focus group participants noted that there is often a lack of collaboration between different departments, even when working in the same country. Each department is very specialised and where their role ends, another departments' role begins. However, there may

not necessarily be shared planning between those departments. For example, one department may look at long-term climate change while another is focused on emergency response. A need for shared training, collaboration, and redevelopment of the approach was identified, with overlapping areas of responsibility becoming an opportunity for a more holistic support structure in the future. Any changes should be made with an aim to include children across all age groups and ensure that the youngest children are prioritised.

Across a Region

Regional cooperation is also important. The effects of CC&ED don't stop at a country border. By looking at both problems and solutions with a regional lens and together working to make change and share resources and initiatives, participants noted that change could be more impactful.

Some organisations are already working to address this need. UNICEF Pacific has worked across 12 island nations with many shared impacts of CC&ED. UNICEF Pacific can create models of practice that can be rolled out in different countries when required. Rather than each country investing significant time developing an individual plan, resources can instead be invested in funding the response, whether financially or by providing human capital to support the effort. For example, the validated model of ECD support through targeted curriculum programming in evacuation centres in Fiji can be translated to other nations quickly when the need arises.

HOLISTIC APPROACH

Building on the need for intersectoral cooperation, is the need for mitigation efforts and educational programming to be considered and implemented holistically by educators and ministries of education and health. This includes planning for both immediate, acute events (e.g., major flooding), as well as ongoing, chronic impacts (e.g., air pollution) of CC&ED on ECD.

Lack of evidence base specific to child needs

While focus group participants agreed that a holistic approach is required to support ECD in the face of CC&ED, several participants commented on the lack of evidence base specific to young children and their needs. The structural nature of government requires that reliable, valid and clear data be available to support decision making and policy planning. As the direct impact of CC&ED on children, particularly those between the ages of birth and 3 years old, is not yet widely documented or considered within a country context, key data is missing to support mitigation and adaptation efforts. Children are often grouped with vulnerable populations as part of general climate policy and mitigation efforts, but their unique needs are not considered, nor highlighted. This feedback reflects the wider findings of the scoping study and previous studies (see UNICEF, 2021c).

Specific need for age disaggregated data

Similarly, participants identified the need for age disaggregated data in ensuring a holistic approach that accounts for individual differences when considering the impact of CC&ED on ECD. Existing data on children does not differentiate between age groups or developmental stages, typically lumping all children/youth under birth to 18 years. This type of generalisation inhibits adequate adaptation and mitigation efforts for young children, as it fails to recognise the various nuances – and resulting needs – well-documented across different developmental stages. This is particularly pertinent for children aged birth to 3 years, as they have distinct needs relative to older children (e.g., heightened needs in terms of nutrition and responsive caregiving; significant gains in language and skill development).

This need for age disaggregated data was referred to across all focus groups sessions. Participants asserted that disaggregated data would allow policy makers to clearly identify the needs of children across different developmental stages. They noted this is particularly important for young children, given that many are not receiving formal schooling or education and thus, not exposed to yearly measured targets. Such targets would allow for inferences to be made about the impact of CC&ED on their performance and development. However, because very young children are not yet part of this formal structure, data on children under age 3 or age 5 (location

dependent) is difficult to collect consistently. Data is collected by health practitioners in many instances, but the provision of disaggregated data remains a challenge.

Additional support, prioritisation and funding

Various focus group participants described their concern that the impact of CC&ED on ECD is not being prioritised to an extent conducive to the enormity and severity of the issue at hand. They noted that funding was a necessity if the issue is to be prioritised appropriately. Naturally, governments, governing bodies, and other organisations have various priorities, many of which may be deemed more pressing than the impacts of CC&ED on ECD. While often there is recognised need for action, as discussed above, there is not always data to support additional funding to implement said action. Participants noted that specific financing to address the impact of CC&ED on children is limited or unavailable in their region. Further, accessing government funding can be difficult as funding tends to be highly targeted towards areas of specific need or particular project activities. This indicates a need for an ECD fundraising shift to be adapted to current funding trends. Nevertheless, the lack of funding and prioritisation was identified as a significant challenge in supporting young children as they face the impact of CC&ED.

A national approach to policy development

While many of the programs discussed in the focus groups and throughout this scoping study have brought about changes for a particular area or community, many organisational representatives emphasised the need for large scale, region-wide, nationwide, systemic change at a government and policy level. Without drivers at a national and regional level, it is difficult for the many smaller programs to make a meaningful, large-scale impact. For example, making nationwide changes to curriculum programs at all school levels will have broader impact than developing a targeted climate inclusive curriculum at one preschool because of the intergenerational issue of ECD and CC. It is important that policy is designed to be effective at scale, across a whole nation, and that funding is in place to ensure quality actions that can continuously be refined based on recent evidence. Leveraging the private sector more could also assist in supporting young children's needs and this was reflected in the ARNEC 2022 conference feedback.

Whole family approach to supporting children

For the very youngest children, the need to consult parents and caregivers was clearly identified among participants in numerous focus groups. They reflected on the role of parents and caregivers in providing perspective and opportunity to hear children's voices and perspectives in policies and programs. As it is often difficult to directly include and capture the voices of children aged birth to 3 years in advocacy and mitigation efforts, caregivers' perspectives are seen as the most immediate and available opportunity to understand how CC&ED is impacting their children's lives and the opportunity for families to respond.

Participants expressed concerns about how to support families in both chronic and episodic events and about how these events impact children directly. This echoes findings from the scoping study, which revealed that CC&ED can lead to toxic stress which can be passed down to young children, and caregiver mental wellbeing can also impact on their ability to provide responsive care. Participants also noted that they were very conscious of the need to provide age-appropriate response and support. Again, children aged birth to 3 years are often grouped with older age groups when it comes to policy and program development. This remains the case during chronic and episodic events, such as flash flooding, where temporary schools and learning programs are set-up for children in primary and secondary school, with minimal or no focus placed on providing socio-emotional support and opportunities for development among the youngest children. This includes a lack of support for parents and caregivers of young children.

ENVIRONMENTAL LITERACY

Access to knowledge about CC&ED and the impacts of CC&ED was a common thread throughout all focus group discussions. Participants commented on the need for increased education and awareness at all levels, from the government itself, the wider community, among families, for parents and caregivers and, of course, for children. These themes have been

intentionally grouped under the language of ‘Environmental Literacy’ as they share a common core: a need for greater understanding so that positive change can be made. Environmental Literacy as it’s used here is an awareness of the impacts of CC&ED, understanding of the issues involved, and the ability, capacity and understanding needed to take appropriate action.

Opportunity in government and community

Environmental literacy in the government is both the ability to understand and the capacity to act in response to the impacts of CC&ED.

Acknowledgement, advocacy and prioritisation

Participants observed that while there may be high level, general understanding of climate change, the impacts on specific groups of people (women, children, the elderly, the disabled) are either not understood or not considered. They affirmed that knowledge around CC&ED and its impacts on ECD are not widespread among government agencies, particularly those who are not environmentally focused. As a result, knowledge may be centred in one area of government (for example, a Disaster Risk Reduction team) with limited knowledge sharing. There was also agreement that general awareness in the community (e.g., ECD community, local level) is often lacking.

Participants also asserted that, where there is understanding, this might not always translate to action within local or national policy or planning. They also felt that there exists a disconnect between national and subnational levels of government (i.e., local or community leaders versus national leaders).

For countries where there is knowledge and action, there was a noted gap within CC&ED mitigation and planning around education and strategies to support teaching of CC&ED as well as mitigating the impacts on schooling. Children and their experiences of the impacts of CC&ED were not consistently prioritised. Even when there is a direct impact upon the community, focus is placed on the natural disaster or climate event itself, rather than on mitigation, preparation, or planning. Further, there is a lack of focus on early childhood education settings.

Ongoing infrastructure development as a challenge and an opportunity

Ongoing construction was mentioned as both a challenge and an opportunity. In some countries, such as Cambodia, there is widespread construction as the country continues to build its infrastructure. Construction companies in Cambodia do not always follow environmental guidelines around climate friendly building practices and waste disposal. This was a theme mentioned several times: the need to balance the development of the country versus the need to decrease carbon emissions. Some developing countries expressed frustration at needing to make policy change to manage the impact of developed countries emissions on global climate change, when their own economy is in a period of growth.

However, construction work and ongoing infrastructure development was also seen as an opportunity. With the development of new resources, construction can be more eco-friendly from the outset, implementing mitigation strategies such as higher insulation in homes and office buildings to reduce the need for heating powered by fossil fuels, including green spaces across a neighbourhood or city and ensuring that there are child friendly spaces in all city planning. For example, Urban95 is a global initiative created by the Bernard van Leer Foundation that works with leaders, planners, designers, advocates and communities to support the healthy development of young children and the wellbeing of caregivers in cities.

Knowledge exchange at community and school levels

Schools are seen as a central knowledge hub in many areas and as a tool to not only engage children, but also families and the wider community. Some countries are actively working to utilise the existing strength of schools by creating local stakeholder groups (e.g., Cambodia) to involve the community in planning for and implementing mitigation strategies for children. Children themselves are also involved in this process, ensuring their voices are heard. However, the age range of these children was not mentioned.

Knowledge exchange also takes place more directly within families and homes. Children who learn about the impacts of CC&ED and mitigation strategies in school, often take that knowledge and associated behaviours back into their immediate communities.

Supporting parents and caregivers

Education and awareness

Participants described how it is a significant challenge to ensure there is good coverage of knowledge about CC&ED and the impacts on children from the perspective of parents and caregivers. They noted a lack of awareness among some parents and educators about the impacts of CC&ED on children's health. This is something many countries are working to address, often alongside ECE programs as targeted parent education and support. Participants suggested there exists an opportunity for parental education when capturing data on children from birth to 3 years. As caregivers are seen as the most direct route to identifying the impacts of CC&ED on these children, the caregivers need to understand CC&ED in order to engage fully in the discourse.

Psychosocial support for parents and caregivers

Similarly, participants also noted a lack of priority on supporting caregivers to provide responsive care. Participants observed that parents often do not have the resources, skills and emotional energy to support children effectively in times of stress or family need. Families are often experiencing multiple impacts of CC&ED simultaneously. They may have lost their livelihood, become ill and unable to work, lost their home, been displaced and lost their community of caregivers and support network, or experience any number of other significant events in combination. In many countries across the Asia Pacific region, the government has limited resources available to support these families financially or socially.

However, there are some positive examples being implemented to provide psychosocial support in times of climate disaster. In Tonga, a recent triple disaster (an underwater volcanic eruption, a tsunami, and then the first waves of COVID-19) led to families spending extended periods of time in evacuation centres. This is not only incredibly stressful, but highly disruptive to all members of a family. Alongside the government, UNICEF Pacific worked to build on existing systems to create focused curriculums for ECD to be rolled out in evacuation centres. This provided support for the wider family grouping by relieving stress and concern over their children's education and providing time for the adults to find work or to simply have some social-emotional help from others. This example is being considered, reflected upon, and refined for future implementation in other Pacific Island nations.

Specific programs and interventions to support CC&ED impact

Participants noted several examples of programs and interventions that focus on supporting young children, in the context of CC&ED. For instance, in Mongolia, there is limited knowledge among kindergarten teachers about air pollution and the effects of coal in schools. In response, a targeted training program has been rolled out to educate carers, educators, parents, and children about the dangers and risks as well as support to make infrastructural changes in schools and kindergartens. 256 low-cost air quality monitoring devices were installed inside and outside kindergartens. The parents, alongside the kindergarten teachers, were taught how to read the devices and interpret the data. They were also provided with information on how air quality impacts children's health through simple videos.

The Bernard van Leer Foundation is another strong example of engaging parents, carers, and the wider community in understanding CC&ED and its impacts on young children. They worked to create awareness of how a 3-year-old child experiences the world through virtual reality. By allowing people to see the world from the perspective of the child, the hope was that parents and caregivers would have a better understanding of how CC&ED may impact their lives differently to the lives of an adult.

Children as agents for change

Embedded CC&ED education in EC curriculum

Several participants commented on the importance of including CC&ED more comprehensively in EC curriculum design, ideally at a national scale. Several participants across different sub-regional groups noted that while CC&ED is included in primary and secondary curriculum programming, it is not explicitly included in ECE program or policy. In several countries (e.g.,

New Zealand, Australia), there is active work focused on developing more targeted CC&ED curriculum programming for early childhood, expanding on the often brief coverage of climate change or the environment in general. This is often focused on children from aged 3-5 years old, so there is still scope for future inclusion for children birth to 2 years old.

Focus group participants described how education in schools has not only a direct impact on the child, but on the wider family. If a strategy or practice is implemented in the first year of formal early childhood schooling, the family is more likely to take that practice home. Children are also seen as great advocates in their own families, taking home their new learning and behaviour and sharing it with their community.

Play-based learning and skill development re: CC&ED

For the very youngest children, participants acknowledged that gaining their perspectives as well as providing comprehensive education regarding CC&ED is difficult. However, efforts are being made to include children from birth to 3 years by involving their parents and caregivers, and through play-based learning and skill development programs. This includes providing age-appropriate reading material and toys for families and schools, as well as training educators on the topic of ECD and CC&ED. This is an area that is currently under development across many regions. It was also noted that as more targeted data is collected, there will be more opportunities to integrate very young children and their needs into early educational programs in the future.

INTEGRATING YOUNG CHILDREN'S VOICES

Participants were asked about efforts to include children in policy planning and development in their region. Answers varied widely, with some countries having large scale advocacy and engagement programming already in place (e.g., the Philippines) and others having made limited progress (e.g., China). Participants agreed on the importance of engaging children, particularly very young children, but generally agreed that it was difficult to do so. Barriers include a lack of targeted funding, a lack of human resources and time, a lack of government interest or support, and a lack of knowledge regarding how to integrate young children's voices effectively. We underscore the general lack of common understanding on what is meant by integrating young children's voices into policy planning and development.

Children as a significant untapped resource

Participants asserted that children should be recognised as agents of change; as individuals who can contribute to managing and mitigating climate change. While children may be consulted, sometimes follow-up is insufficient or surface-level, and more needs to be done to engage and empower young children. This is seen as an untapped area of opportunity. For example, in China, there are no established pathways to include children in policy conversation, but those working in the ECD space recognise the potential for change.

Several participants also noted there is an imbalance of youth representation from the global north versus the global south. There are many child climate activists in the global south and across the Asia Pacific who do not necessarily receive the visibility that others do from Europe, the US and the UK. Many issues for the youth movement align with issues in the early childhood arena, and the youth movement can help in amplifying this.

Engagement as opportunity

Establishing youth groups and education programs is a strong start but it is not enough. Children need to be able to see the impact of their work through their communities. With funding from UNICEF, young children in Mongolia were selected from across the provinces to work directly with national authorities and share their views with high-level policy makers. Through actively creating these relationships, children are supported in both forming and sharing their perspectives and are engaged in the end-to-end process.

In other countries, including Pakistan, teacher training includes CC&ED and ways to engage children and their community in becoming advocates for policy change. This includes a focus on the direct impacts of CC&ED on their immediate community and opportunities for

discussion on ways to address these impacts. Participants noted that across South Asia, there has not been a focus on including children in policy and program development, and further engagement is required.

Using data to create age-differentiated climate policies

An area of opportunity that was raised in the focus groups was the option to develop age-differentiated climate policies and programs. This would be in response to the collection and analysis of age disaggregated data discussed previously. Participants were excited about the possibilities age-differentiated climate policies could afford to young children but were unsure of how to develop and drive such change without wider government or organisational support. This is an area that several participants commented was a priority for their own organisations and it is anticipated that a significant amount of work will be undertaken in this area over the next 10 years.

Most vulnerable to most valuable

A Scoping Study to Put Young Children at the Heart of Climate Actions and Environmental Protection

As we move rapidly into a world affected by climate change and environmental degradation, and the need for adaptation to its increasingly serious and disruptive effects, there is growing recognition that young children will be the most profoundly affected but they are at the same time the least well represented in the policies and programs designed to respond to current impacts and plan for future consequences.

Young children aged 0-8 are the most vulnerable to the impacts of climate change and environmental degradation.

But they are also the most valuable group in the fight against it. Supporting young children is a smart investment and should be placed at the forefront of climate resilience action.

This Scoping Study is a response by ARNEC and its partners to this situation, designed to put early childhood development at the heart of climate actions and environmental protection.



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