MINISTRY OF ENVIRONMENT
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REPUBLIC OF INDONESIA

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Climate Landscape Analysis for Children in Indonesia

AN ASSESSMENT OF THE INTERLINKAGES BETWEEN CLIMATE, ENVIRONMENT, ENERGY, AND CHILDREN IN INDONESIA

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Climate change has and will impact and influence almost all aspects of human life. The impacts of climate change include increased risk of hydro-meteorological disasters, health problems, impacts on education, ecosystem services, as well as impacts on food, water, and energy supplies. This threatens the sustainability of life support systems and causes a decline in the quality of human life, including children, as one of the vulnerable groups.

Compared to adults, children are less capable to cope with shocks and emergencies. Children and young people are vulnerable to risks created by lack of sanitation, food, health care, education and protection from hazards; they are also less likely to be able to easily access the support provided by social protection policies, which are not yet fully able to address the issues arising from climate shocks.

Children and youth participation in decision-making, including those related to climate change, environment and energy policies, needs to be institutionalized. Indonesia has child advocacy mechanisms in the National Children's Forum and Regional Children's Forums. These and other youth networks and policy-making processes such as stakeholder consultations for climate change, energy and environment policy development, may serve as platforms for children and youth involvement in policy formulation and implementation. Children and youth involvement should be formally institutionalized as stakeholders in public-private mechanisms and structures that contribute to policy planning, implementation and evaluation.

The Climate Landscape Analysis for Children in Indonesia or abbreviated as CLAC (Climate Landscape Analysis for Children) examines the priorities, policies, and programs of the Government of Indonesia related to the inclusion of children's rights and participation in climate change, energy, and environmental policies and programs, including sensitivity to these issues related to children. The output of this study can be used to guide various parties in mainstreaming children's rights and needs in climate change strategies. The critical role of the younger generation has even been recognized at COP-26 in Glasgow in 2021. Therefore, children and the younger generation must be the main important stakeholders who determine the success of Indonesia's efforts in tackling climate change.

I thank and appreciate all parties who have contributed to the preparation of this document. Hopefully, this document will become a reference for all parties to consider the importance of meeting children's rights and needs in dealing with the impacts of climate change.

Prof. Dr. Ir. Siti Nurbaya Bakar, M.Sc.
Minister of Environment and Forestry

The Government of Indonesia (GoI) has established various documents and developed national policies and regulations in responding to climate change, including the Nationally Determined Contribution (NOC) document as a commitment to working collaboratively to reduce greenhouse gas emission, the Long Term Strategy - Low carbon and Climate Resilient {LTS-LCCR) document, as a guideline for the low carbon development strategy, and an Indonesia's FOLU Net-Sink 2030 document, as a set of strategic measures to reduce GHG emission from forestry and other land-use sectors. Furthermore, the Enhanced NOC -2022 has set a target to reduce GHG emission by 31,89 %, which will be achieved jointly by ministries, institutions and other stakeholders in implementing climate change policies in Indonesia.

In the actionable programmes, the commitment is not only limited to the government's responsibility but must also be a joint commitment among all parties. In this case, the collaboration between stakeholders and all involved communities must be encouraged. The community as a group that is directly impacted by climate change should be informed and involved in every climate change action, especially vulnerable groups such as children.

This Climate Landscape Analysis for Children (CLAC) report is expected to be a reference for stakeholders to assess the status and condition of children in Indonesia due to the impact of climate change. This study also provides recommendations that various stakeholders can make in efforts to mainstream children's rights and needs in climate change policies and programmes. This CLAC report can also be a reference for stakeholders, primarily related social sector stakeholders {WASH, Nutrition, Health, Education, Social Policy, and Child Protection).

Finally, I sincerely thank you for all the participation and cooperation of various partiesinvolved in the preparation of this document. Hopefully, this report can be an excellent first step to encourage a child-focused policy and strategy to address the impact of climate change in Indonesia.

Ir. Laksmi Dhewanthi, M.A.
Director General of Climate Change
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Climate change arguably poses the single greatest challenge to the protection of children's rights. Climate change, environmental degradation and climate-related disasters threaten to reverse the progress made in improving children's lives – globally, and in Indonesia.

In Indonesia, an estimated 28 million children are exposed to coastal flooding and 15 million to heat waves, while a significant majority of children are exposed to air pollution. In 2023, over 5,000 disasters were recorded, affecting an estimated 8.5 million people. Frequent extreme weather events, including droughts and flooding, coupled with long-term climatic shifts such as rising temperatures and sea levels can cause disruptions to critical social services, including education, health and water, sanitation, and hygiene. All these have serious implications on children's right to grow up in a healthy and safe environment. The Climate Landscape Analysis for Children, coordinated and led by the Ministry of Environment and Forestry, is Indonesia's first-ever review of climate change impacts and policies and programmes in place, conducted specifically from a child rights perspective.

The report finds that climate action for children is yet to be fully integrated into social sector policies. Laws, regulations and national or sub-national education, health, water and sanitation, and child protection plans often overlook the impact of climate change and rarely include child-focused actions to combat climate change and build resilience.

A response is underway to address these challenges. A consultative process with the Government of Indonesia and associated stakeholders has led to a series of recommendations to strengthen the response going forward. These are outlined in the report.

Today's children, who are the country's future, must be safeguarded from climate-related shocks and stresses. It is imperative to educate children about climate change, to engage them in creating solutions and to put them at the center of all climate action. Through their collective advocacy and action, children can help to address the climate crisis and support national climate leadership.

UNICEF is committed to supporting the Government of Indonesia to tackle the climate crisis, as part of sustainable national development planning, and to help ensure children are at the center of climate action.

Maniza Zaman
Representative
UNICEF Indonesia

Contents

Acronyms and Abreviations

BMKG	:	Badan Meteorologi, Klimatologi, dan Geofisika/ Meteorology Climatology and Geophysics Council
CBS/ BPS	:	Central Bureau of Statistics/ Badan Pusat Statistik
CCPI	:	Climate Change Performance Index
CCRI	:	Children's Climate Risk Index
CEE	:	Climate, Environment, Energy
CLAC	:	Climate Landscape Analysis for Children
CRC	:	Convention on the Rights of the Child
DJF	:	December, January and February
FAO	:	Food and Agriculture Organization
FGD	:	Focus Group Discussion
GCRI	:	Global Climate Risk Index
GDP	:	Gross Domestic Product
GHG	:	Greenhouse Gas
IPCC	:	Intergovernmental Panel on Climate Change
JJA		June, July and August
KEN	:	Kebijakan Energi Nasional/ National Energy Policy
KII	:	Key Informant Interview
MoEF/ KLHK	:	Ministry of Environment and Forestry/Kementerian Lingkungan Hidup dan Kehutanan
KLHS	:	Kajian Lingkungan Hidup Strategis/ Strategic Environmental Studies
KM/H	:	Kilometres per hour
MoWECP/ KPPPA	:	Ministry of Women Empowerment and Child Protection/ Kementerian Pemberdayaan Perempuan dan Perlindungan Anak
LCDI	:	Low Carbon Development Indonesia
LTS-LCCR	:	Long-Term Strategy for Low Carbon and Climate Resilience
MAM		March, April and May
MoH/ Kemenkes	:	Ministry of Health/ Kementerian Kesehatan
MPH	:	Miles per hour
MTOE	:	Million or mega ton of oil equivalent
MoV	:	Ministry of Villages Disadvantaged Regions and Transmigration/ Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi (Kemendesa PDTT)
NAP		National Action Plan
NDMA/ BNPB	:	National Disaster Management Authority/ Badan Nasional Penanggulangan Bencana
NRE/ EBT	:	New and Renewable Energy/ Energi Baru Terbarukan
NDC	:	Nationally Determined Contribution
ND-GAIN	:	Notre Dame Global Adaptation Initiative
PLN		Perusahaan Listrik Negara/ National Electricity Company
RAN-API	:	National Action Plan for Climate Change Adaptation/ Rencana Aksi Nasional Adaptasi Perubahan Iklim
RCP	:	Representative Concentration Pathways
RISKESDAS	:	Basic Health Research/Riset Kesehatan Dasar
RPJMN	:	Rencana Pembangunan Jangka Menengah Nasional/ Medium-Term National Development Plan
SDGs	:	Sustainable Development Goals
SIDIK	:	Vulnerability Index Data Information System
SON	:	September, October and November
SST	:	Sea Surface Temperature
UNFCCC	:	United Nations Framework Convention on Climate Change
UNICEF	:	United Nations Children's Fund
WASH	:	Water, sanitation and hygiene

Glossary

Adolescent : A person between 10 and 19 years of age (Report of the Advisory Committee for the International Youth Year, United Nations (A/36/215)). See also 'young person'.

Carbon sink : A carbon sink is anything that absorbs more carbon from the atmosphere than it releases, e.g., plants, ocean, soil (ClientEarth).

CEE : Climate, environment and energy.

Child : According to United Nations Convention on the Rights of the Child (UNCRC), a person under 18 years of age.

Climate change : A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Note that the Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.' The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes (IPCC SR15 Global Warming of 1.5° C.

Climate change adaptation : Climate change adaptation is an effort made to increase the ability to adapt to climate change, including climate diversity and extreme events so that potential damage due to climate change can be utilized and the consequences arising from climate change can be overcome (Presidential Regulation No. 98/2021).

Climate change mitigation : Climate change mitigation is a control effort to reduce risks due to climate change through activities that can reduce emissions or increase GHG absorption and store/strengthen carbon reserves from various emission sources (Presidential Regulation No. 98/2021).

Climate resilience : Climate resilience is the ability to anticipate, prepare and respond to the impacts, risks and vulnerabilities resulting from climate change on areas and people's lives (Presidential Regulation No.98/2021)

Decarbonisation : The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically refers to a reduction of the carbon emissions associated with electricity, industry and transport (IPCC SR15 Global Warming of 1.5° C).

Energy security : The goal of a given country, or the global community as a whole, to maintain an adequate, stable and predictable energy supply. Measures encompass safeguarding the sufficiency of energy resources to meet national energy demand at competitive and stable prices and the resilience of the energy supply; enabling development and deployment of technologies; building sufficient infrastructure to generate, store and transmit energy supplies; and ensuring enforceable contracts of delivery (IPCC SR15 Global Warming of 1.5° C).

Extreme weather events : A rare event at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as, or rarer than, the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season) (IPCC SR15 Global Warming of 1.5° C).

Food security : According to the World Food Programme (WFP), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Food-borne disease : According to the World Health Organization (WHO), food-borne diseases are caused by contamination of food and occur at any stage of the food production, delivery and consumption chain. They can result from several forms of environmental contamination including pollution in water, soil or air, and from unsafe food storage and processing. Food-borne diseases encompass a wide range of illnesses from diarrhoea to cancers. Most present as gastrointestinal issues.

Fortification : According to WFP, the practice of deliberately increasing the content of an essential micronutrient, i.e., vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health.

Gender equity : Ensuring that women and men have the same rights, resources and opportunities. Gender equity recognises that women are often more vulnerable to the impacts of climate change and may be disadvantaged in the process and outcomes of climate policy (IPCC SR15 Global Warming of 1.5° C).

GHG emission : GHG emissions are the release of GHG into the atmosphere in a certain area within a certain period of time (Presidential Regulation No.98/2021).

Gini Ratio Index : A statistical measure of economic inequality in a population.

Hydro-meteorological disasters : According to Badan Meteorologi Klimatologi and Geofisika (BMKG), this is a process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Hydro-meteorological disasters include floods, debris and mud floods; tropical cyclones, storm surges, thunder/hailstorms, rain and wind storms, blizzards and other severe storms; drought, desertification, wildland fires, temperature extremes, sand or dust storms; permafrost and snow or ice avalanches. Hydro-meteorological disasters can be single, sequential or combined in origin and effects.

Hygiene : Conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness.

Inclusivity : The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalised.

Monsoon : A seasonal prevailing wind in the region of South and Southeast Asia, blowing from the southwest between May and September and bringing rain (wet monsoon), or from the northeast between October and April (dry monsoon).

Net zero GHG emission : Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon) (IPCC SR15 Global Warming of 1.5° C).

Renewable energy : According to the International Renewable Energy Agency (IRENA), "renewable energy includes all forms of energy produced from renewable sources in a sustainable manner, including bioenergy, geothermal energy, hydropower, ocean energy, solar energy and wind energy. The International Energy Agency (IEA) defines renewable energy as "derived from natural processes" and "replenished at a faster rate than they are consumed", includes the following sources: "electricity and heat derived from solar, wind, ocean, hydropower, biomass, geothermal resources, and biofuels and hydrogen derived from renewable resources".

Resilience : According to Arctic Council, the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation (adapted from IPCC SR15 Global Warming of 1.5° C).

Risk : The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems (IPCC SR15 Global Warming of 1.5° C). According to International Strategy for Disaster Reduction (UNISDR), the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Sustainability : A dynamic process that guarantees the persistence of natural and human systems in an equitable manner (IPCC SR15 Global Warming of 1.5° C).

Vector-borne disease : According to the WHO, a human illness caused by parasites, viruses and bacteria that are transmitted by vectors. Distribution of vector-borne diseases is determined by a complex set of demographic, environmental and social factors. Some examples of vector-borne diseases are chikungunya, dengue, malaria, lime disease and typhus.

Vulnerability : The tendency to be negatively affected encompasses various concepts and elements including sensitivity or vulnerability to hazards and lack of capacity to cope and adapt (IPCC SR15 Global Warming 1.5° C).

Water-borne disease : According to the WHO, water-borne diseases, by definition, are those that are transmitted by ingestion of contaminated water. Important water-borne diseases include diarrhoeal diseases, cholera, shigella, typhoid, hepatitis A and E, and poliomyelitis.

Young person : According to the United Nations, a person between 15 and 24 years of age. See also 'adolescent'.

Executive Summary

OVERVIEW

The Climate Landscape Analysis for Children (CLAC) in Indonesia is a substantial and comprehensive child-centred reference study for understanding the interlinkages between climate, energy and environment (CEE) issues and the six social sectors that cater for the rights and needs of one of the country's most vulnerable groups: children. The sectors are water, sanitation and hygiene (WASH); food and nutrition; health; education; child protection; and social policy.

The CLAC studies CEE issues in terms of risks to children, examining gaps in consideration for their rights and child-sensitive approaches. It provides information on data availability, existing laws, policies and regulations, trends and projections, strategies and stakeholders. Importantly, it makes recommendations for building the capacity of the child-relevant social sectors in the face of climate change, environmental degradation, and unequal energy access. adolescent development and participation, and advocacy and communication corresponding to children's rights and needs.

Sensitive to the rights and needs of this age group, the CLAC is concerned with giving them a voice in CEE policies, programmes and actions. As stakeholders in the future, children will be significantly affected by climate change and they have a role as agents of change who will inherit the success or failure of Indonesia's climate action targets.

The CLAC is part of the commitment of the Government of Indonesia to address and combat climate change as a global citizen.

ANALYTICAL FRAMEWORK

The CLAC was developed by analysing a compilation of available and accessible documents, data and information on CEE policies and programmes and on the child-relevant social sectors. The study also incorporated primary qualitative data from key informant interviews and focus group discussions with stakeholders to bolster, triangulate and validate its analyses, findings and recommendations.

After reviewing the collected documents, consultative meetings were held with stakeholder ministries and agencies to obtain input and feedback to support the document review. Following these meetings and desk analyses, focus group discussions were conducted to formulate strategies, recommendations and stakeholders' participation to address gaps and needs. The results of the reviews, consultations and discussions were employed as inputs for conducting synthesis analysis and generating recommendations.

The study sets out context and constructs a baseline which is used to develop strategy and objective, stakeholders, partnerships and finance, gaps and opportunities, and recommended actions.

INDONESIA IN BRIEF

Geography: As the largest archipelagic country in the world, the Republic of Indonesia is geographically unusual with more than 17,000 islands spread over an area of 1.9 million km. Located between the continents of Asia on the Indian ocean and Australia on the Pacific, Indonesia is a region of the Intertropical Convergence Zone, making its atmospheric circulation particularly active. Its varied topographical terrains and climates, ranging from sea and coastal systems to peat swamps and montane forests, make it more exposed than most countries to the increasing risks of climate shocks and disasters, disturbances in its ecosystems, and instability in its food, water and energy supplies.

Socioeconomic status: According to the World Bank (2022), Indonesia is the world's 10th largest economy in terms of purchasing power parity. In 2021 Indonesia's GDP was Indonesian Rupiah (IDR) 62.2 million (US$ 4,349.5 per capita), making it a lower-middle-income country according to World Bank classification. In 2021 the economy grew by 3.69 per cent, which compares favourably to its growth contraction of 2.07 per cent in 2020. In terms of expenditure, the Export Component of Goods and Services achieved the highest growth at 24.04 per cent in 2020. The country's inflation rate was in the low category (5.71 per cent) in 2022.

Population: Indonesia is currently the fourth most populous nation in the world, with a population of 270.2 million in 2020, estimated to reach 335 million by 2050.

INDONESIA'S CURRENT CEE STATUS

GHG emissions: Indonesia, as part of the largest countries in the world, is a country that contributes to greenhouse gas (GHG) emissions through various activities carried out. This is also shown by GHG inventory information by the Ministry of Environment and Forestry (KLHK) which shows an increase in GHG emissions every year from 2000 to 2019. Most of these GHG emissions come from forest fires and dependence on energy which contributes more emissions than industry, waste, and agriculture.

Climate risk: Indonesia is ranked 14th out of 180 countries (Source: Global climate risk index 2019 extreme weather event category) in 2019 in the Global Climate Risk Index in terms of extreme weather events including hydrometeorological events, a rising heat index and increasing risk of cyclones.

Environmental quality: Indonesia's environmental quality index, which is based on water, air and land cover quality, measured 66.55 in 2019, increasing to 70.27 (Source: Indonesian environmental quality index 2021) in 2020[1] and 71.43 in 2021 (with 0 being the lowest and 100 the highest). This index showed the need for improved environmental quality in the urban and densely populated areas to support health and well-being.

Energy: According to the International Energy Agency (2021), Indonesia is the most significant energy producer and consumer in Southeast Asia, in 18th position among the 23 highest energy-consuming countries worldwide. Measured in 2019, the most extensive power plant mix in Indonesia was coal at 59 per cent, gas-fired power plants at 21 per cent, and renewable energy-based power plants at 16 per cent. Indonesia's National Energy General Plan aims to decrease coal production and increase the supply of renewable energy. Low Carbon Development Indonesia endorses a public policy framework that aims to encourage the move to a low carbon economy.

CEE IMPACT ON INDONESIA'S CHILDREN

The rights of children and young people to essential social services are compromised by the impact of CEE issues. Less able than adults to fend for themselves in shocks and emergencies, children and young people are vulnerable to the risks created by a lack of sanitation, food, healthcare, education, and protection from harm. The access children have to climate, energy and environmental education is limited, yet it is crucial to strengthen their resilience so that they can absorb and adapt to a new climate reality.

Climate change: On the Climate Risk Index, Indonesia is ranked 46th of 163 countries. Indonesian children will increasingly face environmental and climate related risks that will affect their health, food security and access to nutritious foods, safe water and sanitation facilities, and their future livelihoods. They may face psychosocial impacts following a disaster, such as emotional stress and even post-traumatic stress disorder. Climate crises can force evacuation and even migration, separate children from their families, increase the risk of homelessness and orphanhood and put their lives at risk from conflicts and violence.

Water: Compromised water leads to an increased incidence of malnutrition and water-borne disease such as diarrhoea, which is the most common cause of death in children under 5 years of age. Water pollution impacts every living organism but children are particularly at risk of poisoning and skin diseases from exposure to polluted water. Land degradation, especially around the upstream watershed, will affect the availability and quality of water downstream due to the loss of environmental service providers, thereby reducing the carrying capacity of the area, so land quality becomes important. It causes deterioration in water discharge and hydrometeorological disasters are connected to reducing watershed quality.

Air pollution: Land and forest fires produce pollutants that affect the immune system and immunity development of children under 5 years of age. Approximately two billion children (Source: WHO) live in areas where air pollution levels exceed the standards set by the World Health Organization (WHO). Air pollution, which results from unsustainable use of fossil fuels and other sources, is one of the biggest risk factors for disease and premature death. In 2018 WHO said that in low- to middle-income countries exposure to air pollution contributed to more than half of all deaths of children under 5 years of age due to acute lower respiratory infections or pneumonia.

Land degradation: Loss of ecosystem services as a result of land degradation, estimated at 5.69-26.75 per cent (Source: NDC Roadmap on Adaptation 2020), caused the national GDP to shrink by about 14.4 per cent. Economic disturbance triggered by hydrometeorological disasters has greatly impacted the ability of families to cater for children especially in agricultural households. Land degradation and deforestation indirectly cause loss of biodiversity and ecosystem imbalance, thus threatening food security because less biodiversity means that plants and animals are more vulnerable to pests and diseases. Biodiversity plays an important role in food security, human health and livelihoods. Sustaining biodiversity provides clean water and contributes to carbon sequestration and other essential services.

Energy: The increase in extreme weather events, rising air and water temperatures, changes in rainfall and river flow patterns, and future sea level rise, can affect energy demand and supply, impacting on children and children's services. Disruption of energy production, especially electricity, will have an impact on the unfulfilled demand for electrical energy. With energy growth of around 5.8 per cent (Source: IESR 2019) per year and rapid energy use in Indonesia, the effects on the electricity sector can have drastic social and economic impacts. The supply of electrical energy can be disrupted due to a decrease in generating capacity caused by climate change induced events.

Climate change could also affect access to alternative energy sources especially when the energy mix is not optimal. Coal remains the dominant source of energy in Indonesia. Extreme weather and climate change induced events are not only able to disrupt the coal mining process, rising sea levels can also hamper the transportation of coal by sea.

Energy infrastructures such as pipelines, electricity transmission, ports, and gasification terminals are also at risk of damage due to extreme weather events in the form of floods, Forest and land fires and hurricanes. Electrical losses may also occur due to temperature changes that affect the transformation and electrical conductivity of the line. The increase in the use of air conditioners due to heat waves will cause a surge in electricity demand, causing great pressure on the electricity network and could cause power outages and even network damage.

REVIEW OF CHILD-RELEVANT SOCIAL SECTOR POLICIES

The CLAC reviewed priorities and the inclusion of child rights and participation in CEE policies and programmes in Indonesia, including an assessment of the six social sectors. A set of indicators was developed and employed to assess national policy documents on CEE and the social sectors and their sensitivity and responsiveness. The evaluation was complemented by stakeholder consultations through key informant interviews and focus group discussions.

The reviews employed a set of 15 indicators to assess 126 documents on national policies and programmes related to CEE and the six social sectors, including water, sanitation and hygiene (WASH), food and nutrition, health, education, child protection, and social policy., grouped into three categories:

1. To assess sensitivity of climate, environment and energy policies to children's rights and climate risks (6 indicators);
2. To assess sensitivity of climate, environment and energy policies to participation and empowerment of children and young people (4 indicators);
3. To assess sensitivity of social sector policies to climate, environment and energy risks and vulnerabilities (5 indicators).

RECOMMENDED STRATEGIES FOR CHILD FOCUSED CEE ACTION

The CLAC recommendations are intended to inform all stakeholders on the actions within CEE and relevant social sector policies, programmes and actions to protect children from severe impacts and risks of climate change, environmental degradation, and energy crises, while building their capacity and involving them in decision making and action. Broadly, they are:

1. Advocacy and awareness for mainstreaming child rights in policies and programming (including financing);
2. Coordination and collaboration of efforts to address climate risk across policies and programming;
3. Knowledge and evidence generation related to the climate and child well-being nexus to better inform programming;
4. Systems strengthening to increase resilience to climate risk;
5. Providing an enabling platform for youth engagement in CEE action;
6. Strengthening data collection and early warning systems.

STAKEHOLDERS AND PARTNERSHIPS

Operationalising the recommended strategies requires the collaboration of multiple stakeholders and partners, including government, civil society, academia, private sector, development partners, media, and children's and young people's forums/ groups. Ministries are expected to play active roles in mainstreaming children in various programmes and policies by considering the six recommended strategies. Stakeholders should consider efforts to transform, adjust, strengthen, and integrate various programmes within the institution to include child rights and needs in the social sectors.

CONCLUSION

in recent years efforts have been made to consider the rights and protection of children and young people in CEE issues, but they still face specific risks and vulnerabilities that are not yet adequately addressed.

While many policies exist to cover CEE issues as far as they are understood today, few consider the specific vulnerabilities and risks that children and young people will increasingly face as climate issues increase. And while policies are useful, implementation is often an unknown quantity.

Children and young people's participation in decision making has not yet been institutionalized. They are seen only as part of vulnerable groups, not yet as agents of change. Indonesia has child advocacy mechanisms in the National Child Forum and the Local Child Forum. These, and other youth networks and policymaking processes, could be platforms that invite children to speak up and act on climate change concerns, enabling them to systematically engage in policymaking discussions and development, evidence generation, and policy implementation.

Children and young people should be formally institutionalised as stakeholders in public-private mechanisms and structures that contribute to policy planning, implementation and evaluation at various governance levels.

Chapter 1: Introduction

The 'Climate Landscape Analysis for Children (CLAC) in Indonesia' is a comprehensive and high quality child-centred study for understanding, assessing and evaluating the interlinkages between climate, energy and environment (CEE) issues (including policies, programmes and actions), and the six social sectors sensitive to children's rights and needs. The sectors are as follows: water, sanitation and hygiene (WASH); food and nutrition; health; education; child protection; and social policy. The Indonesia CLAC offers perspectives on gender, equity, risks and benefits. It also includes the cross-sectoral matters of disaster risk reduction (DRR), people with disabilities, adolescent development and participation, and communication for development corresponding to children's rights and needs.

The study considers the specific vulnerabilities of children and young people to CEE risks, the degree to which they are included in CEE policies and programmes, and their participation as agents of change. It provides information on policies, trends and projections, knowledge and data gaps, strategies, and stakeholders, and it offers recommendations for building capacity in CEE issues affecting the relevant social sectors. The issues are comprehensively addressed in terms of data availability, existing laws, policies and regulations, risks to children, potential benefits of climate actions, and the gaps in considering children and taking child-sensitive approaches.

The Indonesian CLAC was conducted as part of the commitment of the Government of Indonesia to address and combat global climate change. The government's commitment was renewed by submitting the Updated Nationally Determined Contribution (NDC) document to the United Nations Framework Convention on Climate Change (UNFCCC) in 2021. The government's commitment was renewed by submitting the Updated Nationally Determined Contribution (NDC) document to the United Nations Framework Convention on Climate Change (UNFCCC) in 2021 and Enhanced NDC in 2022. The Updated NDC encapsulates the government commitments on CEE policies designed to meet low carbon development targets and improve climate resilience by 2030. Also in 2021, the government submitted the Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) 2050 to the UNFCCC. Domestically, the government connected its commitment with the Medium-Term National Development Plan (Rencana Pembangunan Jangka Menengah Nasional (RPJMN)) 2020-2024 by launching Low Carbon and Climate Resilience Development Policy 2020-2024 documents, and with a specific national priority on Climate Change and Disaster Management. This was subsequently operationalised into the Climate Resilience Development Policy 2020-2045.

1.1 BACKGROUND

The extent of the environmental challenges in Indonesia can be measured in the environmental quality index (indeks kualitas lingkungan hidup) which, in 2019, was 66,55[1]. The environmental quality index encompasses the air quality index (indeks kualitas udara), the water quality index (indeks kualitas air), and the land cover quality index (indeks kualitas tutupan lahan). In 2019, the highest environmental quality index (more than 80) came from the eastern provinces of Papua Barat, Papua, East Kalimantan, Central Sulawesi and Maluku. According to the Ministry of Environment and Forestry (MoEF), in 2020 the environmental quality index increased to 70.27[2], and in 2021 it increased to 71.43[3].

The climate changes evident in these increasing scores are driven by global warming caused by increasing levels of greenhouse gas (GHG) in the atmosphere[4]. The atmospheric concentrations of GHG are predicted to reach 685 parts per million (ppm) by 2050 and could be higher than 1,000 ppm in CO_2 and equivalents (CO_2e) by 2100. Human activities that require fossil fuels as a source of energy contribute to the increase in carbon and related GHG emissions. Consequently, as mandated by the 2015 Paris Agreement, countries around the world are required to mitigate against climate change by reducing GHG emissions. As a country that ratified the Paris Agreement through Law No. 16/2016, the Government of Indonesia committed to reduce GHG emissions by 2030 as articulated in the aforementioned documents.

The commitments made by the Government of Indonesia acknowledged children as part of vulnerable groups that have to be protected as mandated by the Paris Agreement[5]. However, the voice and the role of children, as well as their general participation as agents of change in climate actions in Indonesia, have not been clarified. According to the UN Convention on the Rights of the Child (CRC) (Konvensi Hak-Hak Anak), which was ratified through Presidential Decree No. 36/1990, the best interests of the child shall be given primary consideration in all actions concerning children, including climate change actions. Understanding the government's proactive stance, the Indonesian CLAC identifies the key knowledge gaps in formulating strategies and recommendations to mainstream the rights of children in climate-sensitive policies and programmes in Indonesia.

Indonesia is one of the largest archipelagic states in the world and is characterised by many small, low-lying island areas. Geographically, the country lies between the Indian Ocean to the west and the Pacific Ocean to the east. As a region of the Intertropical Convergence Zone between the continents of Asia and Australia, its atmospheric circulation is very active. This geographical situation contributes to the fact that Indonesia is considered one of the world's most disaster-prone countries. The region is frequently exposed to a range of hydrometeorological disasters such as floods, droughts, landslides and cyclones[6]. According to the Global Climate Risk Index (GCRI) (2021)[7], which is based on historical impacts of extreme weather events related to economic losses and fatalities, Indonesia had the 14th highest level of exposure and vulnerability to extreme weather events globally in 2019, and the 14th highest average fatalities in the preceding 10 years.

According to the National Disaster Management Authority (NDMA) (Badan Nasional Penanggulangan Bencana (BNPB)) and Indonesian Disaster Information Data (Data Informasi Bencana Indonesia (DIBI))[8], hydrometeorological disasters, particularly floods and strong winds, have occurred with increasing frequency in the past decade[9], causing the loss of human lives and damage to infrastructure and livelihoods.The economic consequences are huge. The economic consequences are huge According to the Executive Summary of the National Action Plan on Climate Change Adaptation (RAN-API), economic losses due to climate induced disasters could reach IDR 115.53 trillion by 2024[9] in the four priority sectors (marine and coastal, water, agriculture and health). The NDC Roadmap released by MoEF projected that the adverse impacts of climate change on human necessities (food, water, energy and health) in 2030 would be between approximately 0.66 per cent and 3.45 per cent of national gross domestic product (GDP), with a median estimate of 2.87 per cent of national GDP, approximately IDR 480 trillion[10]. This estimate is in line with the assessment by the Organisation for Economic Cooperation and Development (OECD) of climate change impacts on selected areas in Indonesia (agriculture, coastal zones, health, energy demand and tourism demand), with projected losses of about 2.4 per cent of GDP in 2060[11]. Hydrometeorological disasters could also be exacerbated by global climate change, eroding gains and limiting the progress of national development targets[12].

Climate change impacts could trigger a decline in environmental quality (pollution in water, air and soil) leading to unequal access to energy. The compounding consequences will have subsequent impacts on the economy which could lead to increased poverty, disease and job losses[13]. The impacts of climate change, environmental degradation, and unequal energy access will eventually pose serious challenges to the lives of children in Indonesia. According to the Children's Climate Risk Index (CCRI) released in 2021, Indonesia ranked 46th out of 163 countries, placing Indonesian children in the top third of countries with the highest risk of climate and environmental shocks[14]. Children will increasingly face environmental and climate related risks that will affect their health, access to food and nutrition, access to safe water and sanitation facilities, education, protection, and future livelihoods. As illustrated in Figure 1.1, climate and environmental shocks can affect crop production, causing shortages in food supply, disruption in water systems and contamination of water reserves. This leads to an increased incidence of malnutrition and water-borne disease such as diarrhoea, the most common cause of death in children under 5 in the world[15]. Malnutrition contributes to the severity of various diseases, and is responsible for nearly half of all deaths of children under 5 in low- and middle-income countries[16].

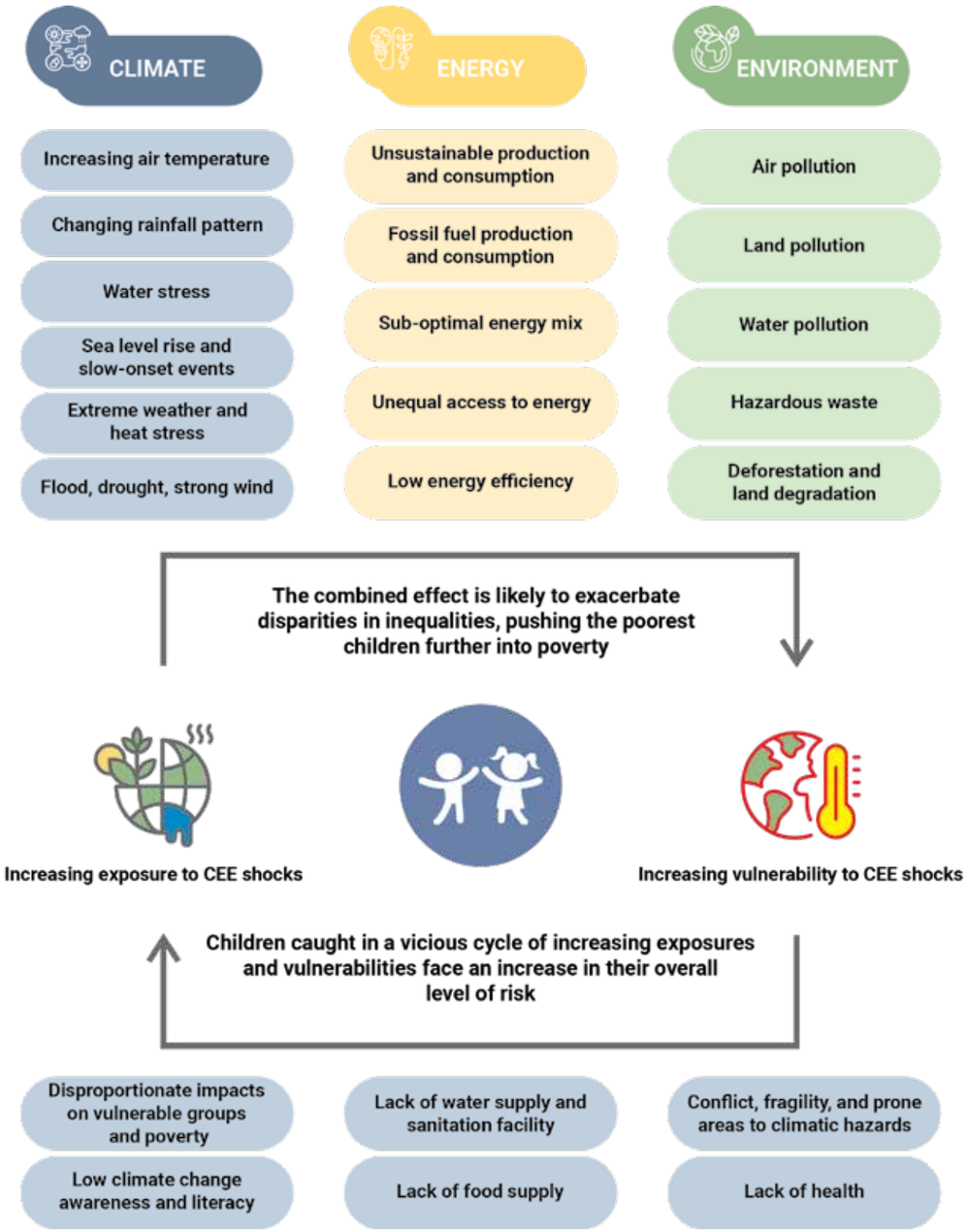
Climate change, indicated by many events such as increasing air temperatures and erratic rainfall patterns, is likely to exacerbate the spread of vector-borne diseases such as malaria and dengue, posing a threat to children's health. Air pollution resulting from unsustainable use and burning of fossil fuels, among other reasons, is a global concern as approximately two billion children live in areas where air pollution levels exceed the standards set by the World Health Organization (WHO). This challenges children's health, particularly hampering brain development and spreading airborne diseases [17]. In 2018 WHO [17] claimed that exposure to air pollution is one of the major killers of children worldwide, contributing to more than half of all deaths of children under 5 due to acute lower respiratory infections or pneumonia in low- and middle-income countries. Overall, threats from the impacts of CEE issues may contribute to increasing child poverty and put children's lives at risk from conflicts, violence, orphanhood and separation from their parents, especially in areas prone to climate hazards[18].

Children in Indonesia are affected by the complexity of CEE issues associated with climate change, environmental degradation and unequal energy access. This study analyses the interlinkages between the social sectors and CEE policies, programmes and actions, and it does so from the perspective of children's rights. Data was assessed through document reviews, key informant interview (KIIs), and focus group discussions (FGDs) with multiple stakeholders across ministry lines related to CEE and the social sectors.

The CLAC study offers an analysis of gaps in knowledge, data and information from which strategies and recommendations were formulated through multistakeholder engagements. Its recommendations are expected to strengthen the role of each stakeholder and to strengthen multistakeholder collaboration based on duties and functions, as well as mainstreaming children's rights into climate-sensitive policies and programmes. The government, through the Ministry of Women Empowerment and Child Protection (MoWECP/Kementerian Pemberdayaan Perempuan dan Perlindungan Anak/KemenPPPA), has socialised the dual functions of children as 'initiator' and 'informer' respectively[19]. These functions provide a foundation for enabling children as agents of change in CEE related actions in the country.

Overall, this study explores key interlinkages among CEE issues, the six social sectors and cross-cutting issues from the perspective of children's rights. The study also

Figure 1.1 The Indonesian CLAC Study Focuses On The CEE Issues In Social Sectors Affecting Children



Source: primary references to Children's Climate Risk Index, UNICEF, 2021 and Climate Change Impact Outlook, MoEF, 2020 adapted to Indonesian context.

identifies key gaps and needs, including recommendations and strategies to effectively mainstream the participation of young people and include the needs of children into climate-sensitive policies, programmes and actions in Indonesia.

1.2 OBJECTIVE

The objective of the Indonesian CLAC is to provide an understanding of the interlinkages between the CEE landscape in Indonesia in terms of data availability, existing laws, policies and regulations, risks to children, potential benefits of climate actions, and the gaps in considering children and taking child-sensitive approaches. The main CLAC analytical framework assesses how CEE issues affect children, especially in social sectors crucial to them, identifies gaps in current government policies and programmes, and generates recommendations for child-sensitive policies, programmes and actions. A comprehensive understanding is also provided on the consideration of inclusivity and sensitivity to the rights of children in CEE policies and programmes, considering child-specific CEE risks and vulnerabilities in relation to the social sectors, and their consideration of children and young people as rights holders who should be involved in policy and action.

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Chapter 2: Methodology

2.1. ANALYTICAL FRAMEWORK

The CLAC interlinkage framework illustrated in Figure 2.1 begins with the major CEE issues identified in Indonesia, elaborating on Figure 1.1. The potential effects of climate change, environmental degradation and energy access are explored and the consideration of children in climate-sensitive policies is evaluated. The next step evaluates the links among CEE issues (i.e., climate sensitivity, gaps, needs and opportunities), policies, programmes, and tools with the six social sectors that are closely targeted to address children's rights and needs and encourage their participation as the drivers of CEE-based actions.

The climate component focuses on understanding the historical and projected climates and their impacts on the sectors affecting children, and the development of climate policies addressing these impacts with a consideration for children. The energy component is explored in terms of general demand, supply and access to electric, fossil and renewable energy, linked with energy security and climate change mitigation. The environment component covers problems such as land degradation and air, soil and water pollution resulting from combustion and chemical waste contamination which harms children's health and development. The measures of environmental quality in Indonesia are reflected in the environmental quality index which measures the quality of air, water and land use. The components of climate, energy and environment for the Indonesian CLAC are illustrated in Figure 2.1.

The CLAC was developed by analysing a compilation of available and accessible documents, data and information on policies and programmes of CEE and social sectors. The study also used primary qualitative data from KIIs and FGDs with stakeholders to bolster, triangulate and validate the analyses, findings and recommendations. The assessment focuses on 1) the extent to which children are considered in existing CEE policies and programmes, and 2) the level of sensitivity and responsiveness of social sector policies to CEE issues related to children, including climate resilience of systems and service delivery. It explores both gaps and needs to assist in proposing strategies and recommendations for mainstreaming children into related climate-sensitive policies and programmes.

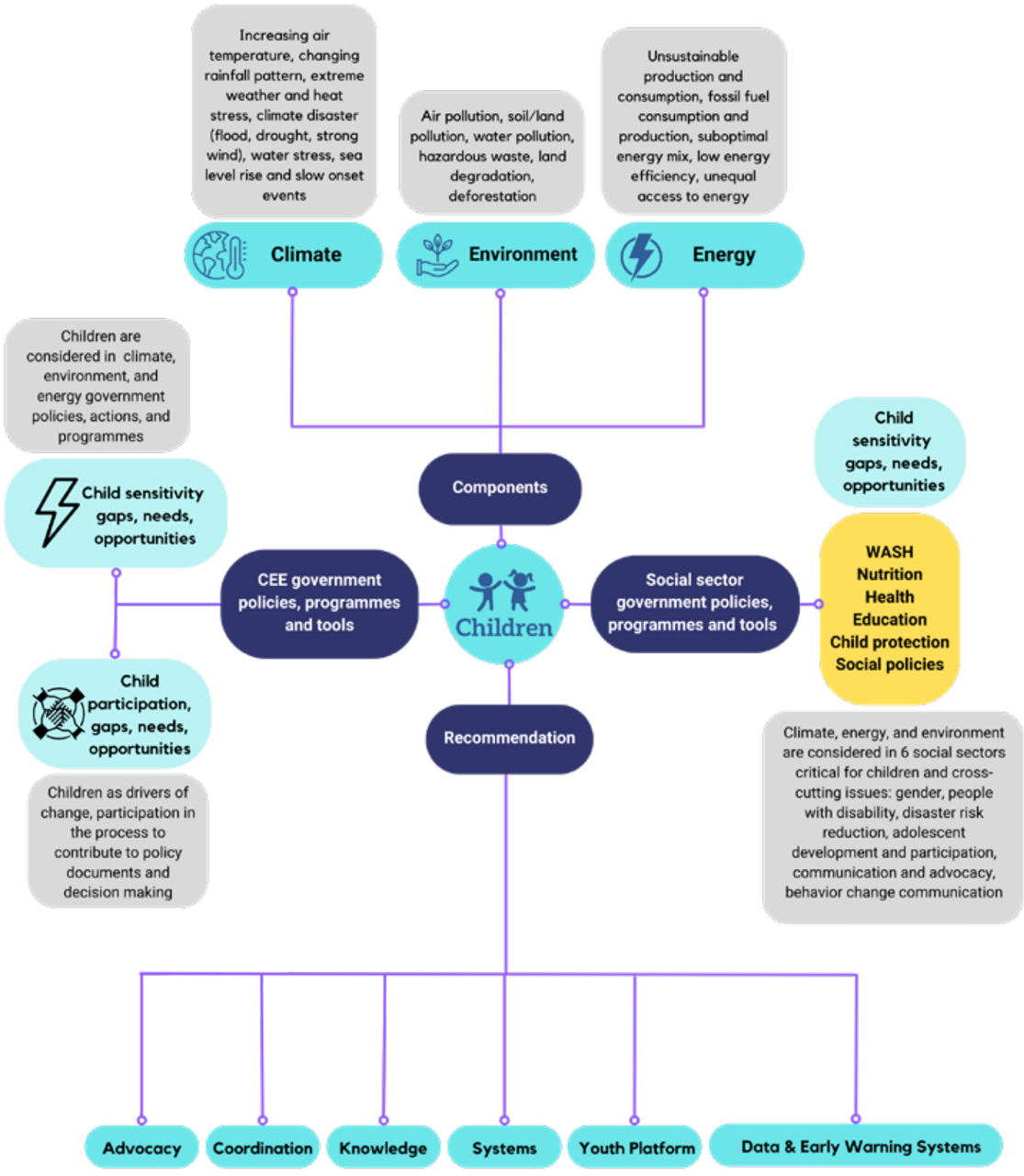
The study reviewed the collected documents then held consultative meetings with stakeholders (ministries and agencies) to obtain inputs and feedback to support the document review. Results of the reviews and stakeholder consultations were compiled using a tabulation matrix to analyse the gaps and needs. After the interviews and desk analysis, FGDs were conducted to formulate strategies, recommendations and the participation of stakeholders in addressing the gaps and needs. The results of the reviews, consultations and FGDs were employed as inputs for conducting synthesis analysis and generating recommendations.

In summary, the activities conducted to develop this study are described below.

1. **Desk Review and Stakeholder Mapping.** The desk review was a two-step process.

    a) A review of information on social and economic situations and conditions of the community, children, CEE issues, and the social sectors. The desk review was completed through secondary analysis of various sources (180 references in total).

Figure 2.1 The Design of CLAC Interlinkage Framework In Indonesia



b) A review of government policies and programmes in 126 compiled documents consisting of laws, presidential regulations, ministry regulations, roadmaps, guidelines, strategic plans, and technical instruction documents from related ministries and agencies (details in Annex 1). The review evaluated the compiled documents using 15 indicators (details in Chapter 5) grouped into the two major components at the heart of the CLAC study: CEE indicators and social sector indicators. The CEE indicators consisted of two categories: those for assessing CEE policy sensitivity to children's rights and climate risks, and children and young people's participation and empowerment. Social sector indicators consisted of one category: the assessment of social sector policy sensitivity to climate, environment and energy risks and vulnerabilities. This review also mapped key stakeholders based on their duties, functions and roles in mainstreaming children's rights and needs into policies and programmes.

2. **KIIs.** The KIIs were conducted with 15 technical and sectoral ministries and agencies and 23 directorates (details in Chapter 7) to validate the desk reviews and identify gaps in mainstreaming children in policies and programmes.
3. **FGDs.** The analysis was conducted based on the results of the desk review and the final three FGDs. The first was with all ministries and agencies involved in the KIIs to explore the gaps, needs and challenges to mainstreaming children into climate-sensitive policies and programmes. The second and third FGDs were with government and non-government stakeholders (civil society organizations, development partners and young people) to discuss findings of the study and to formulate strategies and appropriate recommendations.
4. **Analysis of gaps and challenges.** The analysis was conducted based on the results of the desk review and the final two FGDs. The analysis focused on how to mainstream the needs of children in CEE policies and programmes, particularly in the six social sectors, and how to mainstream CEE in social sector policies.
5. **Identification of strategies and recommendations.** Strategies and recommendations to address the identified gaps and challenges, including recommendations concerning the roles of the stakeholders, were formulated based on the desk review, analysis, and stakeholder consultation (KII and FGD) processes.

2.2 STRUCTURE OF THE INDONESIAN CLAC

This study contains ten chapters. The first five construct the context and baseline to form the second five which discuss strategies and objectives, stakeholders, partnerships and finance, gaps and opportunities, and recommended actions.

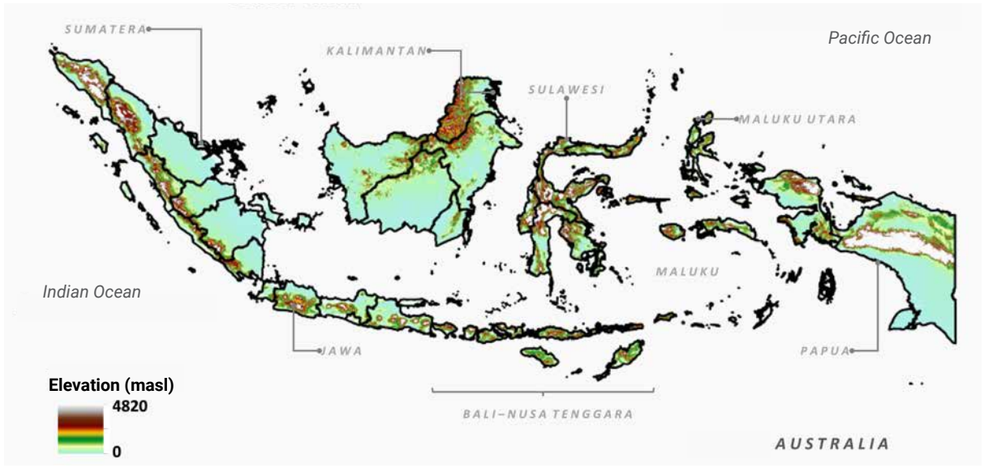
- **Chapter 1: Introduction** describes the background and objective of the CLAC.
- **Chapter 2: Methodology** contains the framework for conducting the CLAC study, methods of data collection and analysis, and the structure of the CLAC.
- **Chapter 3: Indonesia in Brief** provides an overview of the country: the geography, CEE and the socioeconomic situations of people, and particularly children, in Indonesia.
- **Chapter 4: The Impacts of CEE Issues on Children** explains how the CEE issues affect children through six sectors that provide services for children and cross-cutting issues essential for children.
- **Chapter 5: Review of Priorities, Policies and Programmes of the Government of Indonesia** contains the main findings of the desk review and stakeholder consultations, including findings on considerations of children's rights in existing policies and programmes, conditions for inclusion of children's rights, and the right to participate in the related CEE and social sector policies.
- **Chapter 6: Strategies and Objectives** explains strategies and objectives that can be used to strengthen the mainstreaming of children's rights in policies, programmes, and plans related to CEE and the social sectors, based on the gaps and needs identified.
- **Chapter 7: Key Stakeholders, Programmes, Partnerships and Multistakeholder Platforms** maps the identified key stakeholders and their roles, coordination mechanisms to support the strategies to mainstream the sensitivity and inclusivity of children's rights in CEE policies and programmes, and CEE aspects in social sector programmes and actions. The stakeholders include central and subnational government institutions, private sector actors, development partners, media, and civil society, including young people.
- **Chapter 8: Actionable Opportunities for Leveraging Partnerships and Funding** contains opportunities including partnerships and funding to support the implementation of the proposed strategies in mainstreaming children's rights and needs in the CEE and social sector programmes.
- **Chapter 9: Knowledge and Data Gaps** explains the identified gaps in knowledge and data that should be addressed to implement the strategies, stakeholder engagements and partnerships.
- **Chapter 10: Recommendations** contains recommended actions by stakeholders to implement the proposed strategies to mainstream inclusivity of children's rights in CEE policies and programmes, and of CEE issues in social sector policies and programmes, including those supported by the United Nations Children's Fund (UNICEF).

Chapter 3: Indonesia in Brief

3.1 THE INDONESIAN SITUATION

Indonesia is the largest archipelagic country in the world with more than 17,000 islands, an area of about 1.9 million km^2, and the second longest coastline in the world. The country has five main islands (Sumatra, Java, Kalimantan, Sulawesi and Papua), two major archipelagos (Nusa Tenggara and the Maluku Islands), and abundant smaller archipelagos. Indonesia has varied topographical terrains and climates, ranging from sea and coastal systems to peat swamps and montane forests[20]. The Indonesian archipelago is located between the continents of Asia and Australia and between the Indian and Pacific oceans (Figure 3.1). This geographic location determines the climate conditions in Indonesia.

FIgure 3.1 Digital Elevation of Indonesia



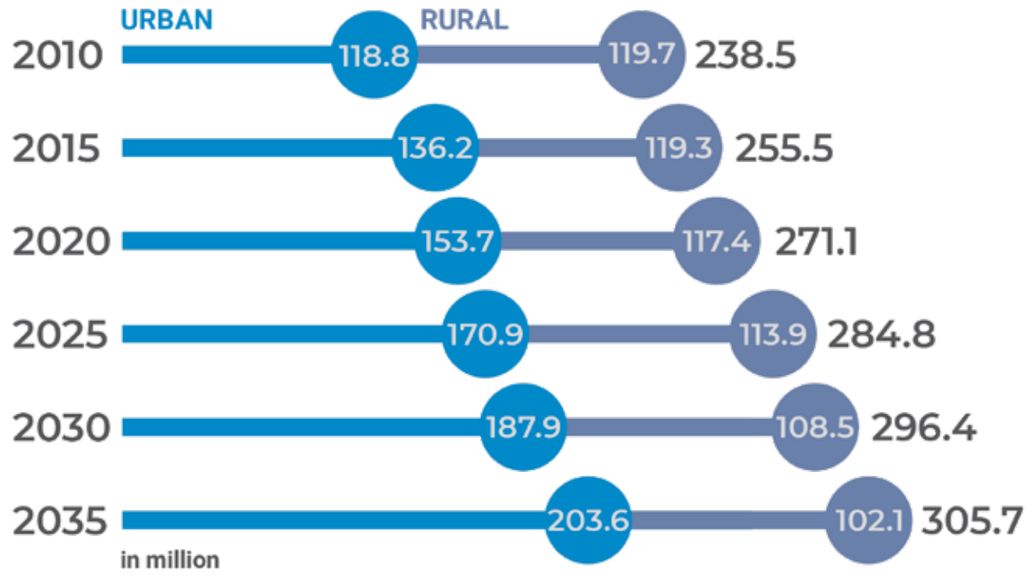
Source: DEMNAS (2018), https://tanahair.indonesia.go.id/demnas/#/

According to Indonesia's National Agency for Meteorology, Climatology, and Geophysics (Badan Meteorologi, Klimatologi, dan Geofisika (BMKG)), rainfall patterns are frequently used to distinguish different climate types in Indonesia. The climate is generally categorised as tropical, with the highest rainfall in low-lying areas and cooler temperatures in the mountainous regions. The wet season occurs between November and April, and the dry season from May to October, commonly known as a monsoonal pattern. This pattern is typically found in most areas in the southern parts of Sumatera, Jawa, Bali and Nusa Tenggara. In addition to the monsoonal climate type, there are equatorial and local climate types. The equatorial type, indicated by two peaks of rainy seasons in March and October, is generally found in the northern parts of Sumatra Island and the central part of Kalimantan. The local type, with a rainfall pattern that is the opposite of the monsoonal type, exists in some areas of Sulawesi, Maluku, and Papua islands. Based on historical data of rainfall averages (1991-2020), the lowest rainfall occurs during the dry season, with monthly rainfall averages of around 160 mm to 180 mm. The higher rainfall occurs during the wet season, with monthly rainfall averages of more than 300 mm.

There is also variability in rainfall totals by elevation. The annual rainfall averages in the lowlands are about 1,800 mm to 3,200 mm, which is lower than the mountainous regions where rainfall totals can reach 6,000 mm. In contrast to rainfall, Indonesia's average monthly air temperature tends to be constant, around 25°–26° C. The air temperature varies by elevation, which is about 23° C in the mountainous areas and 28° C in the coastal regions. The El Niño Southern Oscillation also primarily influences the Indonesian climate, causing drier conditions during El Niño and wetter conditions during La Niña[21].

The Republic of Indonesia is currently the fourth most populous nation in the world. In 2020 the population was about 270.2 million, with an annual population growth rate of about 1.25 per cent from 2012 to 2020. It is estimated that the total population will reach 335 million by 2050. The growing population is gravitating to urban areas (Figure 3.2). The urban population reached 56.7 per cent (136.2 million to 271.1 million) in 2020, with a steady increase in urbanisation from 2010 to 2020. The urban population is projected to reach about 66.6 per cent and 72.9 per cent by 2035 and 2045 respectively[24]. This could also be related to the potential migration of coastal communities (with a coastal and small island population estimated at 120 million people by 2022[25]). Coastal areas are also facing the threats of economic downturn and food crises[26].

Figure 3.2 Total Population and Projected Population in Indonesia



Source: compiled from BPS (2021e)[22] and Jones GW (2014)[23]

According to World Bank (2022), Indonesia is the 10th largest economy in terms of purchasing power parity worldwide. Based on data from the Central Bureau of Statistics (CBS) (Badan Pusat Statistik/BPS), the country's GDP was recorded at IDR 62.2 million (US$ 4,349.5) per capita in 2021. This figure is categorised as a lower-middle income country in 2020 and 2021 according to the World Bank classification[27]. The Indonesian economy in 2021 grew by 3.69 per cent, higher than its achievement in 2020 when it experienced a contraction of 2.07 per cent. The country's highest production growth occurred in the Health Services and Social Activities Business sector at 10.46 per cent. Meanwhile, in terms of expenditure, the export component of goods and services achieved the highest growth at 24.04 per cent[28]. Indonesia's inflation rate is in the low category (5.71 per cent)[29] and its Gini ratio index is 0.381[30], categorised as low income disparity.

Population and economic dynamics are determinant factors that significantly influence the amount of GHG emitted by Indonesia. Climate Watch data by WRI explains that Indonesia is also contributing to the increase in global GHG emissions. Based on MoEF GHG inventory, GHG emissions in Indonesia increased every year from 2000 to 2019[31]. The level of emissions in 2019 was 1,866,552 Gg CO_2e. It increased by 680,324 Gg CO_2e compared to the emission level in 2000 and increased by 250,983 Gg CO_2e compared to the 2010 emission level (the base year for calculating GHG emissions targets expressed in NDC). The forestry and energy sectors contribute the most to the GHG emissions of Indonesia, these being higher than emissions from industry and the waste and agriculture sectors, with forest fires and dependence on fossil-based energy generally considered significant contributors to GHG emissions. According to the Climate Change Performance Index (CCPI) released in 2022, Indonesia performs poorly in reducing GHG emissions[32].

The country's social characteristics can be seen through the Human Development Index (HDI) (Indeks Pembangunan Manusia (IPM)), poverty rate and undernourished population. The country's HDI was 72.29 in 2021 (categorised as high development), with a poverty headcount ratio at the national poverty line of 10.14 per cent in March 2021 and 9.71 per cent in September 2021 (CBS). According to United Nations Development Programme (UNDP), Indonesia is a country with a high level of human development, ranked 107th out of 189, with a score of 0.718 in 2019 as included in the Human Development Report (HDR)[33]. Indonesia's poverty rate ranked 143rd out of 172 countries and scored 9.4 per cent in 2019, based on World Population Review data[34]. The undernourished population was at 9 per cent for 2017-2019 and 6.5 per cent in 2019 (see Table 3.1). This figure ranks Indonesia with a lower undernourished population, at 106th out of 209[35]. The combination of geographic, social and economic factors contributes to the country's vulnerability to the impacts of global climate change[21]. Indonesia's Gender Inequality Index ranked it 121 out of 162 countries (first ranking is the country with the highest inequality), giving the country reasonably low gender inequality compared to other countries[36]. Indonesia had a Gender Development Index (GDI) of 91.27 in 2021, which shows that the development of men and women in Indonesia is drawing closer to equal[37]. However, Indonesia ranked 107th out of 167 countries, with its highest gender development score of 0.940.

Climate related hazards (e.g., floods, landslides, drought) influence risk level[38]. Indonesia was ranked 14th out of 180 countries in 2019 in the GCRI which analyses and ranks countries' level of exposure and vulnerability to extreme weather events; countries with higher risks are positioned higher in the ranking[7] floods, heat waves etc.. Indonesia was ranked 103rd most ready out of 181 countries in the 2020 Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index, which measures a country's vulnerability to climate change and other global challenges, and its readiness to improve resilience[39]. Indonesia's vulnerability and readiness scores based on the ND-GAIN assessments are 0.446 and 0.381, which describe the country as 'on the road to responding effectively to climate change but the adaptation needs and urgency to act are greater'[39].

Indonesian children are vulnerable to the impacts of climate change, as indicated by the country's ranking on the CCRI[14] (46th out of 163 countries). The MoEF, as reported in the NDC Roadmap on Adaptation, projected that by 2050 the impacts of climate change on necessities (food, energy, water and environmental health) would cost between 0.66 per cent and 3.45 per cent of Indonesia's GDP[10], with the poorest bearing the brunt of this burden. Children will increasingly face environmental and climate related risks that will affect their health, food security and access to nutritious foods, safe water and sanitation facilities, and their future livelihoods. In addition, children may face many psychosocial impacts following a disaster, such as emotional stress and even post-traumatic stress disorder. This makes it crucial to strengthen the resilience of the poorest children and families so that they not only absorb but also adapt to the new climate regime. The summary of the country's characteristics indicated by the indices and numbers is presented in Table 3.1.

Table 3.1 The country's characteristics indicated by key socioeconomic indices and numbers

Indicator	Value	Source	Note
GDP	USD 1,058 trillion (2020) USD 1,059 trillion (2021)	CBS (BPS)[40]	An increase in GDP indicates an increase in the economy
Inflation	5,71% (y-on-y October 2022)	CBS (BPS)[29]	< 10%: Low inflation 10%-30%: Moderate inflation 30%-100%: High inflation > 100%: Very high inflation
Gini Ratio Index	0,381 (2021)	CBS (BPS)[30]	1: income inequality 0: income equality
HDI	72,29 (2021)	CBS (BPS)[41]	IPM > 80: Very high HDI IPM 70-79: High HDI IPM 60-69: Moderate HDI IPM < 60: Low HDI
Urban population as % of total population	56,7% (2020)	CBS (BPS)[24]	Higher percentage means more people live in urban areas
Poverty headcount ratio at national poverty lines	10,14% (March 2021) 9,71% (September 2021)	CBS (BPS)[41]	Higher percentage means more people live in poverty

Infant mortality rate (between Age 0 and 1)	1,9% (2015 – 2020)	FAO, IFAD, UNICEF, WFP, WHO[42]	Higher percentage means more infant deaths per 1,000 births
under 5 years mortality rate	23 per 1000 live births (2020)	United Nations Inter-agency Group for Child Mortality Estimation (UN IGME)[39]	Higher numbers indicate more under 5 years deaths per 1,000 births`
Population undernourished	9,0% (2017-2019) 6,5% (2019)	FAO, IFAD, UNICEF, WFP, WHO[42] World Bank[35]	Higher percentage means more of the population is undernourished
Stunting prevalence	24,4% (2021)	Indonesian Nutrition Status Survey (SSGI) (Kemenkes)[43]	Higher percentage means more of the population is stunted
Gender Inequality Index (UNDP)	0,480 (rank 121st of 162) (2019)	HDR Report (UNDP)[44]	1: Gender unequal 0: Gender equal First ranking shows the country with the highest inequality
Gender Development Index (GDI)	91,27 (2021) 0,940 (rank 107th of 167) (2019)	CBS (BPS)[45]HDR (UNDP)[46]	The closer to 100 (BPS) or 1 (UNDP), the more equal the development
GCRI	Rank 14th of 180 (2019)	Germanwatch[7]	The first rank given to the country with the highest climate risk
ND-GAIN Country Index	Rank 103rd of 181 (2020)	University of Notre Dame (2020)[39]	The first rank given to the least vulnerable country
Children's Climate Risk Index	Rank 46th of 163 (2021)	UNICEF[14]	The first rank given to the country with the highest climate risk for children
GHG emissions	Rank 5th of 143 (2019)	Climate Watch Data by WRI[47]	The first rank given to the country with the largest contribution to global GHG emissions

3.2 CHILDRENS' SOCIOECONOMIC SITUATION

Indonesian children (aged 0-18 years) comprise approximately 32.81 per cent (boys 51 per cent; girls 49 per cent) of the total population, which equates to around 80 million people. Most Indonesian children live on Java Island (52.2 per cent), and the remainder (47.8 per cent) are distributed across all provinces outside Java. The highest population of children is in the Province of West Java (15.4 million), followed by East Java (10.6 million) and Central Java (9.9 million). In contrast, the fewest children are in North Kalimantan (0.26 million), West Papua (0.34 million), and Gorontalo (0.39 million). The provinces with the largest proportion of children are West Nusa Tenggara (40.5 per cent), Southeast Sulawesi (38.9 per cent), and North Maluku (38.7 per cent). The smallest proportions are in Yogyakarta (25.0 per cent), East Java (26.8 per cent), and Bali (28.1 per cent). Child density is based on the ratio of the total population to the area size. On average, 1 square kilometre of territory in Indonesia is inhabited by 44 children. The province with the highest child density is DKI Jakarta, where each square kilometre is inhabited by 4,521 children. There are several provinces where child density is very low (Figure 3.2), such as West Papua, North Kalimantan and Bengkulu, which each have 3 children per square kilometre[18,24,48].

Based on the 2010 and 2020 CBS Population Census, the number of adolescents (aged 10–19 years) increased from 43.6 million to 44.5 million. However, the proportion of adolescents compared to the total population decreased from 18.3 per cent to 16.5 per cent over the same period. Indonesia is predicted to experience a demographic bonus in 2020–2030, with a peak in 2025[49]. This is a condition where the dependency ratio is low, meaning that the productive population of working ages (15–64 years) will be greater than the unproductive population, thereby increasing economic benefits[49]. In contrast, the dependency ratio for young people is higher than for older people, i.e., the unproductive population aged under 15 years is bigger than the unproductive population aged over 64 years[49]. This situation requires the government to improve health, education and child protection facilities so that children can access suitable employment when they reach working age[50]. The spatial distribution of the dependency ratio for children is depicted in Figure 3.3. The province with the highest child dependency ratio is East Nusa Tenggara at 46 per cent; the lowest is Yogyakarta at 29.7 per cent. The high dependency ratio in East Nusa Tenggara is related to the proportion of children (almost half the province's population[24]).

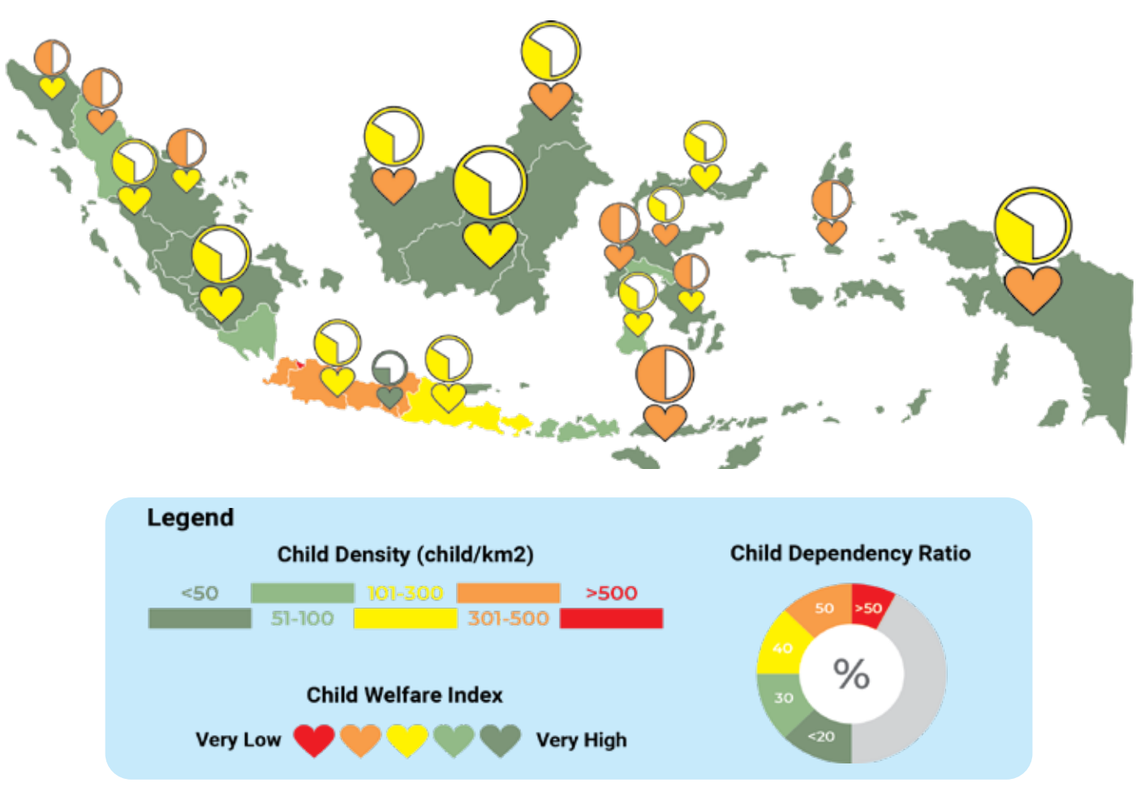
In 2020, 10.14 per cent of the population was living below the poverty line[38]. Children are considered the most affected by poverty compared to other age groups, given that they account for about 40 per cent of the low income population[18]. In 2018, about 12.3 per cent of Indonesian children lived below the poverty line[18]. The province with the highest proportion of children from low-income families is Papua (33.9 per cent), followed by West Papua (26.5 per cent) and East Nusa Tenggara (25.4 per cent). The three provinces with the lowest percentage of poor children are Bali (4.6 per cent), South Kalimantan (5.6 per cent) and Central Kalimantan (6.4 per cent)[48].

Unfortunately, the economic shocks caused by COVID-19 are projected to increase child poverty by 13.5 per cent, with the baseline (i.e., no COVID-19 scenario) estimated to decrease child poverty by 11.9 per cent[51]. One in four Indonesian children is vulnerable to poverty, and the poverty rate of children in rural areas is higher than in urban areas. There are various forms of child poverty, including deprivations in electricity and water, health, nutrition, education, protection and shelter[18].

3.3 MAINSTREAMING OF CHILDREN'S RIGHTS IN POLICIES

Indonesia has a solid legal basis for implementing actions to address children's well-being. The current state of child welfare is an important marker for the country's progress in realising the Sustainable Development Goals (SDGs) in 2030. In 2002, Indonesia put into effect Law No. 23/2002 on the protection of the rights of children, which was amended in 2014 by Law No. 35/2014. The law protects children's rights, including their rights to life and growth, identity and citizenship, and legal protection. In addition, ministerial regulations, particularly those issued by MoWECP, have been enforced. Examples are KemenPPPA Regulation No. 5/2011 on policies to fulfil children's education rights, KemenPPPA Regulation No. 13/2020 regarding protecting children from gender-based violence (GBV) in disasters, and KemenPPPA Regulation No. 18/2019 on organizing children's forums. The government has also developed a National Action Plan on Child-Friendly Cities and Municipalities 2021-2024.

Figure 3.3 Distribution of child density, child dependency ratio, and child welfare composite index in Indonesia



Source: compiled from many sources (BPS (2021)[22], BPS SP2020 data[52], KemenPPPA (2018)[53].

To evaluate the fulfilment of children's rights, the Indonesian government, through MoWECP, has developed indicators of child welfare that cover five dimensions of children's rights (i.e., survival, protection, development, participation and identity). These indicators are known as the Child Welfare Composite Index (Indeks Komposit Kesejahteraan Anak). Nationally, Indonesia scored 70.5 out of 100 in 2018, indicating that the fulfilment of children's rights was classified as moderate on the following scale: very low - fewer than 50; low - 50-66.6; moderate - 66.7-79.9; high - 80-89.9; and very high - 90 and above. The province with the highest score is Yogyakarta (82.9), and the lowest is Papua (56.7) (Figure 3.3). Based on the 2018 scores, children's participation in the development plan is very low (approximately 47.5). This may be due to the unequal understanding among stakeholders of the importance of inviting and listening to children's voices at every stage of development.

Government programmes targeted at children offer a tremendous opportunity to strengthen children's participation as agents of change:

1. Development of Child-friendly Districts/Cities (Kota Layak Anak (KLA)) is a programme developed by MoWECP since 2006 which aims to fulfil rights and protect children.
2. The Family Learning Centre (Pusat Pembelajaran Keluarga (PUSPAGA)) is a preventive and promotive family service as a 'place of learning' to increase the role of the family in child rights-based care.
3. The Child-Friendly Playroom (Ruang Bermain Ramah Anak (RBRA)) is a space that accommodates children's activities and enables them to play safely and comfortably, protected from violence and other dangers and not in discriminatory situations and conditions.
4. The Prosperous Child Village Model is an effort to fulfil children's rights to essential health and welfare and prevent stunting through strengthening the role of families, as well as increasing knowledge and skills in food and nutrition management.
5. The Women and Child-Friendly Village Programme (Desa Ramah Perempuan dan Peduli Anak) Ministry of Women Empowerment and Child Protection (MoWECP) and Ministry of Villages, Development of Disadvantaged Regions and Transmigration (MoV/KemenDesa PDTT).
6. Health Facilities with Child-Friendly Services (Pelayanan Ramah Anak (PRA)) is the provision of child-friendly services at public health centres (Pelayanan Ramah Anak di Puskesmas (PRAP)).
7. The Child-Friendly Information Centre (Pusat Informasi Sahabat Anak (PISA)) is an information centre with a child-friendly service approach and a focus on providing integrated information needed by children.
8. The Smart Indonesia Programme (Program Indonesia Pintar (PIP)) empowers the poor in terms of education, aiming to provide grants to students.
9. The Child Forum (Forum Anak) bridges communication and interaction between the government and children throughout Indonesia to fulfil children's participation rights.

3.4 OVERVIEW OF CLIMATE, ENVIRONMENT AND ENERGY SITUATION AND TRENDS

3.4.1 CLIMATE TRENDS AND PROTECTION

Climate variation across Indonesia generally refers to differences in air temperature and rainfalls. According to the Köppen climate classification, most parts of Indonesia are climate type Af (tropical rainforest). However, some areas, such as Nusa Tenggara, have dry climates (As/tropical dry savanna and Cs/temperate dry summer). Indonesia's mountain areas are mostly climate type Cf (humid temperate)[a]. Indonesian climates are classified into three types of rainfall patterns: monsoon, equatorial and local[55]. The monsoon type has a rainy season in December, January and February (DJF), whereas the dry season occurs in June, July and August (JJA). The remaining six months are the transitional periods. The areas of monsoonal climate are the island of Java and some parts of the islands of Sumatra and Kalimantan. Two rainfall peaks, which occur in March and October or at the time of the equinox, indicate the equatorial type. These climatic regions include the western part of Sumatra Island, northern Kalimantan and parts of Papua. The local type has a different rainfall pattern from monsoon and equatorial types, covering areas in Sulawesi, Maluku and parts of Papua (Figure 3.4).

CLIMATE TREND

The World Meteorological Organization defines climate as weather conditions over at least 30 years. According to observed data of the BMKG for 1981–2018, the average minimum and maximum air temperatures across the country show a positive trend, evident with a variation of increasing rate across locations, about 0.01-0.06° C per year, with an average of 0.03° C each year[55]. Generally, air temperature averages increased by about 0.9° C in the past 30 years[56].

As with air temperature, rainfall trends varied across the country from 1981 to 2018[57]. The rainfall trend is presented in four (4) categories according to its intensity: intensity above 1 (purple line), 20 (green line), 50 (yellow line), and 100 (red line) mm/day in a year. Based on rainfall data for the 1981–2018 period, Indonesia's rainfall trend tends to decrease for each category, indicating that rainfall is decreasing. However, some areas such as the southern part of Sulawesi, Maluku, and North Maluku (the northern part of Indonesia) have positive trends of varying magnitude. This decreasing trend is in line with the report of World Bank Data, which shows that annual rainfall in Indonesia has decreased by 2–3 per cent since 1990[58,64]. This new trend shows that the rainy season is getting wetter, and the dry season is getting drier.

CLIMATE PROTECTION

The observed climatic trends warrant the need to project future climates. Air temperature averages were generally between 25° C and 26° C for the 1991–2020 period. Seasonally, the average temperature in the rainy and dry seasons are similar. However, there is a tendency for air temperature in dry months (JJA[b]) to be higher than in wet months (DJF[c])[10] except in Papua Island, Maluku, North Maluku and parts of western Nusa Tenggara. This condition can also be influenced by local rainfall patterns that occur in these areas. All regions of Indonesia are projected to experience an increase in air temperature in both DJF and JJA months. Projections of average air temperatures for the period of 2021–2050 (compared to the historical period of 1991–2020) show that air temperature changes will occur in the provinces of Riau, South Sumatra, Lampung, the northern coast of Java, West Kalimantan, Central Kalimantan, and Papua[10]. The average air temperature increased in each region with the highest increase recorded in Nusa Tenggara at 1.6-2.0° C. The maximum air temperature is projected to increase by 2.25° C in 2100 (Figure 3.4), so the daily maximum temperature will be higher, which can make normal life challenging.

The observations of BMKG show that eight regions currently have the highest average temperature of 30° C (Figure 3.4). This indicates that the maximum air temperature will also be higher. Results of the projection also show that these areas, together with some parts of Papua, will have an average maximum temperature of more than 35° C in 2021–2050. These areas are also projected to have more days with maximum temperatures in MAM[d], JJA, and SON[e] months (transitional season and dry season) compared to other regions[10]. A heat index of 35° C is often highlighted as a threshold beyond which conditions become highly detrimental to human health[21]. This higher temperature will contribute to an increased risk of heat stress in the future which will significantly affect the metabolism of living beings.

From 1991 to 2020, the driest areas in the dry season (JJA) included most of the islands of Java, Bali and East Nusa Tenggara. Areas with high rainfall in the wet season (DJF) included Central Java, northern Kalimantan, and parts of Papua. Indonesian regions that experienced a reasonably high decrease in rainfall were northern Bengkulu, the central and northern part of West Kalimantan, North Kalimantan, and the border areas of Central and East Kalimantan, Maluku, and most of Papua[59].

For the projection period of 2021–2050, parts of the northern Sumatra Island are expected to have lower rainfall during the rainy season (DJF) compared to the baseline period of 1991–2020. However, most areas in this region are expected to have a drier dry season (JJA) compared to the 1991–2020 period[10]. As a result, rainfall totals for DJF months for the 2021–2050 period in Sumatra are estimated to decrease by 10 per cent from the rainfall totals for the baseline 1991–2020 period. In Java Island, the rainfall totals in the DJF months will decrease up to 40 per cent. Meanwhile, there is a chance of rainfall totals increasing by 20 per cent for the DJF months in Kalimantan (Figure 3.4). These projected figures show that changes or shifts in rainfall patterns in all regions of Indonesia are still very likely to occur in the future[10].

CLIMATE EXTREMES AND DISASTERS

a A more detailed explanation of each climate type can be found at https://www.mindat.org/climate.php

b The months of June, July and August (JJA) are usually the peak of the dry season in Indonesia

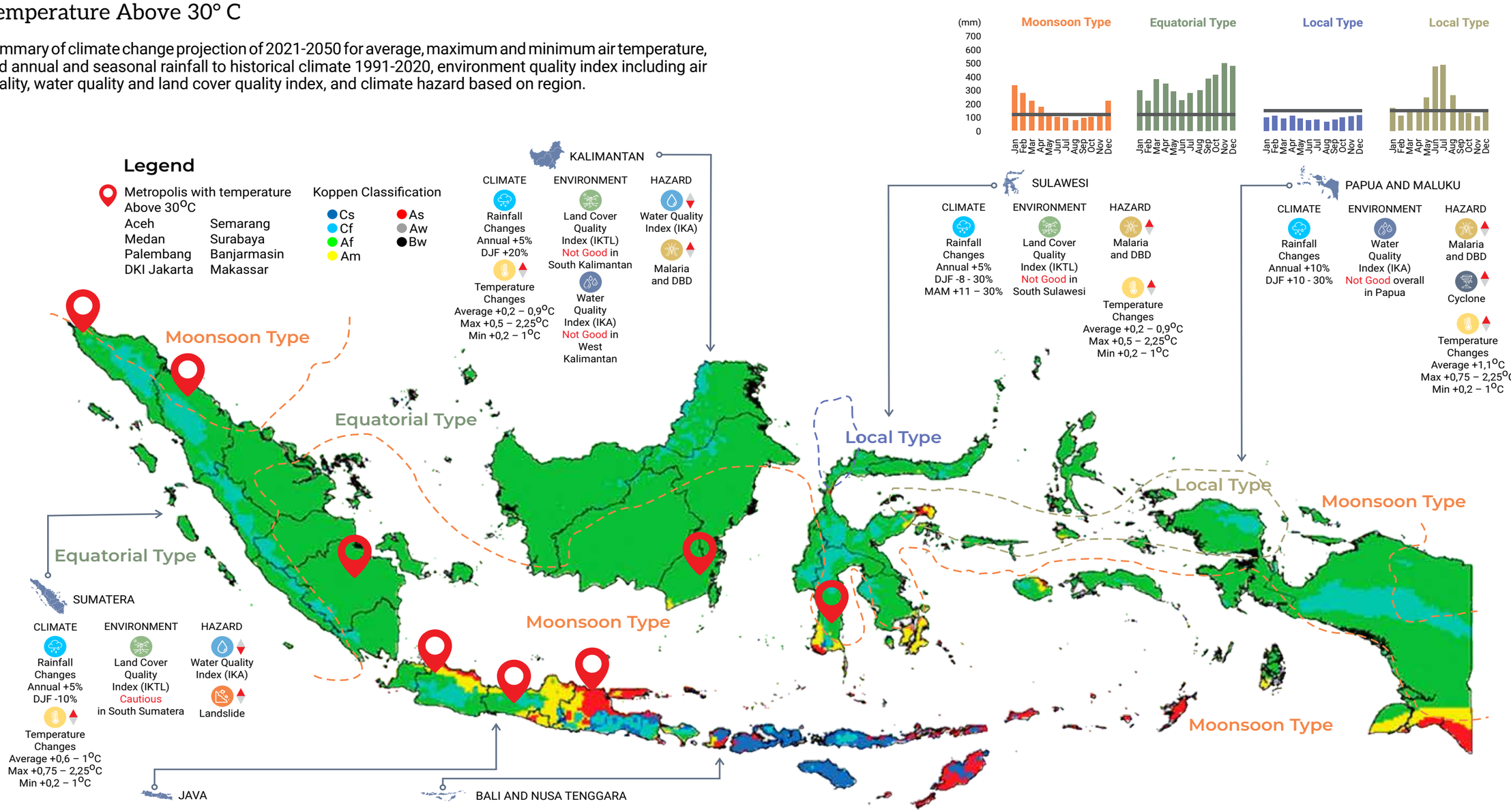
c The months of December, January and February (DJF) are usually the peak of the rainy season in Indonesia

d The months of March, April and May (MAM) are usually the transition from the rainy season to the dry season

e The months of September, October and November (SON) are usually the transition from the dry season to the rainy season

Figure 3.4 The Division Of Climate Types Based On Köppen Classification And Rainfall Averages, Cities With Average Temperature Above 30° C

Summary of climate change projection of 2021-2050 for average, maximum and minimum air temperature, and annual and seasonal rainfall to historical climate 1991-2020, environment quality index including air quality, water quality and land cover quality index, and climate hazard based on region.



Overall in Indonesia

- DKI Jakarta has the worst index (67) and categorized as "Not Good".
- Yogyakarta has the worst index (35) and categorized as "Bad"
- Corn supply decreased, and crop failure (puso) cases increased
- Devastate mangrove habitat
- DKI Jakarta has the worst index (24) and categorized as "Cautious"
- Nationally, Environmental Index in Indonesia categorized above "Pretty Good"
- Erosion rate and ocean acidification in coastal area increased
- Increased sea level rise and sea surface salinity decreased

Source: adapted and modified from many sources (BMG (2007)[54], MoEF (2020b)[10], MoEF (2019)[2], BNPB (2022)[8], MoEF (2020a)[55], World Bank & ADB (2021)[21], UNU-EHS (2022)[53]).

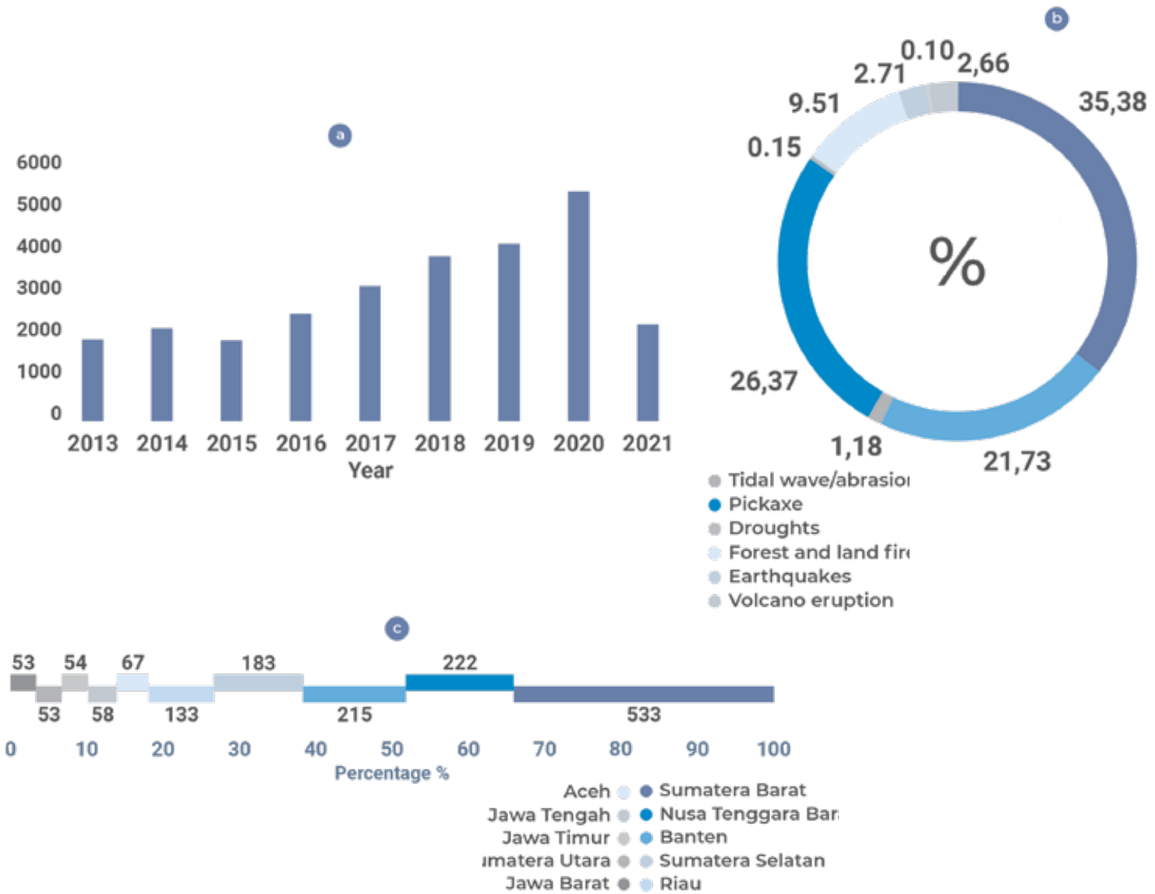
The intensity of daily extreme rainfall events due to changes or shifts in rainfall patterns (time, frequency and intensity) appears to increase with temperature. These events can trigger an increase in extreme weather events[21] which could trigger climate related disasters. For instance, high air temperature and low rainfall could lead to droughts, heat waves and forest fires. At present, the probability of an annual severe meteorological drought is only around 4 per cent (defined by Standardized Precipitation Evaporation Index value less than −2, which indicates extreme drought), implying that the probability of a severe meteorological event at this time is extremely low[21]. It is also projected that there will be a slight increase in the duration of dry spells with about two days added to consecutive days without rain[60]. The current median probability of a heatwave is around 2 per cent[21] and is projected to have a longer duration in the future[60]. Heatwaves are more common in the middle to high latitudes[61] and heat stress comes in the form of urban heat island, which occurs in big cities in Indonesia, such as Banda Aceh City, DKI Jakarta, Bandung, Semarang and Surabaya[62,63]. The difference in air temperature in urban areas is 1.5-3.0° C compared to the surrounding rural areas[63]. Forest fires usually occur in the dry season and are associated with persistent drought and El Niño[21]. However, forest fires in Indonesia have recently occurred in non-drought season (normal-wet conditions) due to the continuing warming trend, which causes high levels of evapotranspiration[64].

Higher rainfall intensity (generally more than 100 mm/day) during the rainy season can trigger floods and landslides[65]. It is projected that by 2050 there will be an increase in the frequency (3–23 per cent) and intensity (2–7 per cent) of heavy rainfall events, which in turn will increase the risk of floods and landslides[60]. Both floods and droughts will significantly impact the availability of clean water and the emergence of pests that cause disease. These disasters can occur in various regions depending on their conditions and characteristics (Figure 3.4). Sumatra Island, for instance, is threatened by increased landslides and decreased water quality due to its mountain ranges. Java Island, a highly populated and urbanised area, will be threatened by increased flooding and droughts due to many lowlands coupled with heavy monsoon rain, resulting in decreased water quality and increased vector-borne disease (dengue and malaria). Bali and Nusa Tenggara both have dry climates and are therefore threatened by increased floods and drought. Kalimantan Island, which has an abundance of forests, is also threatened by decreased water quality and increased vector-borne diseases. Strong winds (more than 63 km/h) rotating around its centre will become tropical cyclones.

Indonesia is classified as having a high cyclone hazard with more than a 20 per cent chance of potentially damaging wind speeds in the next ten years[66]. In the past five years, several cyclones have hit different parts of Indonesia. Cyclone Cempaka impacted the islands of Java and Bali in 2017 with wind speed reaching 65 km/h (40 mph)[67]. Cyclone Dahlia formed near Java in 2017 with a peak wind speed reaching 95 km/h, triggering an increase in rainfall of 750 per cent from the historical average in the Gunung Kidul region, Yogyakarta[68]. Cyclone Savannah significantly impacted Java and Bali in 2019, with the highest winds reaching 175 km/h (110 mph)[69]. Cyclone Wallace sustained winds of 45 km/h (28 mph) reported on East Nusa Tenggara; it brought rainfall and high waves to parts of Indonesia in 2019[70]. Cyclone Lili affected Maluku in 2019 with the highest sustained wind in 10 minutes, reaching 75 km/h (45 mph)[71]. Cyclone Seroja in 2021 brought historic flooding and landslides to portions of southern Indonesia and hit at tropical storm level (maximum wind speed of 65–85 km/h)[72].

According to the 2022 INFORM Risk Index, Indonesia is among the top third of countries with particularly high exposure to climate related disasters such as flooding and tropical cyclones[73]. About 80 per cent of all disasters from 1998 to 2018 were dominated by hydrometeorological events which consist of floods (39 per cent), heavy winds/storms (26 per cent), landslides (22 per cent), drought (8 per cent), and others (5 per cent)[74]. Going by the DIBI released by the NDMA, the incidence of disasters in Indonesia has increased annually from 2013 to 2021 (Figure 3.5a). The most frequent climate related disaster is floods, with about 722 out of 2,029 incidents (approximately 35.6 per cent) in 2021 (Figure 3.5b). The areas that experienced the most disaster incidents in 2021 were West Java with 533 incidents, North Sumatra with 222 incidents, and East Java with 215 incidents (Figure 3.5c)[8].

Figure 3.5 a,b,c Disaster events in Indonesia for the period of 2013-2021 (a), the proportion of disaster events by type of disaster in 2021 (b), total disaster events by province in 2021 (c).



Source: DIBI BNPB

SLOW ONSET CHALLENGES

Slow onset is defined as a threat that evolves gradually from incremental changes in climate occurring over many years, or from an increased frequency or intensity of repeated climate related events[75]. Slow onset events that occur in Indonesia are described below.

- **Sea level rise**

  As an archipelago with the second longest coastline in the world, Indonesia faces threats from climate-induced sea level rise exacerbated by land subsidence and groundwater exploitation. From sea level rises (SLR) to coastal erosion and floods, coastal populations are exposed to risks such as permanent inundation of settlements and salination[76,77]. Since 1993, the sea level has risen by more than 12 cm in Indonesian waters[78]. The average SLR of Indonesian waters was 7.2 cm from 2004 to 2013 against the baseline of 1993 to 2003, when the mean rate of SLR increased from 0.7 cm/year to 1.1 cm/year from 2003 to 2013, continuing up to the last decade. The highest rate of SLR change occurred in the Pacific Ocean north of Papua at 1.7 cm/year, and the lowest SLR change happened in the south of Java and west of Sumatra, ranging from 0.4 cm to 1.2 cm/year[79]. If this trend continues, the SLR is expected to increase on average between 21 cm and 33 cm in 2030 and reach 35–55 cm in 2050 relative to sea level in 2000[78]. This rate of increase is likely due to changes in the thermal expansion seen from the rise in sea surface temperature (SST). The median SST of Indonesian waters ranges from 24–30° C, with an average of 28.7° C, therefore the SST is likely to increase by 0.6°–0.7° C in 2030 and by 1°–1.2° C by 2050[79]. If every 1° C increase in SST raises the sea level by 20 cm to 40 cm, the sea level will increase by 45 cm to 90 cm based on the 2.2° C increase in SST in 2100[78].

- **Ocean acidification**

  Changes in SST can contribute to a change in the partial pressure of CO_2, which will later change the air-sea flow of CO_2 or vice versa. Ocean acidification is caused by atmospheric CO_2 affecting the carbonate system of seawater[80]. The average annual pH value of seawater in Indonesia varies based on location. The annual average pH of eastern Indonesian waters bordering the Pacific Ocean is 7.9, reaching 8.1 to the south. In the western area of Sumatra, the average pH is 7.9 and it gets higher towards the south of Java and the Indian Ocean, reaching 8.2. The average pH in the Malacca Strait and the Karimata Strait is relatively lower than in other areas (ranging from 7.7 to 7.9). Monsoons strongly influence pH variations, which indirectly affect seawater mass transport because it affects the corrosion of the ship's steel plate material[81]. The pH of the low latitude ocean is projected to decrease significantly to 7.7 (under the Representative Concentration Pathways (RCP) as the future scenario for climate change projection (RCP 8.5 scenario), pH 7.8 (RCP 6.0), pH 7.9 (RCP 4.5), and pH 8.07 (RCP 2.0) in 2100[82].

- **Salinisation**

  Surface salinity generally follows the characteristics of SST and can be an indication of freshwater flux, as well as precipitation. Sea surface salinity tends to decrease at a rate of -0.35±0.2 Practical Salinity Units (PSU) per decade. The highest surface salinity changes occurred on the northern coast of Australia, the southern part of the Java Sea, the west and east of Sumatra, the Gulf of Tomini, the Strait of Malacca, and the Gulf of Thailand. Surface salinity will continue to decline from 33.2 PSU in 2000 to 32.1 PSU in 2040[78]. It is estimated that acidification of the sea will continue because a decrease in salinity goes along with the increase in SST associated with the lowering of seawater pH[79].

3.4.2 ENVIRONMENTAL CHALLENGES

The environmental quality in Indonesia is measured using the environmental quality index based on data collected from cities in all provinces of Indonesia[2]. For the period between 2015 and 2019, the environmental quality index was developed based on three indices: water quality index; air quality index; and land cover quality index. Each is measured on a scale from 0 (lowest) to 100 (highest). The environmental quality index score in 2019 was a reasonable 66.55 nationally. At the provincial level, however, most provinces in the eastern part of Indonesia (Papua Barat, Papua, East Kalimantan, Central Sulawesi and Maluku) had the highest environmental quality index (more than 80) in 2019, while provinces closer to the capital city of Indonesia (DKI Jakarta, Banten, West Java), Lampung and Yogyakarta had a relatively lower index, with scores of less than 60[2]. This index showed the need for improved environmental quality in the urban and densely populated areas to support the health and general well-being of people. Nevertheless, the latest information from MoEF indicates an increase to 70.27 in 2020[1] and 71.43 in 2021[3].

Delineation of each environmental quality index component shows that water quality is considered poor, with a score of 50–53 because 84 per cent of observed rivers are contaminated. In the five years between 2015 and 2019, more than half of the 34 provinces in Indonesia did not achieve the national targets for water quality[2] (i.e., 16, 17, 17, 22, and 19 provinces from 2015 to 2019 respectively). This condition is a concern because only 16 per cent of 725 sampling locations met the national water quality standard. The rest are polluted, with the distribution of areas categorised into mildly polluted (65 per cent), moderately polluted (12 per cent) and heavily polluted (7 per cent)[2]. Because water pollution is connected to issues of waste management and floods, the quality control efforts should therefore focus on regions with a low water quality score of less than 50, including Yogyakarta, West Nusa Tenggara, Jakarta, Banten, North Sulawesi, West Java, Papua, Bengkulu and West Kalimantan (Figure 3.4)[2].

On the other hand, the air quality index score indicates that the annual national target was achieved in the reporting period of 2015–2019, with scores of 82–87 (Figure 3.4). Although the water quality index shows a high score, the quality of breathing air in Indonesia is not entirely represented by this index because the water quality index assessment still uses two parameters, i.e. sulphur dioxide and nitrogen dioxide[2]. For example, particulate matter (PM) from forest fires directly impacts human health. As a result, an enormous number of pollutants are emitted into the atmosphere, and carbon absorption capacity reduced. Although the national average of PM 2.5 concentration (2015–2019) fell into good and moderate categories, several regions of the country were affected by land and forest fires, including Jambi, Palangkaraya and Palembang in 2019, causing high concentrations of PM 2.5 and categorised as unhealthy conditions[2].

The national land cover quality index scored 58–62 for the 2015–2019 reporting period. In 2019, approximately 15 provinces surpassed the land cover quality index national target, which was achieved by provinces located in the eastern parts of Indonesia with relatively high scores (more than 80)[2]. However, land and forest fires contributed to a decrease in the quality of land cover, specifically for areas located in West, Central and South Kalimantan provinces. Similarly, land use changes such as those found in North Sulawesi contributed to the decrease in land cover quality. Nonetheless, efforts to

reduce deforestation rates, particularly in Sumatra Island (e.g., the provinces of Aceh, North Sumatra, Lampung and Jambi) could significantly improve land cover quality. Other efforts to improve land cover quality include the expansion of green spaces in Jambi and South Sulawesi and forest rehabilitation in Lampung, Bangka Belitung, Riau Islands, South Sulawesi and Maluku (Figure 3.4)[2].

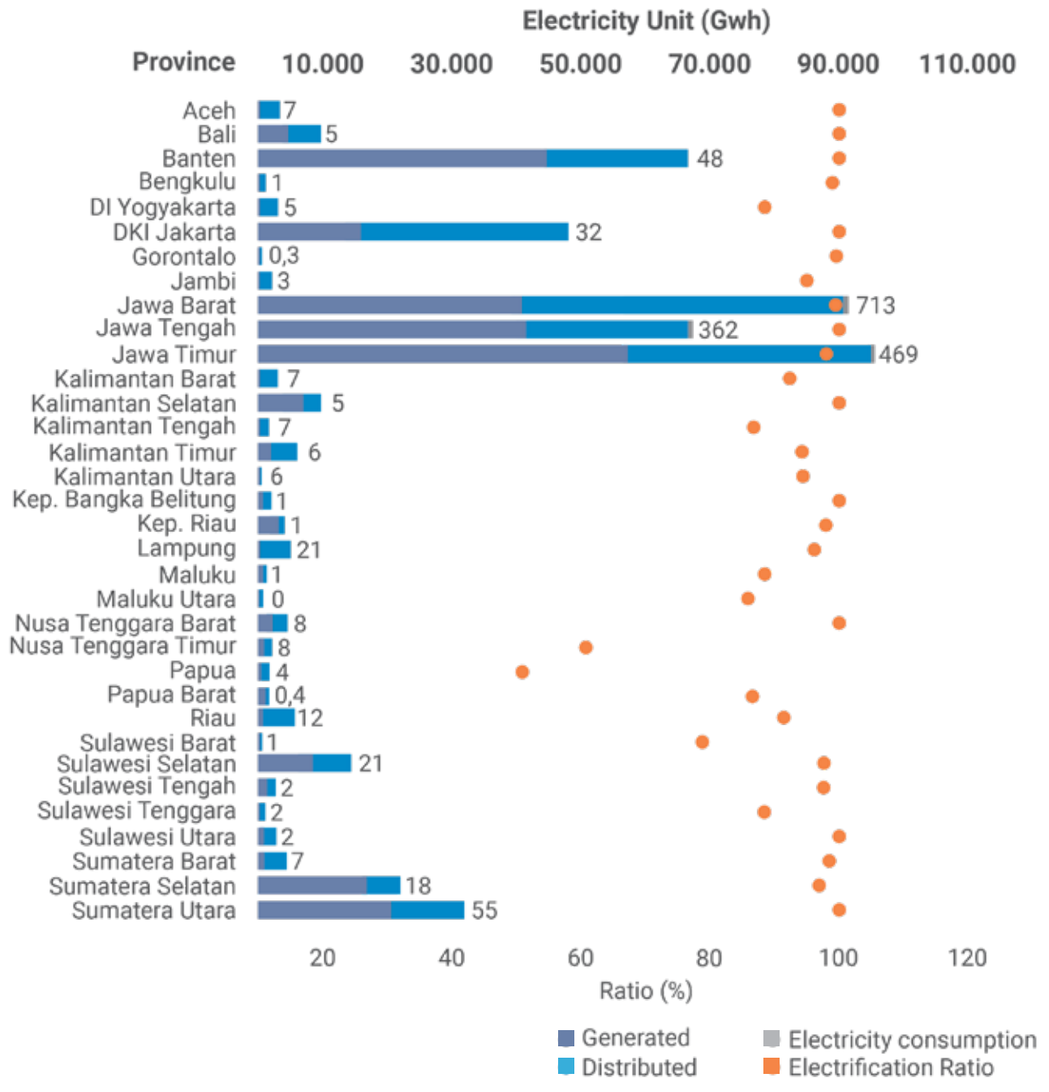
Other environmental challenges in Indonesia include waste management, fossil fuel consumption and land degradation. The total waste in Indonesia from all provinces reached 30.8 million tons/year in 2021, consisting mainly of food waste (39.8 per cent), plastics (17.7 per cent), woods (12.9 per cent), papers (12.1 per cent), and others (17.5 per cent). The bulk of these wastes are domestic (40.9 per cent), commercial (18.1 per cent), and from traditional markets (17.4 per cent), with the remainder (23.6 per cent) from offices, public facilities and others[83]. Data from the National Waste Management Information System (Sistem Informasi Pengelolaan Sampah Nasional (SIPSN)) revealed that only 19.9 million tons of Indonesia's total waste was properly managed (64.6 per cent of Indonesia's total waste in 2021). The remaining 35.4 per cent is possibly untreated, including being piled up in waste banks of various provinces[84]. This indicates that waste management is still a significant problem in Indonesia and requires more effective solutions. The volume of waste generated is projected to increase by around 1.1 per cent per year due to population growth[84].

The major contributor to land degradation is generally the high demand for land to support settlements, plantations and agriculture, which encourages deforestation. The population growth is expected to increase the demand for land resources, thereby accelerating land degradation. Even the expansion of small-scale agriculture and mixed plantations resulted in 22 per cent of national deforestation[85]. According to the Indonesian deforestation report, the trend has fluctuated since 1990, with the highest deforestation occurring in the 1996–2000 period (3.51 million hectares/year)[86]. The Indonesian government has shown great commitment to decreasing deforestation rates in subsequent periods, with the lowest deforestation rates occurring in the 2019–2020 period (120,000 hectares/year)[86]. Agricultural activities will have a profound impact on soil fertility, mainly as a result of soil contamination and pollution resulting from the intensive use of fertilisers and pesticides[87]. Soil pollution may also be caused by chemical contaminants such as salt, lead, heavy metals and pesticides carried into the soil by floodwaters and polluted water. This will cause the land to degrade, leading to decreased crop productivity in terms of quality and quantity.

3.4.3 ENERGY CONCERNS

Energy is not only an important element in supporting human lives, it is also essential for inclusive growth and prosperity for nations. Electricity consumption based on National Electricity Company standards is 50–100 kWh per capita, so the minimum energy consumed by a household is approximately 16.7–33.3 kWh per month, assuming four family members per household. Yet in 2021, electricity consumption in Indonesia was estimated at around 1,123 kWh. Generally, people living in urban areas consume more electric energy than those in rural areas, mainly due to their use of modern gadgets and household appliances. In both urban and rural areas, the size of household income also significantly determines energy consumption among families. Thus, socioeconomic differences are some of the greatest factors dictating energy access and utilisation in Indonesia. This becomes clear when we consider the distribution of electricity consumption by province. Those with the highest electricity consumption are found in West Java, East Java and Central Java, consuming 14,775, 11,542, and 9,906 kWh per capita of electricity respectively, while the lowest electricity consumption is in the provinces of Gorontalo, Maluku, North Maluku, West Papua, and West Sulawesi, where consumption is less than 500 kWh per capita[88]. Household electricity consumption estimated per province in terms of population shows West Java as the largest electricity consumer (713 GWh) (Figure 3.6).

Figure 3.6 Electricity Consumption per Province and Electrification Ratio from National Electricity Company (PLN) by Province (excluding non-PLN customers) in 2020 and Generation and Distribution of Electricity per Province in Indonesia 2020.



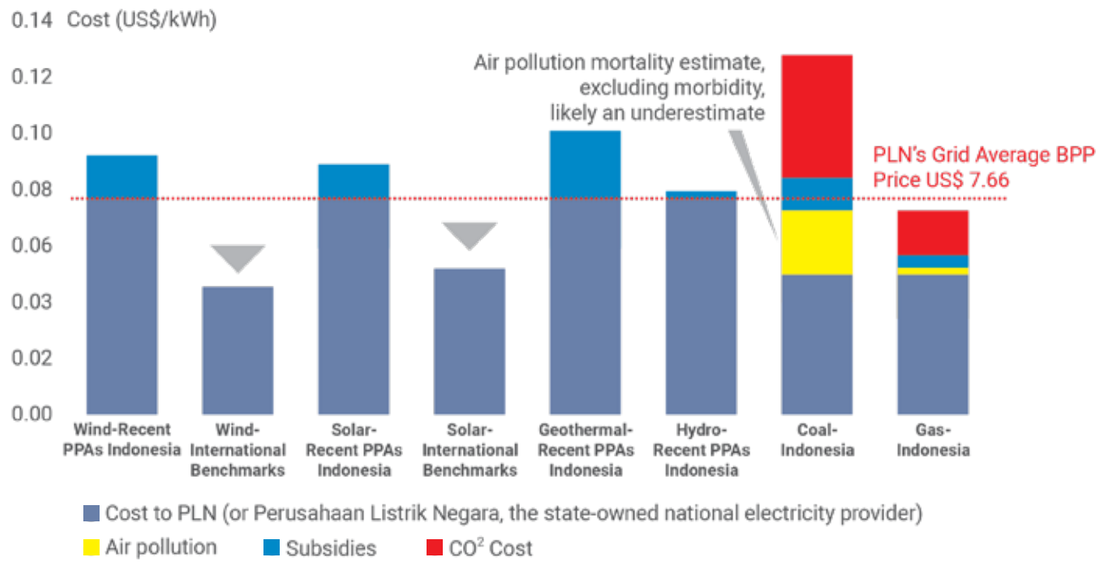
Source: illustrated from PLN data (2020)[88] and BPS data (2020)[89]

In provinces of Central and East Java, South Kalimantan, South Sulawesi, and North and South Sumatra, the electricity generated is higher than the distribution, giving them a higher electricity supply than other provinces in Indonesia (Figure 3.6)[88,89]. However, the other provinces require more electricity to support socioeconomic activities. Expansion of electricity supply throughout Indonesia, especially to the outermost and remote rural areas and small islands in eastern Indonesia, is a logistical challenge. Currently, Indonesia has eight major power grids and around 600 smaller, isolated networks spread across the country[88]. According to a statistic report by the National Electricity Company (Perusahaan Listrik Negara (PLN)), in 2020 the electrification ratio of household customers (from PLN or a non-PLN source) to the number of total households reached 96.7 per cent. This number increased to 99.5 per cent in 2021. Nevertheless, the electrification ratio for East Nusa Tenggara and Papua provinces is lower than 60 per cent (Figure 3.6), which is much lower than the other provinces[88]. This indicates that there is inequality in access to electricity, and therefore requires improvement in electricity transmission in the two provinces to offer better access to supply.

Indonesia's energy mix for new and renewable energy (NRE) remains less than optimal. Until 2019, the most extensive power plant mix was sourced from coal at 59 per cent, followed by gas-fired power plants at 21 per cent, which are the most significant contributor to the GHG emissions causing climate change[90]. Renewable energy-based power plants that target low carbon development for climate change mitigation remain in third position at 16 per cent[91]. Total renewables installed capacity on- and off-grid until the end of 2019 was 10.17 GW, with 385 MW of new capacity added. Hydropower still dominates by 53.1 per cent, followed by geothermal at 20.9 per cent, bioenergy at 18.7 per cent, mini/micro hydro at 4.6 per cent, wind at 1.5 per cent, solar photovoltaic at 1.5 per cent, and waste at 0.2 per cent[92]. Although its capacity has been gradually increased, Indonesia still has some challenges in increasing the contribution of NRE to the national energy mix[93]: 1) lack of optimal policies regarding the determination of the selling price of renewable energy, licensing issues, and the division of authority between the centre and the regions; 2) lack of accurate data on the potential of NRE for investors; 3) inability of the existing incentive and funding schemes to effectively encourage increased investment in NRE and; 4) inadequate budgetary and non-budgetary support for research and development in NRE.

Despite the challenges, Indonesia has committed to increasing its renewable energy supply to a minimum of 23 per cent by 2025 in compliance with the Paris Agreement. To realise its commitment, the Indonesian government joined the Clean Energy Demand Initiative (CEDI), an initiative led by the government of the United States to bring corporations and countries together to promote clean energy investment[94]. This initiative is a concrete step towards achieving the NDC 2030 and the net zero emission targets. According to the National Energy General Plan (Rencana Umum Energi Nasional), the Government of Indonesia limits coal production at the level of 400 million tons/year. The government also plans to intensify the provision of renewable energy in the future so that by 2050 the supply of renewable energy will reach 275.2 million or mega tons of oil equivalent (MTOE) (business as usual scenario), 264 MTOE (sustainable development scenario), and 477 MTOE (low carbon scenario)[95]. The soaring supply of renewable energy in the low carbon scenario in 2050 is influenced by the biodiesel blending programme reaching 100 per cent and 85 per cent bioethanol[91]. Currently, Indonesia is building a large-scale hydroelectric power plant with a capacity of 9 GW in North Kalimantan Province, and another is planned for Papua. The development of a Super Grid will begin in 2025 to supply energy to local communities across Indonesia[94].

Figure 3.7 Relative Cost of Coal and Renewable Energy



Sources. Source: BAPPENAS (2019)[96]

The benefits and incentives for Indonesia to begin a swift and bold transition to renewable energy are enormous but underappreciated. Indonesia's continued dependence on coal is built generally on the perception that coal costs are lower than alternative energy sources, along with various political economic considerations. The cost of new coal projects can be higher than the renewable energy generated by wind, solar, geothermal and hydropower projects, particularly when the relative costs of coal, gas and renewable energy are broken down into costs to PLN, subsidies, air pollution and global climate costs (Figure 3.7). As the cost of Indonesia's renewable energy projects approaches international benchmarks, this will be the cheapest form of power generation, even lower than recent power purchase agreement prices for coal and gas, regardless of external costs[96].

According to the International Energy Agency (IEA) (2021), Indonesia is the most significant energy producer and consumer in Southeast Asia[97]. The future electricity demand and the emission reduction targets in the NDC encourage the need for improvement in energy efficiency, which can be indicated by energy intensity, reflecting the number of energy resources used to produce one unit of output. This means the lower the energy intensity, the more efficient the energy use. During the 2000–2017 period, Indonesia reduced its energy intensity at a rate of 1.5 per cent per year trending downward, showing some improvement in energy efficiency[97]. Despite this, Indonesia is still considered inefficient in energy use as the country is 18th out of the 23 highest energy consuming countries worldwide[98].

Low Carbon Development Indonesia (LCDI) policy endorses a public policy framework that provides incentives and signals for entrepreneurs and individuals. The framework aims to encourage a move towards a low carbon economy, actions on existing regulations and directives on land, energy, biodiversity, and water resources, and also promote the sustainable use of environmental resources. To deliver better, immediate, consistent and comprehensive social and economic outcomes, the ambition of LCDI consists of the following targets:

1. Advancing a transition to renewable energy sources and away from coal. This transition is made by scaling up the share of renewable energy from about 8 per cent in 2015 to 23 per cent by 2030 and 30 per cent by 2045.

2. Increasing energy efficiency. This initiative will reduce total energy consumption per person by 3.5 per cent in 2030 and 4.5 per cent in 2045. Energy efficiency is also expected to reduce total GHG emissions by more than a third in 2030 and 60 per cent in 2045 (relative to 2018).

3. Full enforcement of forests, palm oil, mining and peat land moratoria. Indonesia has 41.1 million ha of primary forest (45.9 million ha in 2014), including nearly 15 million ha of peatland by 2045. Primary forests, such as those in Papua and Kalimantan, are of particular concern, as are critical peatlands and mangrove systems that support biodiversity, increase resilience and contribute to carbon emission reduction targets[96].

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Chapter 4: The CEE Impacts On Children And Six Social Sectors

The previous chapter described the situation on CEE issues in Indonesia. The country is experiencing an increasing trend in air temperature and changing rainfall patterns. This trend will likely continue in the future as the climate is projected to have higher air temperature, changing patterns in the duration of the wet and dry seasons, and rainfall intensity. This changing climate may expose climate related hazards (e.g., heat stress, water stress, flood, drought, strong wind, and landslide). The identified environmental problems are related to maintaining healthy environmental quality (air, water and soils). These problems mainly arise from human activities such as domestic use, fuel consumption and agricultural activities contributing to generating waste, environmental pollution (air, water and soil) and land degradation. The energy issues include unequal energy access, inefficient energy consumption, increasing energy demand, and reliance on energy supply sourced from fossil fuel production. These concerns are raised due to the diverse geographic locations of the country (urban, rural and remote areas), and the population growth demands increasing energy supply. This chapter will further discuss the impacts of the CEE challenges on children and the six social sectors. Children are considered vulnerable because of (1) their physical growth; (2) their unique behaviour and interactions with the environment around them and; (3) their dependence on caregivers.

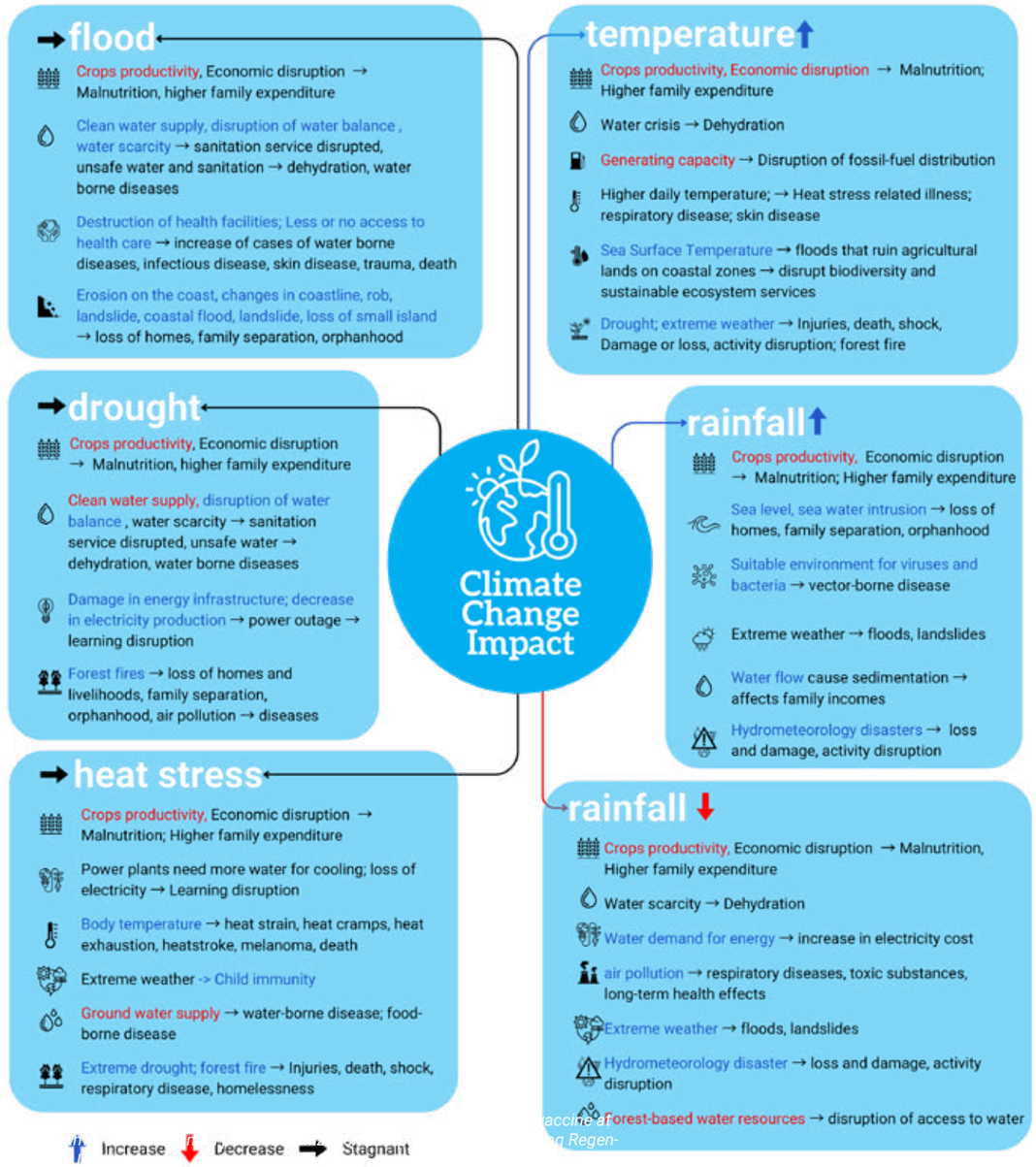
4.1 THE IMPACTS OF CEE ISSUES ON CHILDREN

4.1.1 CLIMATE

Increasing air temperature and changing rainfall patterns will have significant impacts on crop production and their suitability to the environment, the nutritional quality of some crops (e.g. lower protein, iron and zinc), water crises, decreasing energy generating capacity, increasing water pollution, and increasing drought frequency, all of which would be harmful to children. Extreme climate variability generally reduces crop productivity, increases hydrometeorology disasters, affects water flows and, in certain circumstances, creates an environment conducive to viruses and bacteria. In addition, the increased frequency of hydrometeorological disasters may harm children by reducing food production and supply, disrupt access to public infrastructure, force evacuation and even migration, separate them from their families, increase risks of homelessness and orphanhood, and threaten their physical and mental health[10,99].

Climate change can affect almost all aspects of ecosystems, including the physiological responses and behaviour of organisms, life cycles, competitiveness, community structure, productivity, and nutrient cycles[100]. Environmental damage is most closely related to disasters caused by climate related hazards such as floods, droughts, heat stress, landslides, etc. A prolonged drought can cause forest fires that can reduce air quality. The resulting gases will persist in the atmosphere, causing further disturbance to the climate cycle. The increasing intensity of floods due to extreme climate events could cause soil and water pollution. Shifts in the rainy season, i.e., changes in rainfall patterns, increases in maximum temperature, and shifts in climate patterns, can affect the conditions needed to support the growth of certain plant species[100]. Increasing human needs for food supply, agriculture, settlement and industry, may lead to deforestation.

Figure 4.1. Impact of Climate and Related Hazards on Children. Figure 4.1 Identified Impacts Of Climate Condition And Related Hazards On Children[10,99,100,101]



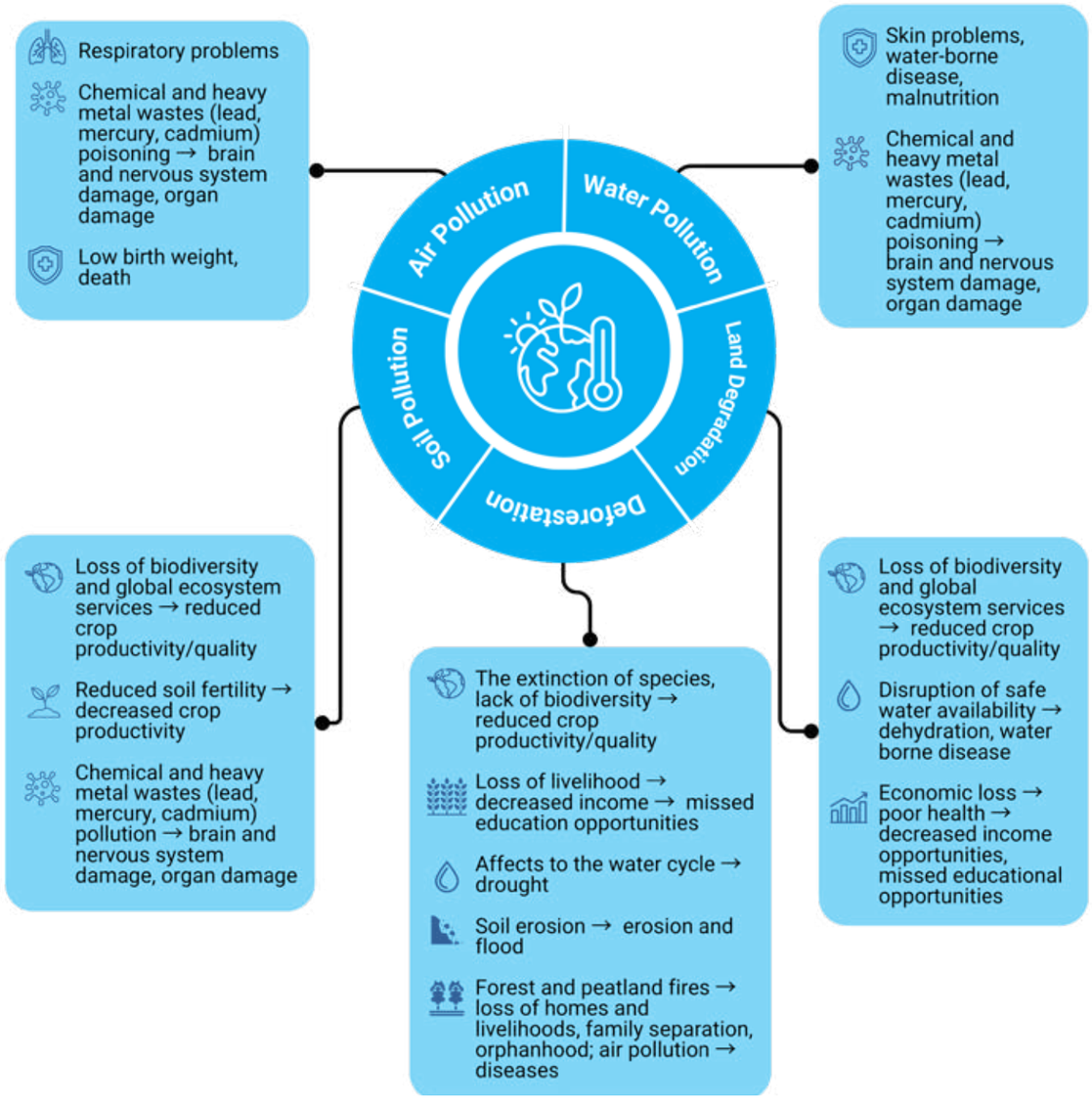
4.1.2 ENVIRONMENT

The condition of air, water and land have direct and indirect health, economic and social impacts on human life and especially on vulnerable groups such as children. Pollution is one of the biggest risk factors for disease and premature death, responsible for about 9 million premature deaths per year, corresponding to one in six deaths worldwide[102]. Air pollution and toxic chemical pollution in particular (e.g. lead) are among the world's main threats to child health. The sources of ambient air pollution generally include emissions from burning vehicle fuels, burning solid fuels, industry, forest and peatland fires, smoke from bushfires, windblown dust, and biogenic emissions from vegetation (pollen and mould spores)[103]. Indoor air pollution can come from outdoor sources (such as emissions from transport), fuel-burning combustion appliances, smoking tobacco, and materials used in construction and furnishings. Inadequate ventilation causes poor air circulation, allowing pollutants to accumulate to levels that pose health and comfort problems[104]. The most common air pollutants (outdoor and indoor) are particles of PM2.5 and PM10), nitrogen dioxide, sulphur dioxide and carbon monoxide. These pollutants have been linked to health problems such as stroke, heart disease, lung cancer, chronic and acute respiratory diseases, and asthma[105].

Water pollution impacts every living organism, but children are particularly at risk of poisoning and skin health diseases from exposure to polluted water[106]. The land condition also affects air and water quality. Land degradation, especially around the upstream watershed, will affect the availability and quality of water downstream due to the loss of environmental service providers, thereby reducing the carrying capacity of the area, making land quality an important issue[107]. Water pollution causes deterioration in water discharge and hydrometeorological disasters are connected to reducing watershed quality[108]. A downward trend in the amount of water absorption usually follows the conversion of forest areas into plantations. The continued impact of higher water discharge during the rainy season can cause an increase in total sediment resulting in silting. As a result, water balance disruption and lower water absorption affect health (water-borne disease) and WASH quality. Land degradation also correlates to air quality. Land and forest fires produce pollutants that affect the physical defence and immunity development of children aged under 5[109]. Sources of soil and water pollution also come from chemical waste and heavy metals, such as lead in batteries and mercury from mining, which can cause poisoning.

Indirectly, land degradation has a great impact on child welfare through the economy. Loss of ecosystem services, including food and water sources, flood management, water filtration, nutrient cycle, soil formation and habitat provision for biodiversity as a result of land degradation, estimated at 5.69–26.75 per cent, caused the national GDP to shrink by about 14.4 per cent[10]. Economic disturbance triggered by hydrometeorological disasters has greatly impacted the ability of families to cater for children, especially in agricultural households[10,99]. Land degradation and deforestation indirectly cause loss of biodiversity and ecosystem imbalance, thus threatening food security because a lack of biodiversity makes plants and animals more vulnerable to pests and diseases[110]. Biodiversity plays an important role in food security, human health and livelihoods. Sustaining biodiversity provides clean water and contributes to carbon sequestration and other essential services[111].

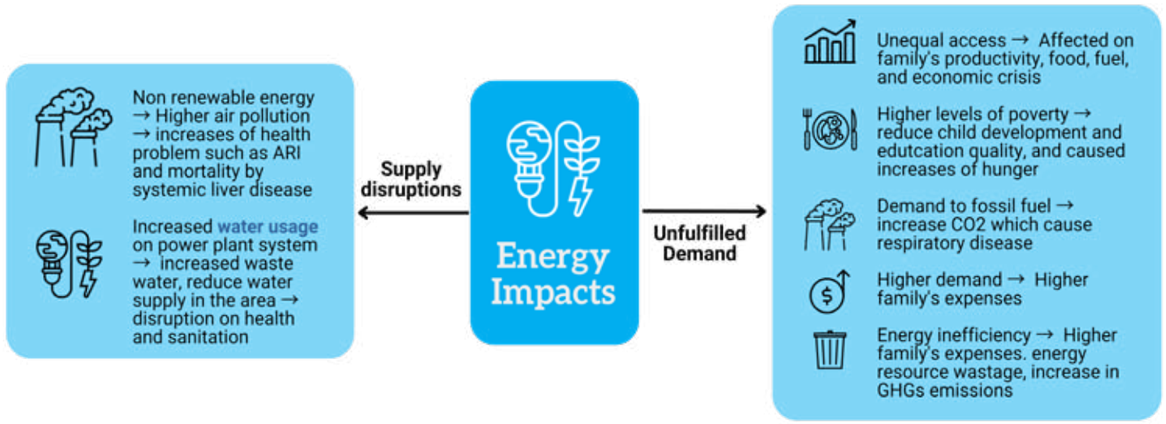
Figure 4.2 Identified Impacts Of Environment Concerns on Children[10,100 ,102]



4.1.3 ENERGY

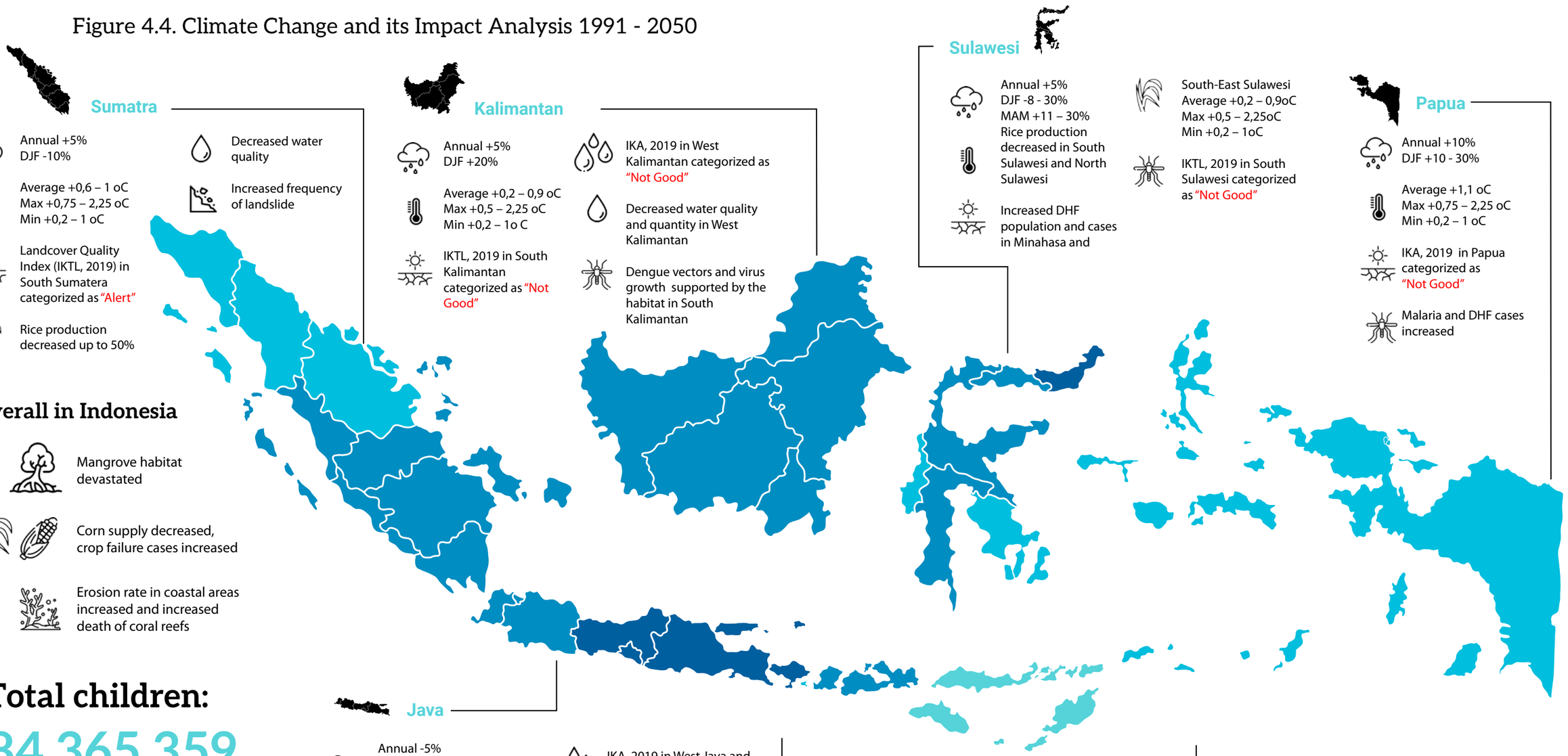
The increase in extreme weather events, rising air and water temperatures, changes in rainfall and river flow patterns, and future sea level rise, can affect the energy system with an impact on energy demand and supply[100]. Disruption of energy production, especially electricity, will have an impact on the unfulfilled demand for electrical energy. With energy growth of around 5.8 per cent per year and the rate of energy use in Indonesia[92], the effects on the electricity sector can have drastic social and economic impacts. The supply of electrical energy can be disrupted by a decrease in generating capacity caused by climate change induced events. Climate change could also affect access to alternative energy sources especially when the energy mix is not optimal, as in Indonesia where coal remains the dominant source of energy. Extreme weather and climate change-induced events are not only able to disrupt the coal mining process, rising sea levels can also hamper the transportation of coal by sea. Energy infrastructures such as pipelines, electricity transmission, ports, and gasification terminals are also at risk of damage due to extreme weather events in the form of floods, fires and hurricanes. Electrical losses may also occur due to temperature changes that affect the transformation and electrical conductivity of cables[114]. The increase in the use of air conditioners due to heat waves will cause surges in electricity demand, putting greater pressure on the electricity network and causing power outages and even network damage.

Figure 4.3 Impact of Environment Issues on Children[10,99]



Generally, regional conditions significantly influence the impacts of CEE on children (especially children's health and social situations). Based on the distribution of the percentage of children nationally, more than 10 per cent are in West Java, Central Java and East Java. If viewed by population per province, at least 25 per cent of the people in each province in Indonesia are children, with the highest percentage of children in East Nusa Tenggara (more than 40 per cent) (Figure 4.4). This province is considered one of the most vulnerable to climate change impacts and the most vulnerable in terms of income per capita percentage loss due to climate change in 2050[117] (see Chapter 3).

Figure 4.4. Climate Change and its Impact Analysis 1991 - 2050



Sumatra

- Annual +5%
  DJF -10%
- Average +0,6 – 1 oC
  Max +0,75 – 2,25 oC
  Min +0,2 – 1 oC
- Landcover Quality Index (IKTL, 2019) in South Sumatera categorized as "Alert"
- Rice production decreased up to 50%
- Decreased water quality
- Increased frequency of landslide

Kalimantan

- Annual +5%
  DJF +20%
- Average +0,2 – 0,9 oC
  Max +0,5 – 2,25 oC
  Min +0,2 – 1o C
- IKTL, 2019 in South Kalimantan categorized as "Not Good"
- IKA, 2019 in West Kalimantan categorized as "Not Good"
- Decreased water quality and quantity in West Kalimantan
- Dengue vectors and virus growth supported by the habitat in South Kalimantan

Sulawesi

- Annual +5%
  DJF -8 - 30%
  MAM +11 – 30%
  Rice production decreased in South Sulawesi and North Sulawesi
- Increased DHF population and cases in Minahasa and
- South-East Sulawesi
  Average +0,2 – 0,9oC
  Max +0,5 – 2,25oC
  Min +0,2 – 1oC
- IKTL, 2019 in South Sulawesi categorized as "Not Good"

Papua

- Annual +10%
  DJF +10 - 30%
- Average +1,1 oC
  Max +0,75 – 2,25 oC
  Min +0,2 – 1 oC
- IKA, 2019 in Papua categorized as "Not Good"
- Malaria and DHF cases increased

Overall in Indonesia

- Mangrove habitat devastated
- Corn supply decreased, crop failure cases increased
- Erosion rate in coastal areas increased and increased death of coral reefs

Total children:

84,365,359

Children in Total Population

- ≤ 25%
- 25 - 30%
- 31 - 35%
- 36 - 40%
- > 40%

Java

- Annual -5%
  DJF -20 - 40%
  MAM -4%
  SON -8%
- Average +0,2 – 0,9 oC
  Max +0,5 – 2,25 oC
  Min +0,2 – 1o C
- Air Quality Index (IKU, 2019) in West Java and DKI Jakarta categorized as "Not Good"
- IKTL in Java categorized as "Not Good"
- IKA, 2019 in West Java and DKI Jakarta categorized as "Not Good"
- Rice and corn prod. decreased up to 50%
- Drought areas increased in Central Java
- Heavy rainfall, heavy flooding mostly in West Java
- Dengue Hemorrhagic Fever Increased in Semarang
- Water supply decreased

Bali & Nusatenggara

- Annual -5%
  DJF -20%
- Average +1,6 – 2 oC
  Max +0,5 – 2,25 oC
  Min +0,2 – 1 oC
- IKA, 2019 in NTB categorized as "Not Good"
- Increased flood and hydrometeorological disaster in Nusa Tenggara Timur
- Drought cases increased in Nusa Tenggara Barat

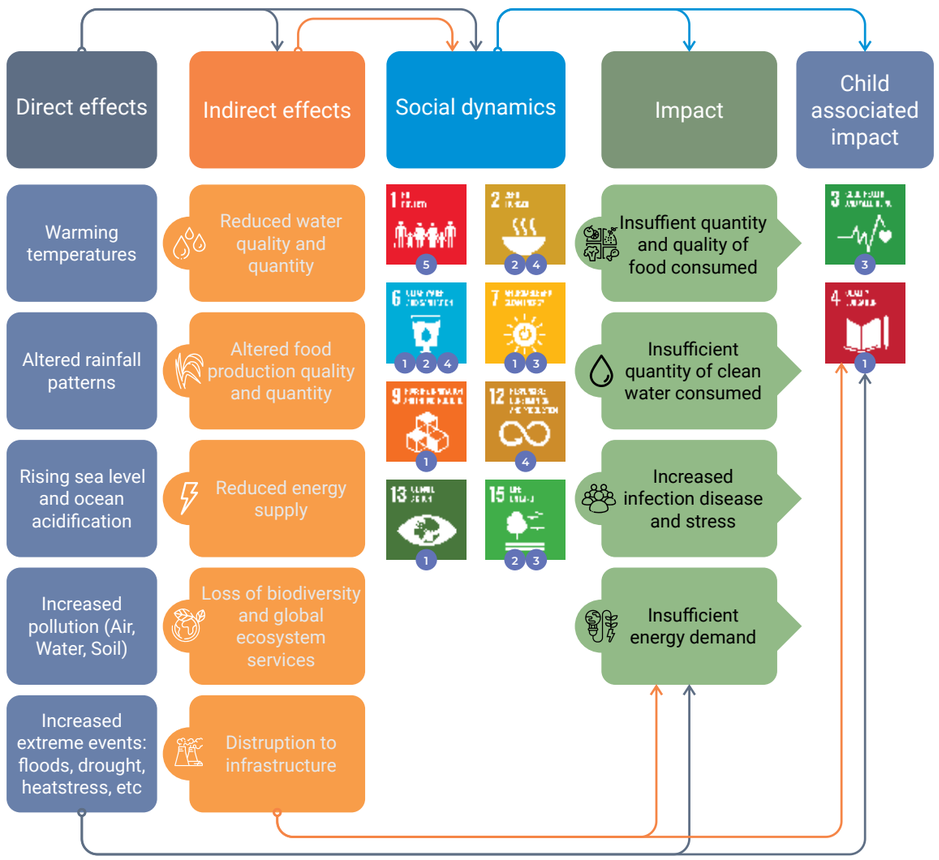
The figure provides an analysis of the climate change impact projection of 2021-2050 for average, maximum, and minimum air temperatures, annual and seasonal rainfall (December, January, February (DJF), March, April, May (MAM), September, October, November (SON)) registered in 1991-2020, Environment Quality Index including air, water and land cover quality indices, and Climate hazards based on region. The following sources (BMG (2007), KLHK (2020b), KLHK (2019), BNPB (2022), KLHK (2020a), World Bank and ADB (2021), UNU-EHS (2022) were used for the analysis.

Source: child data from MoWECP and climate outlook documents[100]

4.1.4 CONNECTIVITY WITH SDGS

Issues related to CEE will impact several SDG goals including SDG 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 15 and 16. For example, climate change causes warming temperatures and altered rainfall, reducing water quality and quantity. This stressor will impact SDG 6.4 (reducing the number of people suffering from water scarcity) and could eventually lead to the consumption of unsuitable water, causing health problems such as dehydration and diarrhoea in children. The water related issue will also impact the targets of SDG 3.3 (end water-borne and other communicable diseases). Polluted soil may alter food production quality and quantity, impacting the targets of SDG 2.2 (end all forms of malnutrition) and SDG 2.4 (increase productivity and production). Unequal energy supply and demand may increase electricity prices which will impact the targets of SDG 7.1 (ensure universal access to affordable, reliable and modern energy services). This pressure affects the quality of children's education and the targets of SDG 4.1 (ensure equitable and quality primary and secondary education). The relationship between CEE issues, social sectors and SDGs is illustrated in Figure 4.5 and explained in sub-chapter 4.2.

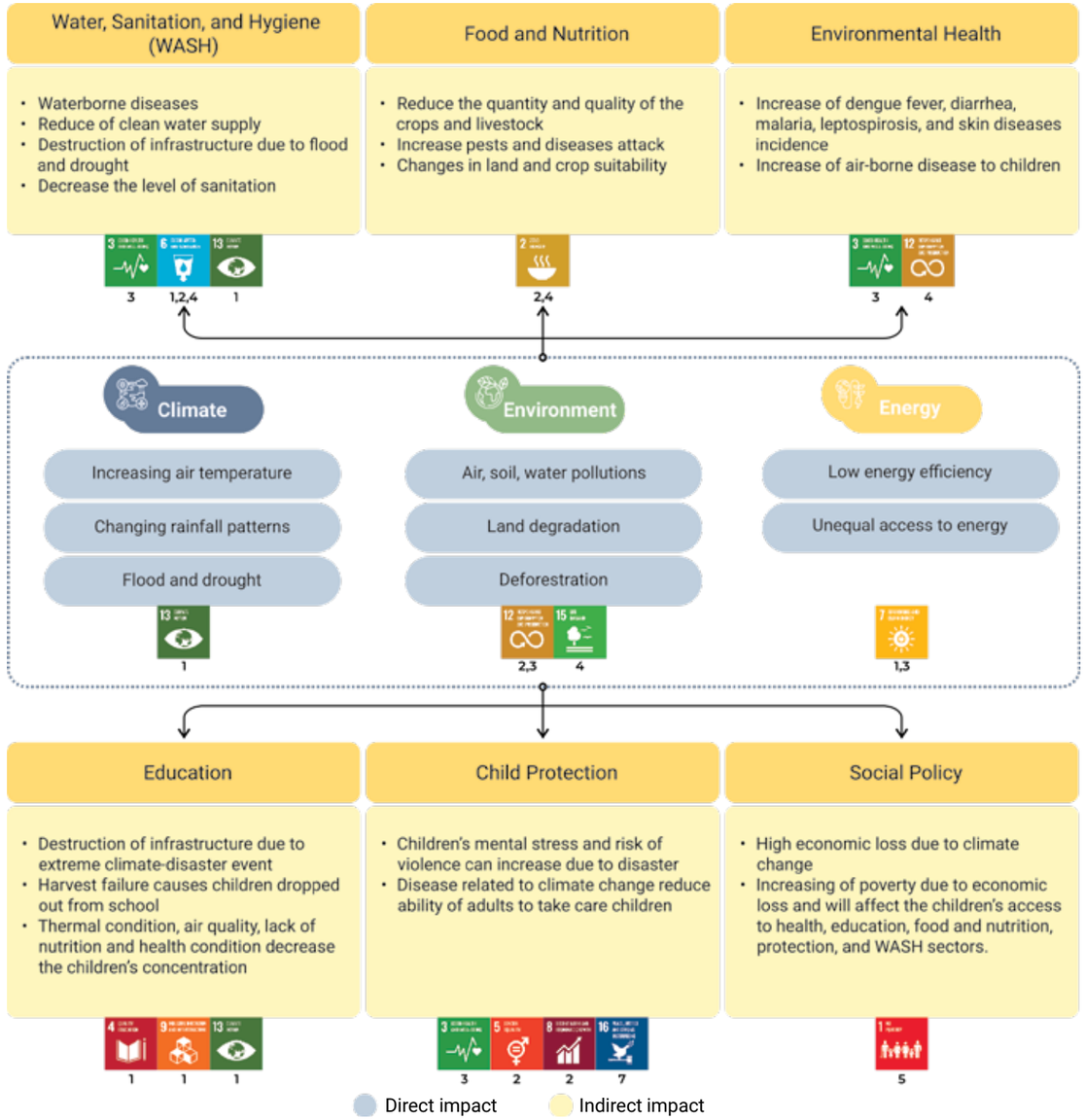
Figure 4.5 Impact of CEE on social sector and SDGs



4.2 THE IMPLICATION FOR SOCIAL SECTORS

This section discusses the implication of CEE issues on the social sectors: WASH; food and nutrition; health; education; child protection; and social policy. The main implications and associated SDGs are identified for each social sector, summarised in Figure 4.6 and detailed in the next sub-section.

Figure 4.6 Implication of CEE on social sectors and connectivity with SDGs



4.2.1 WATER, SANITATION AND HYGIENE (WASH)

Changing rainfall and increasing air temperature causes the outbreak of water-borne diseases due to a lack of adequate water supply[10] and reduced freshwater availability[118]. This issue will affect SDG 3 (ending water-borne and other infectious diseases), SDG 6.4 and 6.1 (ensuring sustainable uptake and supply of clean water), and SDG 6.2 (access to sanitation). Based on the Asian Development Bank (ADB) and World Bank report (2021)[21], several provinces (Java, Bali, East Nusa Tenggara and parts of Sulawesi) experience water deficits, partly through water pollution. Climate change may exacerbate climate related disasters such as drought and floods that can affect the supply of clean drinking water. This will decrease the level of sanitation in SDG 6.2 (access to adequate and equitable sanitation and hygiene for all). This unfavourable condition will increase water-borne diseases (e.g., diarrhoea)[15].

Climate change induced drought conditions will lead to water crises[10] and consequently increase dehydration in children, which may result in increased neonatal and child mortality rates[119]. While floods can cause damage and destruction of infrastructure, they also significantly affect water quality, interfering with access to essential water and sanitation services and preventing hygienic behaviour[120]. Damage to infrastructure and disruption to water and sanitation services due to flooding impacts SDG goals SDG 6.1 (universal and equitable access to safe and affordable drinking water for all), SDG 6.2 (access to adequate and equitable sanitation and hygiene for all and end open defecation), SDG 9.1 (sustainable and resilient infrastructure), and SDG 13.1 (resilience and adaptive capacity to climate related hazards). The damage may also prevent Indonesia from achieving the national goal of zero per cent open defecation and 15 per cent safely managed water and sanitation by 2024, as targeted in the RPJMN.

In the energy sector, electricity shortages can also affect availability, treatment, transmission, distribution, and quality of water, given that modern wastewater treatment facilities require substantial amounts of electricity (which also means higher investment and operational costs). Energy shortages will impact water availability, affecting those who rely on groundwater sources and consume piped water, especially in urban areas. Since wastewater requires adequate treatment before being discharged into the environment, wastewater left untreated due to energy shortages can contaminate other sources of water supply and encourage the spread of diarrhoeal diseases such as cholera[121]. Children are most susceptible to diarrhoeal diseases, which are believed to have caused about 370,000 deaths in 2019[122]. In addition to natural disasters affecting water conditions, land use change also leads to degradation of water resources. Agricultural practices and urbanisation produce the most prominent pollution affecting river water quality, including organic matter, metals and domestic wastewater[123]. In Indonesia, waste has also been found to contaminate groundwater as a drinking water source in many areas. UNICEF-led research on the impact of climate change on safely managed sanitation clearly highlighted the impact of floods on the sanitation chain, beginning with access to toilets, challenges with desludging, transportation of septic sludge, and flooding of treatment sites[119].

4.2.2 FOOD SECURITY AND NUTRITION

The impact of climate change on agricultural activities, including fisheries and livestock farming, is significantly related to food security and subsequently impacts food supply[118,124]. Increased air temperature and changes in rainfall patterns affect growth and development of crops due to shifts in cropping patterns and calendars, and potential infestations of pests and diseases that eventually decrease agricultural production[76,118,125]. The decline in agricultural productivity impacts food security due to limited physical access and affordability, availability, stability of food supply and quality of food consumed[126]. Indonesia's risk of decreasing rice production averages 1.37 per cent per year, and has the potential to cause a decrease in national food production[126]. The decline in food production results in reduced income for farmers and increased food prices, so food diversity decreases (especially for low-income families), impacting access to food and quality nutrition. The impact of climate change on vegetables and fruit is well documented. According to the Directorate of Horticultural Protection (2014), a La Niña climate phenomenon with a moderate intensity triggered floods in 2010, disrupting the productivity of vegetables and fruit in Indonesia. As a result, fruit production decreased by 35–75 per cent and vegetable production decreased by 20–25 per cent compared to harvests under normal climatic conditions. Climate change induced disruptions of food systems, particularly food production, aggravate malnutrition in children under 5 years of age[127].

The changed climate will increase susceptibility to disease and stress in livestock, leading to a decrease in livestock production[128]. Increased air temperature causes livestock to experience heat stress, reducing appetite and lowering body temperature (livestock tend to drink rather than eat). Hot conditions will also cause reduced body fluid, minerals and nutrients in animals, especially mammals, as a result of increased perspiration. This is of particular relevance to Indonesia as a tropical country[128]. The productivity of livestock in terms of milk production and dairy meat will be greatly affected by heat stress experienced by animals. Increased temperature and humidity create a favourable environment for fungi, parasites, mosquitoes, flies and other pests and diseases that can infect livestock[129]. In Indonesian fisheries, climate change will affect the rise of sea levels and coastal water temperature, which eventually are expected to impact fish yields, the nation's most dominant source of animal protein, further reducing the availability of animal protein for human consumption, especially among children[130].

Increased CO_2 concentrations in the atmosphere disrupt the food system, particularly food production through reduced zinc and other nutrients in important food crops (such as rice, wheat, maize, soybeans, field peas and sorghum) and livestock[131–133]. Zinc deficiency will exacerbate malnutrition challenges and consequently impair immune function and increase susceptibility to morbidity and mortality from infectious diseases. In addition, children under 5 years of age tend to be at greater risk of developing zinc deficiency due to increased malnutrition[126].

According to ADB (2019)[21], projections indicate that there will be around 35.1 deaths per million population in Indonesia by mid-century due to a lack of food availability as a result of climate change under the RCP 8.5 scenario. Without proper and effective adaptation, the risk of child hunger and malnutrition could increase to 20 per cent by mid-century[21]. Disruption to food systems and healthy nutrition will impact SDG 2.2 (ending all forms of malnutrition) and indicator 2.4 (increasing productivity and production).

Social forestry programmes are said to have promising potential and can contribute to community food security. A programme regulated under MoEF Regulation No. 11/2020 is included as one of the key climate change adaptation and mitigation interventions to achieve the target of climate resilience. It is also linked with the Climate Village Programme[134]. Agroforestry has been an effective method of managing social forestry to achieve food availability and sustainability, seeking to optimise land use by combining trees with crops and livestock. Local communities are given access to village forest management and business permits for community and plantation forests,

forestry partnerships or recognition and protection in customary community law, and forest sustainability. Case studies of social forestry practices in places like Lampung and Yogyakarta (Kulon Progo and Gunung Kidul), showed that social forestry through an agroforestry system could be a promising initiative to enhance community food security to alleviate food crises, especially at household level (including children)[135]. There have been no reports of food crises in areas that have developed social forestry schemes as people are able to grow food to supply carbohydrates for their own families[135]. The implementation of social forestry in Lampung Province contributes an average monthly income of IDR 8,036,507 per family, or 67.72 per cent of total revenue in an area of 1.5–2 hectares per family[136]. The commitment of local governments to increase budget allocation, strengthen regulations, facilitate the permit process and provide guidance for forest management, is needed to succeed in the implementation of social forestry[137].

4.2.3 HEALTH

Children are more vulnerable to diseases, sickness and health problems because their immune systems are not fully developed. Extreme weather can further lower their immune systems[138]. According to the National Health Adaptation (2019), increased rainfall and flood events may also increase the incidence of acute respiratory infections, dengue fever, diarrhoea, leptospirosis, malaria and skin diseases among children[139]. During the dry season, the risk of diarrhoea can increase due to the reduced availability of clean water and the difficulty of handwashing with soap when water supplies are limited[15]. The shortened dry season is related to increases in malaria and severe dengue infection (more intensely, long wet season increases exposure to 1.88 percent), especially for children and teenagers[140].

Changes in temperature, rainfall and humidity may cause children to experience health problems like vector-borne diseases. Changes in rainfall patterns may also create puddles of water that have the potential to become mosquito breeding habitats[15]. Humid conditions will affect the breeding of mosquito vectors that cause malaria and dengue and their transmission[118,141–143]. Warming conditions can increase the virus replication rate, shorten the extrinsic incubation period and accelerate mosquito development, resulting in faster vector transmission. Vector-borne diseases such as malaria and dengue are influenced by seasonal climate variables, peaking in the rainy season (DJF) and decreasing in the dry season (JJA). The rising challenges from climate change will affect the achievement of SDG 3.3 (end malaria and neglected tropical diseases, water-borne diseases and other communicable diseases).

Environmental degradation and climate change affect children's health differently by age group. The impacts on foetuses and newborns are premature birth and a decrease in weight. Pregnant women who are exposed to extreme heat, environmental pollution, flood related contaminants and dehydration can be affected, particularly their mental health and foetal growth[144]. Newborns are susceptible to changes in their environment, especially temperature extremes because their capacity to regulate body temperature is limited. Infants and toddlers (1–5 years) have a high level of sensitivity to pollutants or allergens in the air; exposure can trigger asthma and other respiratory diseases. Infants and toddlers are also sensitive to contaminants in the water and food they consume, which can increase the risk of diarrhoea. Children of school age (7–18) spend more time playing outdoors which can increase the risk of exposure to extreme heat and higher average temperatures, land, air and water pollutants, and diseases carried by mosquitoes and ticks[145].

Forest and peatland fires will expose children to higher levels of air pollution[10,146] and carbon emissions as the ecosystems store large amounts of carbon. The Indonesian forests store about 200 tons of carbon per hectare, and peatlands hold about 46 gigatons of carbon. Land and water pollution pose risks to the health and development of children, including direct exposure to hazardous or toxic materials and waste, such as lead in paints used for children's toys and playgrounds, lead from unsafe battery recycling, and mercury contamination from gold mining. The Institute for Health Metrics and Evaluation estimated that around 8.3 million children in Indonesia have blood lead levels of more than 5 grams per decilitre (g/dL), and 17,000 children have blood lead levels of more than 10 g/dL. According to WHO, no level of lead in a child's blood is safe[147]. The Institute for Health Metrics and Evaluation also identified air pollution as one of the top five risk factors for death of children under 5 years of age in Indonesia. Poor waste management (open landfills, waste burning and e-waste) may result in land, river and ocean pollution. Groundwater contamination from garbage disposal in rivers, drainage and springs can increase diarrhoea and dysentery[148].

4.2.4 EDUCATION

Crop failure impacts rural household expenses in non-food sectors, including children's education investment (12–14 per cent lower for farming families and 26 per cent lower for non-farming families)[149]. One fifth of rural children surveyed reported dropping out of school due to a lack of money resulting from crop failures linked to floods or droughts, while only 1 per cent of urban children identified this as an issue. In Indonesia, more children in urban areas reported damage to schools and other infrastructure, forcing parents to withdraw their children from school during emergencies with little possibility of returning[150]. As many as 54,080 primary and secondary schools are located in areas prone to floods and 15,597 schools are located in areas prone to landslides[151]. In the period of 2009–2018, 50,666 schools were affected by climate related disasters (forest and land fires and floods)[151].

As climate change continues to present increasing challenges for energy production and transmission, disruption of energy production, especially electricity, will result in blackouts including in schools, which will disrupt learning[152]. Rising electricity costs will result in higher family costs, resulting in less money to fund education of children[99]causing the pole inequality relations between men and women. Therefore, in this study wanted to dismantle the detail view of some theories, both social and feminist about gender relations in the family. Each of these theories (structural functional, conflict and feminist. Disturbances in children's education will impact the goals of SDG 4. 1 (ensuring that children have equitable and quality primary and secondary education leading to relevant and effective learning outcomes).

Climate change can also affect children's concentration and learning performance. Poor nutrition (as explained in section 4.2.2) also affects the cognitive development of children, including the level of intelligence and memory, as it interferes with motivation, ability to concentrate and ability to learn. In addition, environmental pollution in the form of toxic waste such as lead, causes poisoning in children that damages their brains, exposing them to neurological, cognitive and physical disorders throughout the life course. Childhood lead poisoning may be caused by pollution from substandard used lead acid batteries and exposure to decorative paint with a high lead concentration in playgrounds and public facilities. In 2021, it was reported that 73 per cent of paints for home and industrial use contain more lead than the specified limit (more than 90 ppm in enamel decorative paints)[153]. High blood lead levels among children due to exposure to toxic materials and hazardous waste can lead to decreases in IQ, cognitive performance and academic achievement[147].

4.2.5 CHILD PROTECTION

Hydrometeorological disasters induced by climate change and ecosystem degradation will harm children's welfare and safety[10,99]. Climate and environmental change may also change parental practices and behaviours. Because high temperatures can increase the prevalence of diseases that reduce the productivity and health of adults, it could reduce their caregiving abilities[15] and lead to children dropping out of school and taking up child labour. The impacts of climate related disasters put children at increased risk of physical instability caused by family separation, loss of settlement, displacement and stress. Families go through a lot of emotional and psychological stress in disaster situations. Children suffer the emotional trauma of being separated from their parents and are at high risk of exploitation and abuse[154–156]. More than 21,000 children and young people experienced emotional and behavioural disorders after the earthquake and tsunami in Central Sulawesi in 2018[157]. Stressful post-disaster conditions can make children vulnerable to becoming victims of physical and sexual violence. As of June 2019, there were 152 cases of violence against women and children in Central Sulawesi[158]. Cases of violence increased dramatically in areas affected by natural disasters, as in Palu, Sigi, and Donggala Regencies. Sexual abuse of children is still rampant in refugee camps for victims of the Palu earthquake[158]. Post-disaster conditions led to an increase in child marriages because of the economic conditions of parents and cases of pregnancy out of wedlock due to lack of supervision from parents in disaster evacuation sites[158]. The impacts of climate related disasters can affect the goals of SDG 3.4 (promoting mental health and well-being), SDG 5.2 (eliminating all forms of violence against women and girls), and SDG 16.2 (end abuse, exploitation, trafficking and all forms of violence against children). When the changing climate forces children to flee, their rights need to be mainstreamed by those responsible for protecting them.

Climate change is believed to be one of the main causes of population migration and conflict[159]. Even though the research and evidence linking the effects of climate change to migration and its impact on children, especially in the Indonesian context, is still limited, the impact of climate change combined with economic, political, social and demographic factors is very likely to force people (mostly adults) to migrate[160]. Economic migration is quite high in provinces with low resources like East Nusa Tenggara and West Nusa Tenggara, and in some districts including Java where parents leave children to the care of their elderly grandparents[161,162].

Environmental shocks, particularly high impact natural disasters (floods, hurricanes, droughts, earthquakes, etc.) may force children to enter the labour market to meet basic needs. It is not surprising that most children who have to work come from low income families[18]. Children who become child labourers are vulnerable to situations that interfere with their development[156]. Based on the Indonesian Child Labor Survey (2009), about 985,000 children aged 5–14, or 44 per cent of total child labourers, are exposed to hazardous conditions, such as hazardous objects, dust or steam, extreme cold or heat, fire and gas, hazardous chemicals, and equipment. The highest exposure to these harmful conditions was among those working in agriculture and manufacturing. This condition may impact the achievement of SDG 8.7 (end all forms of child labour) and SDG 4.1 (ensure that all girls and boys complete free, equitable and quality primary and secondary education).

4.2.6 SOCIAL POLICY

When discussing the impacts of weather events, rural children have reported that one or more family members have migrated for work[18]. The migration of the population from rural to urban areas results in increased population density, challenging existing infrastructure such as sanitation and transportation in the destination areas. The risk posed by climate change impacts is growing for underprivileged children because it is becoming more difficult for low income families to recover from shocks[18]. Poverty underlies the inability of children to access quality WASH, food and nutrition, healthcare, education, and social protection[18]. Exposure to high risk can cause lifelong adverse outcomes in the form of limited livelihood opportunities and/or generational poverty. Poverty reduces child development and quality of education and leads to increased hunger and stunted growth[99]. There are also gendered dimensions to poverty and socioeconomic disadvantage in Indonesia. The OECD noted that 'women are poorer across the life cycle and face disadvantages at school and, especially, in employment'[157]. According to the Global Gender Gap Report for 2018, which ranks countries according to the extent of gender inequality gaps, with 0 indicating total gender imparity and 1 indicating gender parity, Indonesia ranks 85th out of 149 countries with a score of 0.691[163]. The consequences of migration, especially for the poor, will impact the goals of SDG 1.5 (building the resilience of the poor and reducing their exposure and vulnerability to climate related extreme events and other economic, social and environmental shocks and disasters).

4.2.7 CROSS-CUTTING ISSUES: DISASTER RISK REDUCTION, GENDER, CHILDREN, ADOLESCENT DEVELOPMENT AND PARTICIPATION

Vulnerable groups (children, women, people with disabilities and the elderly) are at higher risk of death or injury during a disaster event. During the 2018 earthquakes in Lombok and Central Sulawesi, about a third of those affected were children (665,000). During the 2004 Indian Ocean tsunami, the most significant number of deaths occurred among children and people over 50. In 2020, there were over 30 million children living in disaster-prone areas[38].

DRR is 'the concept and practice of reducing disaster risk through systematic efforts to analyse and reduce the causal factors of disasters'[164]. It is aimed at preventing new, and reducing existing, disaster risks, and managing residual risks, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development[165]. The measures include reduction of exposure to hazards, reduction of vulnerability of people and property, land and environmental management, and improvement of preparedness and early warning for adverse events. Formulation and implementation of DRR strategies and policies to prevent the creation of disaster risk, reduce existing risk and strengthen economic, social, health and environmental resilience, as guided by Implementation of the Sendai Framework for DRR 2015–2030, contributes to SDGs, particularly SDG 9 (building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation), SDG 11 (inclusive, safe, resilient, and sustainable cities and communities), and SDG 13.1 (strengthening resilience and adaptive capacity to climate related hazards and natural disasters).

Women are more vulnerable to climate change impact due to poverty and disproportionate access to natural resources, opportunities, decision making, and responsibility for household livelihoods. Gender inequalities and women's vulnerabilities are exacerbated during disasters, emergencies and crises, manifesting through increased unpaid care work, high risk of GBV, human trafficking, and lack of adequate fulfilment of gender-specific needs, such as reproductive health services, breastfeeding facilities and safe toilets. Women-headed households may have increased difficulty purchasing essential goods such as food and water and getting help to construct shelter, and they

are at high risk of sexual exploitation in exchange for such resources. Women with disabilities are at risk of sexual violence, and women caring for those with disabilities are at risk of isolation and impoverishment. It is widely recognised that incidents of GBV in emergencies are under reported, even though violence is shown to increase in these situations [f] . Climate related extreme weather events disproportionately affect women and girls' ability to perform household tasks, contributing to school dropouts among girls[166]. These GBV issues affect the goals of SDG 5.2 (eliminating all forms of violence against women and girls).

Gender, determined by social norms, shapes individual experiences and abilities to recover from disaster events, in that women are often restricted to unpaid childcare and other domestic work. In most cases, when compared to men women often have less access to, and control of, a range of education, social, economic and political resources. Consequently, women often fail to receive equitable levels of information and financial recovery assistance from government or other external actors. Women-owned businesses may have difficulties with recovery due to gender exclusive policies. Banks, financial institutions and cooperatives are less likely to provide business capital loans to women than to men. Women rarely have income or assets as collateral and often lack financial literacy and formal or registered loan services. They often play minor roles in formal policymaking processes, including in the context of disaster management[g] , although evidence shows that women can play a strong role as agents of change when they are empowered with capacity building and equal access to decision making[166].

Adolescents (10–19 years) are most vulnerable to sexual abuse, exploitation and exposure to harmful influences due to disasters and migration, yet they have the potential to play an active role in making a positive contribution to climate conditions in the future[167]. UNICEF's U-Report Indonesia survey carried out in 2021 found that climate change was identified as a top concern by adolescents and young people, and they want to be agents of change. Globally, the role of young people is recognised in climate change action[168]. Young people's views on the climate crisis were recognised at COP26 where they were invited to a sharing session themed 'Youth4Climate: Driving Ambition'[169]. In Indonesia, youth forums and organizations such as the National and Regional Children's Forums (Forum Anak) under MoWECP, Adolescent Circle, various youth led CSOs, and Mitra Muda established by UNICEF, have started climate and environmental actions.

Indonesian young people have been involved in workshops and discussions related to climate change, such as a discussion forum on the NDC in 2021[170]. Young people also participate in climate change campaigns through various digital platforms managed by MoEF. The ministry has also initiated the ICIA (Indonesia Climate Innovation in Actions) movement, which can be used as a publication forum for magazines or bulletins that accommodate climate change actions from various parties including the young generation[171]. Platforms such as Forum Anak and Musrenbang aim to accommodate young people's participation, but they have not been effective in actively involving young people in policy discussions, including those related to CEE[172].

f Adopted from ProDoc Joint Program Document: Leaving No One Behind: Adaptive Social Protection for All in Indonesia

g Adopted from ProDoc Joint Program Document: Leaving No One Behind: Adaptive Social Protection for All in Indonesia

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Chapter 5: Review Of Priorities, Policies And Programmes Of The Government Of Indonesia

This chapter provides the results of a review of the inclusion of child rights and participation in CEE policies and programmes in Indonesia. It includes an assessment of the sensitivity and responsiveness of the six social sectors to CEE issues. A set of indicators was developed and employed to assess national policy documents on CEE and the six social sectors. The evaluation was complemented by stakeholder consultations through KIIs and FGDs.

The reviews employed a set of 15 indicators to assess 126 documents on national policies and programmes related to CEE and the six social sectors (see Annex 1). The indicators were developed by identifying the known components and principles in mainstreaming children's rights in CEE issues and the social sector policies (Table 5.1). The indicators are grouped into three categories:

A. Indicators to assess sensitivity of climate, environment and energy policies to children's rights and climate risks (6 indicators);
B. Indicators to assess sensitivity of climate, environment and energy policies to participation and empowerment of children and young people (4 indicators);
C. Indicators to assess sensitivity of social sector policies to climate, environment and energy risks and vulnerabilities (5 indicators).

The cross-sectoral CEE policies and programmes comprise 32 documents and were reviewed using indicators in group A (child sensitivity) and group B (participation and empowerment). In comparison, social sector policies contain 94 documents and were reviewed using indicators in group C (sensitivity to climate risks and vulnerabilities).

Stakeholder engagement through KIIs and FGDs complemented the desk review. The KIIs engaged 15 related ministries and agencies with approximately 23 directorates under the ministries and agencies associated with CEE and the six social sectors. Further information on the KII and FGDs is provided in Chapter 2.

Table 5.1 Indicators to assess child sensitivity of CEE and social sectors policies and programmes

Categories	Indicators
Indicators used to assess climate, environment and energy (CEE) policies	
A. Climate, environment and energy policy sensitivity to children's rights and climate risks	A1. Existence of references to vulnerability and/or disproportionate climate impacts on children, adolescents, and/or young people
	A2. Existence of references on specific vulnerability and/or disproportionate climate impacts, and/or commitments to marginalized and disadvantaged children, adolescents and/or young people, including children with disabilities
	A3. Existence of references to specific gendered vulnerability and/or disproportionate climate impacts on children, adolescents, and/or young people
	A4. Existence of commitments on social sectors (water, sanitation and hygiene (WASH); food and nutrition; health; education; child protection; and social policy/ protection)
	A5. Existence of specific commitments for children
	A6. Existence of commitments on DRR
B. Children and young people's participation and empowerment	B1. Existence of reference to children and young people's participation in CEE policy and action
	B2. Existence of reference to children and young people as agents or drivers of change
	B3. Existence of reference to child-friendly access data, information and communication systems
	B4. Existence of commitments to empower children and young people for participation in CEE policies and action
Indicators used to assess social sector policies	
C. Social sector policy sensitivity to climate, environment and energy risks and vulnerabilities	C1. Existence of references to historical and future impacts of climate change and/or environmental degradation
	C2. Existence of references and/or commitments on energy transition
	C3. Existence of references and/or commitments on protection and/or recovery of the environment
	C4. Existence of references and/or commitments on climate change mitigation
	C5. Existence of references and/or commitments on climate change adaptation, resilience and/or DRR

5.1 REVIEW OF CEE POLICIES AND PROGRAMMES

Thirty-two documents on CEE policies and programmes were reviewed using 10 indicators in groups A and B (Figure 5.1), as further detailed in Annex 2, for their consideration of children's rights and sensitivity to climate risks and vulnerabilities. The indicators assessed the following aspects of policies and programmes:

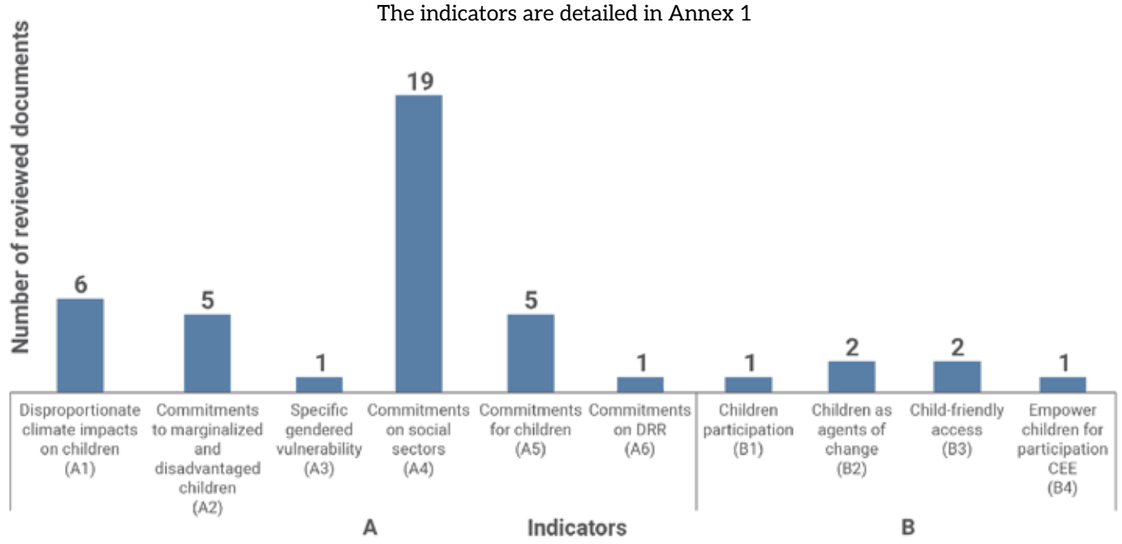
- Sensitivity of climate, environment and energy policies to children's rights and climate risks (A)
- Participation and empowerment of children and young people (B).

Summary of review:

- Most CEE policy documents include general commitments on CEE action in social sectors (A4).
- As shown by indicators A1 and A5, CEE documents provide considerable references regarding the needs, rights, engagement and vulnerability of children and young people. The low carbon and climate resilience development plan particularly gives due consideration to all community groups, including children. CEE documents encourage collaboration between all stakeholders including government, the private sector, community, media and academia (also known as pentahelix collaboration) to engage in climate actions. However, in the context of collaboration, children and young people are only mentioned as a group vulnerable to climate change impacts. Limited considerations are given to marginalized children and young people (e.g., indigenous children and children with disabilities), and gender perspectives, as assessed by indicators A2 and A3.
- Only a few documents refer to the inclusion of child-sensitive commitments in programmes and policies (B1, B2, B3, B4). This is revealed through the result of assessment using indicators on climate change impacts, energy security, environmental quality, social sectors related to CEE policies and programmes, DRR, public infrastructure, and access to information systems and data (indicators A4, A5 and A6). This evaluation indicates the need to strengthen the inclusion of children and young people's rights in the priority agenda of development policies, regulations and programmes on cross-sectoral CEE issues.
- The majority of the regulations concerning CEE policies and programmes did not thoroughly discuss participation and empowerment of children and young people (indicators B1-B4). Assessment of indicators B1 and B3 shows less involvement of children and young people in updating policy documents and decision making in CEE policies, including assessing data, information, and communication systems. Only a few documents mentioned children and young people as drivers of change, as well as their participation in CEE policies and action (B2 and B4).

Figure 5.1 The Number of Documents on CEE Policies Assessed by the 10 Indicators

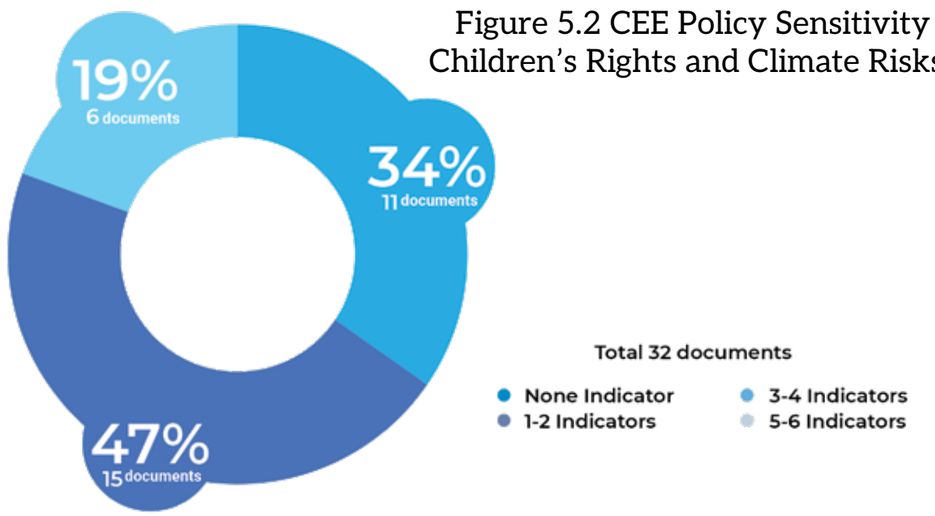
The indicators are detailed in Annex 1



The sensitivity of CEE policies to children's rights and climate risks (Figure 5.2):

- No CEE policy has high sensitivity as none of the documents meet 5 or more indicators
- 19 per cent of policies have medium sensitivity, meeting 3-4 indicators
- About half of the total documents (about 47 per cent of documents or almost half of the policies) have low sensitivity, meeting only 1-2 indicators
- About 11 CEE policies (34 per cent of documents) do not meet any of the indicators in group A.

Figure 5.2 CEE Policy Sensitivity to Children's Rights and Climate Risks (A)



The sensitivity of CEE policies to children and young people's participation and empowerment (Figure 5.3):

- None of the CEE policies is categorised as high sensitivity as none of them meet 4 or more indicators
- Only 1 CEE policy has medium sensitivity, meeting 2-3 indicators
- About 4 documents, or about 13 per cent of policies, have low sensitivity, meeting only 1 indicator
- Almost all CEE policies (84 per cent) are not sensitive to the participation and empowerment of children and young people (no indicator met).

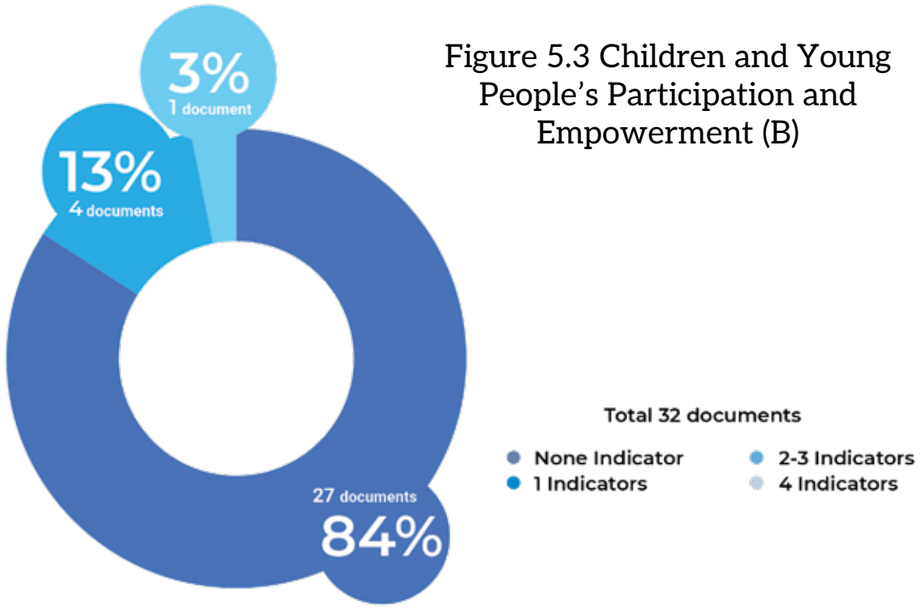


Figure 5.3 Children and Young People's Participation and Empowerment (B)

5.1.1 CLIMATE RELATED POLICIES AND PROGRAMMES

Summary of review:

- Several documents briefly mention vulnerability of children related to social sectors, their rights, needs, and participation in climate change related programmes (A1, A4, A5, B1).
- A number of systems supplying relevant data and information are available, such as the Vulnerability Index Data Information System (SIDIK) and the National Registry System, but they mostly do not measure or monitor climate change impacts on children (A4-A6, B3).
- There are a number of climate change adaptation programmes in the form of capacity building and pilot projects for different social sectors, some of which have been supported by international cooperation, but these projects and programmes do not explicitly address children's rights (A5).

- CEE policies have not included plans for empowerment of young people/children with disabilities and children's participation as drivers of change (A2, A3, B2).
- Programmes on climate assessments, monitoring and evaluation, such as the Climate Village Programme and Climate Change Vulnerability Assessment, have been developed, but with limited attention to the needs of children (B1-B4).
- Making information available and accessible to the public with different levels of knowledge on climate change is mentioned, but accessibility for children and young people has not been considered (B2).
- Specific commitments on children (A5), advocated by MoEF Working Group on Climate Change have been mainstreamed, including the inclusive climate plan for children, young people and people with disabilities. However, children with disabilities have not received proper consideration (A2 and A3).

At the national level, the policy and strategic responses to issues related to climate change are anchored primarily within the NDC, LTS-LCCR 2050, and Climate Resilience Development Policy 2020–2045. The updated NDC promotes climate resilience in food systems (e.g., sustainable agriculture, climate adaptive technologies for sustainable production of agricultural crops), water systems (e.g., climate change adaptation in watershed management), energy systems (i.e., improved energy efficiency and consumption patterns), and ecosystem and landscape resilience through protection and restoration of key terrestrial, coastal and marine ecosystems (A4). The NDC Roadmap on Adaptation details the required strategies for enforcing the NDC commitments. Efforts to mainstream gender-based climate change adaptation and vulnerable groups are also mentioned to support increasing community resilience (A2, A3). To build effective community level climate resilience, there is a stated commitment to strengthen community engagement in development planning process at all levels, through development and implementation of mechanisms for community participation that considers vulnerable groups, gender equity and children (B1, B2, B4). Yet, despite stating consideration towards intergenerational equity and the needs of vulnerable people including children, the NDC Roadmap does not explicitly estimate the impact of these interventions on children.

Indonesia has stated its commitment to reduce GHG emissions by ratifying the Paris Agreement through Law No. 16/2016. The achievement of the national targets is determined through Presidential Regulation No. 98 of 2021 concerning the Implementation of Carbon Economic Values for Achieving Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development. However, the Regulation does not directly state the involvement of children, including their roles as both a vulnerable group and agents of change (A1, A2, A3). Similarly, the Minister of Environment and Forestry Regulation No. 84/2016 on the Climate Village Programme as a national flagship programme led by MoEF to increase community participation on climate change adaptation and mitigation actions, has not explicitly clarified the involvement of children and their role, despite its known indirect impacts on children as members of the community (B1-B4).

5.1.2 ENVIRONMENT POLICIES AND PROGRAMMES

Summary of review:

- Generally, environmental protection and management efforts based on the principle of justice proportionally for every citizen, across regions, generations and genders, are presented in several environment related documents (A5).
- Integrated information systems such as the forest fire information system are developed but do not include data and information pertaining to child-specific risks and vulnerabilities (A4, A6, B3).
- Local communities, including child groups, have the most comprehensive opportunity to play active roles in environmental protection and management. This is advocated by initiatives such as the Adiwiyata School and the Kalpataru Award (A4, A5), both implemented by MoEF. The Adiwiyata School programme encourages participation of children and young people as drivers of change in environmental protection, whereas the Kalpataru Award, which aims to encourage civil societies and the leadership of subnational governments in environmental protection, has not engaged children (B1, B2).

Some of the environmental policies and programmes have mentioned commitments to generate knowledge and high quality evidence on risks by enhancing capacity building in risk assessment. However, there is no technical guidance and guidance on integration of environment and social sectors with a focus on children (A1, A4, A5).

Indonesia has developed several regulations and policy responses to address environmental issues. The MoEF Regulation No. 27/2009 on Strategic Environmental Studies informs some commitments on social sectors including health, social policy and disaster (A4). The MoEF Regulation No. 1/2021 on Performance Rating Programme in Environmental Management provides incentive for good water management in conservation areas. Law No. 18/2013 on Management and Prevention of Forest Degradation regulates prevention and eradication of forest destruction to establish sustainable environmental quality. However, these regulations do not contain explicit acknowledgement or empowerment for the role of children and young people (B1-B4).

Indonesia's NDC document has identified specific plans aimed at environmental problems as both climate change adaptation and mitigation measures. The NDC Adaptation Roadmap has demonstrated the commitment to reduce environmental degradation through adaptation strategies focusing on landscape management, ecosystem recovery and green jobs, while also considering children as part of vulnerable groups (A1, A2, A4). The NDC Roadmap on Mitigation has stated a commitment to ensure environmental sustainability through proper management of related sectors such as waste, agriculture and industry. However, these documents do not contain explicit contents demonstrating consideration of children or the impact of climate change and climate action on their well-being (A1, A2, A3).

The National Action Plan (NAP) on adaptation concentrates on addressing climate change adaptation through the use of green areas in urban areas accessible to vulnerable groups, including children (A3, A6). The NAP on mitigation and GHG emission reduction emphasises efforts to reduce emissions through low carbon and green development. Specifically, green schools focusing on children and young people have been identified as an action to increase efforts in enhancing environmental quality (B2, B4).

The Climate Resilience Development Plan 2020–2045 addresses an information system to detect environmental pollution, payment for ecosystem services, and integrated residential areas. It includes efforts such as groundwater replenishment for coastal regions and islands with limited freshwater resources. Development and application of Online Monitoring Technology are also promoted to detect river water levels, groundwater levels and environmental pollution or damage.

The Voluntary National Report records schemes such as Adiwiyata Programme, Saka Kalpataru, and Saka Wanabakti Scouts to enhance community participation in environmental management through education and conservation efforts.

Policy directions for industries and company initiatives to preserve the environment exist, such as through green industry promotion and implementation through efficiency and sustainable use of resources in production processes. However, companies typically run programmes focused on training and assistance to workers, or CSR programmes, while direction and results in ensuring products resulting from this green production are child-friendly remain unclear (A1, A3, A5, A6).

5.1.3 ENERGY RELATED POLICIES AND PROGRAMMES

Summary of review:

- Energy is managed based on the principles of benefit sharing, efficiency, justice and community welfare consideration. However, these policies and programmes do not specifically acknowledge children as vulnerable groups or address their specific needs (A1, A2, A3, A5). Although cross-sectoral national energy policies are implemented with support from related stakeholders and parties, commitments on energy transition in various social sectors are limited (A4, A5).
- The government guarantees public access to information systems about energy in a transparent manner, but the implementation is not sensitive to children and young people (A2, A3).
- Child-sensitive related data and systems in the energy sector are limited (B1, B3).
- Opportunities for child participation in the energy sector are presented through various schemes and initiatives such as the Solar Power Initiative Movement and Conservation Goes to School, but the involvement of children with disabilities remains limited (A1, A2, A3, B1, B2, B4).

The national energy policy aims at energy management based on the principles of justice, sustainability and consideration for the environment to bring about domestic energy independence and security as stated in Law No. 30 of 2007. Community level participation is empowered by the Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 16/2020 concerning the Strategic Plan of the Ministry of Energy and Mineral Resources (MEMR) for 2020–2024. This strategic plan is guided by Presidential Regulation No. 22/2017 regarding the General Plan of National Energy in creating equitable and fair access to energy for all Indonesians through a spatial approach based on complete and accurate data and information. The regulation also determines the energy prices in accordance with economic justice, as well as creating public access to information on national energy policies in a transparent manner (A5).

Despite having a mixed energy use policy, Indonesia is strongly committed to the development of clean energy sources which will eventually set the country on the path to decarbonisation. Government Regulation No. 79/2014 concerning National Energy Policy focuses on development of renewable and sustainable energy resources

such as geothermal, wind, bioenergy, solar and hydropower, as well as movements and differences in sea layer temperature. Through this Government Regulation, the government aims to transform the energy source by 2025 and 2050. The primary energy supply mix is expected to consist of at least 23 per cent renewable energy in 2025 and more than 31 per cent in 2050, less than 25 per cent oil in 2025 and more than 20 per cent in 2050, a minimum of 30 per cent oil in 2025 and less than 25 per cent in 2050, and a minimum of 22 per cent gas in 2025 and less than 24 per cent in 2050. These policies and their resulting changes bear implications for children, yet relevant documents do not contain explicit statements concerning the role of children or their participation as agents of change (B2, B4).

A number of policy documents and programmes also provide information on energy access in Indonesia. The MEMR has also shown commitment towards action programmes focusing on creating awareness for children. This commitment is illustrated through the implementation of the energy saving programme that involved children in competitions, games, comics and sharing. However, the commitment has not been explicitly written into its climate policy (A1).

5.2 REVIEW OF SOCIAL SECTOR POLICIES AND PROGRAMMES

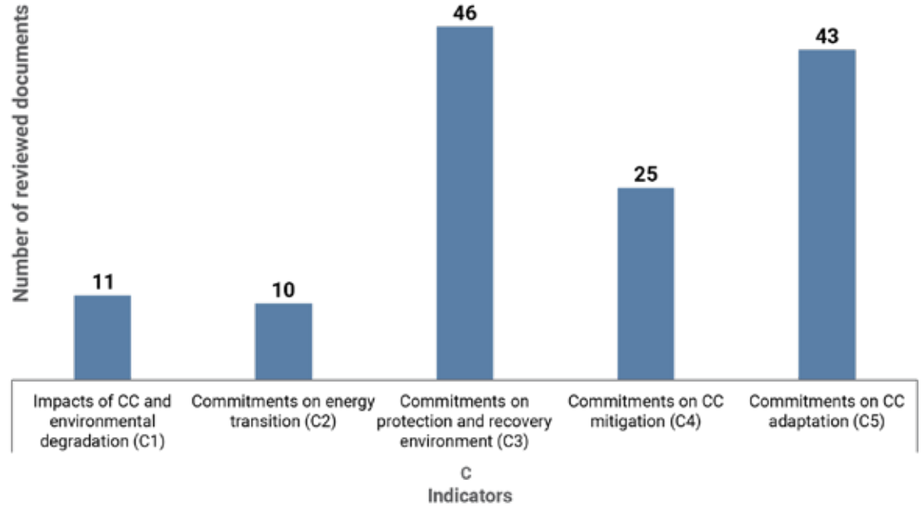
A compilation of 94 documents on social and cross-cutting sectors was reviewed using 5 indicators (Figure 5.4), further detailed in Annex 1. The indicators assessed social and cross-cutting policies and programmes on the sensitivity of social sector policies to climate, environment and energy risks and vulnerabilities I.

Summary of review:

- Almost half of the reviewed documents indicate general commitment on environmental protection and recovery (C3).
- Nearly 25 per cent of the reviewed documents display commitments on climate change mitigation (C4) and half of the total documents include commitments on climate change adaptation, resilience, and/or DRR (C5). Climate smart development and disaster management are also priority considerations in many documents related to low carbon development and climate resilience.
- About 10 out of 94 documents highlight commitments towards sustainable energy transition (C2), including energy needs, planning and commitment on renewable energy and the energy generation industry.
- Impacts of climate change and environmental degradation are presented by 11 social sector documents (C1).

Figure 5.4 The Number of Documents on The Social And Cross-Cutting Sector Policies Assessed by The 5 Indicators

The indicators are detailed in Annex 1



The sensitivity of social sector policies to CEE risks and vulnerabilities (Figure 5.5):

- Only 2 documents (2 per cent) have high sensitivity to CEE risks and vulnerabilities, meeting all 5 indicators
- A total of 16 policies (17 per cent) have medium sensitivity, meeting 3-4 indicators
- More than half of the social sector policies (55 per cent) have low sensitivity to CEE risks and vulnerabilities, meeting only 1-2 indicators
- About 26 per cent of policies (24 documents) are not sensitive to CEE, meeting none of the indicators

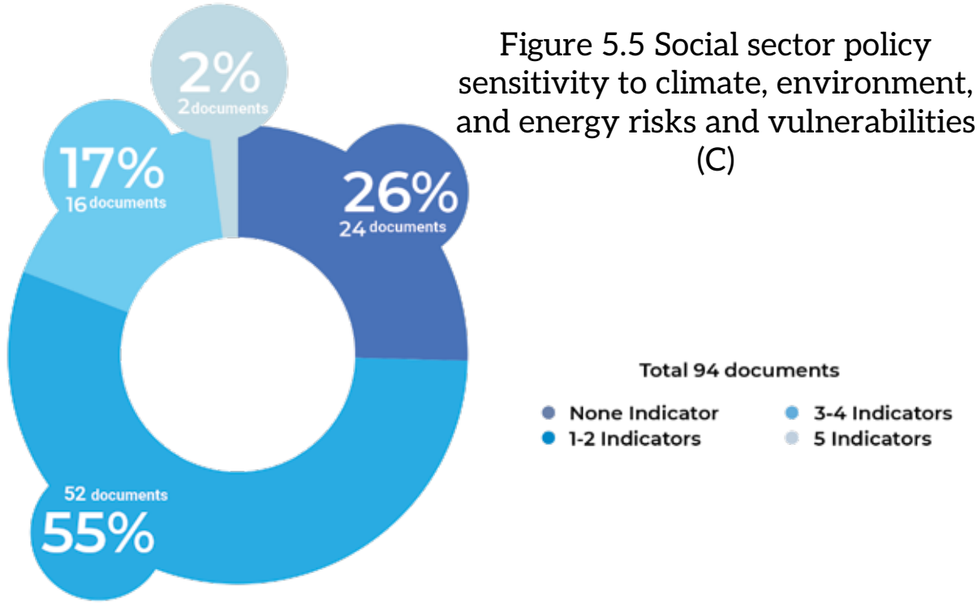


Figure 5.5 Social sector policy sensitivity to climate, environment, and energy risks and vulnerabilities (C)

WATER, SANITATION AND HYGIENE (WASH)

Summary of review:

- The WASH sector is inherently concerned with improving environmental quality affecting water supply and safety, including protection and recovery of water sources and sanitation services (C3) through community-based water and sanitation programmes such as Provision of Community-Based Drinking Water and Sanitation (PAMSIMAS), Community-Based Sanitation (SANIMAS), and Community-Based Total Sanitation (STBM).
- Policies and programmes on water resources management consider the principle of environmental sustainability, energy transition, and climate change adaptation (C2, C3, C4), but commitments to climate change mitigation are still limited (C4).
- WASH policies are applied with high consideration for DRR but have not explicitly ensured child-specific components of DRR (C5).
- There are limited references on historical and future climate extremes, hazards and impacts for WASH policies and programmes (C1).
- Children have limited access to climate, energy and environmental education pertaining to WASH (C2, C3, C4, C5).

Over the last decade, Indonesia has developed several regulations to address WASH related issues. MoEHR Regulation No. 20/2017 concerning Guidelines for Determining Groundwater Acquisition Value, determines the value of groundwater acquisition and the level of environmental damage to groundwater extraction and/or utilisation. Ministry of Health (MoH) Regulation No. 3/2014 on Community-Based Total sanitation acts as an effort to improve environmental quality. In the same vein, MoEF Regulation No. 56/2015 on Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Health Care Facilities regulates the quality of the environment with respect to health services and wastes. Similarly, MoH Regulation No. 492/2010 on Drinking Water Quality Requirements regulates drinking water quality with parameters to ensure that water supply is safe for the health of the public including children (e.g., not containing disease vectors, chemicals, etc., to prevent water-borne diseases). The Ministry of Public Works and Housing (MoPWH) Regulation No. 04/2017 on Domestic Wastewater Management aims to secure public health and quality of water and environment from pollution due to unsafe sanitation. On water related disasters, Presidential Regulation No. 33/2011 on National Policy on Water Resources Management establishes a mechanism for managing disasters caused by water as part of the water resources management effort. MoEHR Regulation No. 17/2019 on Water Resources was passed to prevent disasters caused by the destructive power of water. Most of those documents accommodate the commitments on protection and/or recovery of the environment (C3).

Some technical guideline and roadmap documents related to WASH contain relevant information on the CEE issues. The National Drinking Water Quality Supervision Roadmap 2020-2030 explored environmental health issues related to CEE (C3, C5). The General Guideline on Community-Based Water Supply and Sanitation also accommodates some CEE aspects in conducting systematic evaluation in handling, reducing and managing environmental risks, promoting environmental benefits and realising transparency, through public consultations with affected residents and other stakeholders (C2, C3). The technical Guidelines for the PAMSIMAS, SANIMAS Technical Instructions, and STBM all have the capacity to improve environmental quality (C3, C5).

The National Adaptation Plan on climate change affirms the commitment of the government to protecting the people and environment against the impacts of climate change. On this basis, water resource management is directed to improve environmental quality, develop environmental water security, implement community-based sanitation, and provide clean water. The Climate Resilient Development Policy 2020-2045 also encourages adaptation efforts on water and wastewater management. In the updated NDC, activities related to WASH are 1) promoting climate resilience in water, 2) enhancing the management capacity of urban wastewater, 3) ensuring the availability and sustainable management of water, 4) improving water management systems for increased resilience to climate change, and 5) integrating rehabilitation of degraded land, soil and water bodies. The Long-Term Strategy (LTS- LCCR) document encourages the improvement of peatland and water management, the use of aerobic treatment for septic tanks, recycling (3R), waste banks, Intermediate Treatment Facilities, composting (compost house), and biodigester for municipal solid waste. Generally, the WASH sector already considers CEE issues integrated into regulations and policies (C2, C3, C4, C5). Ultimately, the upcoming operational framework for climate resilient development in the WASH sector, supported by UNICEF, can be used to strengthen WASH system resilience.

FOOD SECURITY AND NUTRITION

Summary of review:

- The commitment to climate adaptation and mitigation for food security and nutrition is reflected in sustainable agriculture and agricultural waste management (C4, C5).
- Policies have raised attention on climate-smart agriculture and environmental concerns (C1, C2, C3).
- Commitments to energy and addressing food security and nutrition related policies (C2) are limited.
- Child nutritional improvements, including preventing obesity, stunting and malnutrition, are considered CEE issues (C2, C3, C4).
- There is limited capacity in responding to CEE risks on food security and nutrition among stakeholders. There are efforts to increase understanding of nutrition among children, but discussion on the correlation between food security, nutrition and CEE issues is limited (C1, C2, C3).

At the national level, development of food and nutrition related regulations has considered CEE and children as part of vulnerable groups. Law No. 18/2012 on Food Sovereignty, Food Independence, and Food Security recognised children as a nutrition-vulnerable community. MoH Regulation No. 41/2014 on Food-Based Dietary Guidelines has included children as a prioritized group to obtain optimal nutrition. However, this regulation needs to clarify the sustainability aspects of healthy diets. Similarly, BPOM Regulation No. 26/2021 concerning information on nutritional values on processed food labels does not include any scheme intended to identify and promote food supply chains based on sustainability criteria.

Another important feature in several food and nutrition policy documents is the inclusion of climate-smart agriculture (CSA). Law No. 41/2009 on Sustainable Agriculture Land Protection informs that the government is responsible for the implementation of land and water conservation which includes protection, preservation, quality management

and control of pollution of land and water resources (C3, C4, C5). The General Plan for the Development of Farmers Corporation-based Food Estate Areas 2021 is concerned with climate and environment. The strategic plan of the Ministry of Agriculture (MoA) 2020–2024 and 'oA's Decision No. 259/2020 regulate the achievement of sustainable living environments.

The RAN-API presents various agricultural practices related to CSA such as precision farming methods, intermittent irrigation, livestock manure for plants, and a mixed cropping system. Indonesia's Climate Resilient Development Policy 2020–2045 contains aspects related to food security and nutrition by encouraging sustainable and resilient agricultural practices such as the use of weather modification technology to prevent flooding and drought on agricultural lands, provision and use of organic fertiliser, and adoption of sustainable pest control systems. CSA was also featured prominently in the RAN-API.

The Voluntary National Report and the SDG assessment report have also recommended several activities related to food and nutrition. These activities are generally meant to increase mastery of technology and innovation to strengthen food systems and improve resource efficiency through a circular economy approach. Government Regulation No. 17/2015 on Food Security and Nutrition explains the determination of food diversification rules which must remain environmentally friendly and based on local wisdom. This approach can eventually help to achieve food security and enhance food fortification and community nutrition in Indonesia.

The government has also shown commitments to ensuring healthy and balanced diets for children through efforts to create awareness on the importance of exclusive breastfeeding, growth monitoring programmes for children under 5, coverage of vitamin A supplementation for children aged 6–59 months, iron and folic acid supplementation for adolescent girls, and supplementary feeding for chronically energy deficient and underweight children. However, climate change and environmental degradation, which is expected to significantly affect food security and healthy nutrition, has not been explicitly mentioned in either the National or Sub-national Action Plans for Food and Nutrition (Rencana Aksi Nasional Pangan dan Gizi (RAN-PG)) and (Rencana Aksi Daerah Pangan dan Gizi (RAD-PG)). No noticeable efforts have been made towards linking food security and nutrition to issues of sustainability.

HEALTH

Summary of review:

- The Environmental Health Quality Standard is directed to adapt to, and mitigate, climate change in the health sector (C4, C5).
- The primary adaptation strategy of the health sector is aimed towards enhancing situation analysis, planning, implementation, monitoring and evaluation, follow-up plans, increasing public understanding, and developing information systems (C1, C5).
- Health risk identification is performed by considering historical and future climate conditions, especially for infectious diseases, nutrition, disaster events, non-communicable diseases, and mental disorders (C5). However, the climate proofing or code risk integration is still limited (C1).
- Some documents mention the commitments on energy transition in the health sector (C2).
- There is noticeable coordination and communication in the health sector in areas of environmental health and climate risks; however, policies and programmes are still not adequately streamlined (C3).
- Health related data, especially relating to CEE issues, are not updated (C1, C2, C3).

Government Regulation No. 66/2014 on Environmental Health stipulates national policies and strategies for environmental health providers and establishes national policies for adapting the health sector to climate change (C3, C5). Programmes coordinated by MoH are also closely related to child'en's health, including the Healthy Living Community Movement, Stunting Prevention, and TOSS TBC (Find and Treat Tuberculosis Until Cured). However, these programmes do not include interventions that explicitly consider child'en's health in relation to climate change (C1). The ministry has also issued two regulations, MoH Regulation No. 1018/2011 on Climate Change Adaptation Strategies and No. 35/2012 on Guidelines for Identifying Risk Factors to Climate Change, but they do not clearly explain climate risks specific to children (C1).

In Indonesia's NDC document and its update, health has also featured prominently as one of the prioritized social sectors. However, the documents only included general strategies such as climate awareness campaigns, enforcement of standards in human settlement, and environmental health to enhance community level capacity in adapting to climate change. There is no specific effort focusing on children's health mentioned in the NDC documents.

At the sectoral level, the 2014 National Action Plan on Adaptation (Rencana Aksi Nasional Adaptasi Perubahan Iklim (RAN API)) that acts as a guidance document for climate change adaptation for each priority sector including the health sector, encouraged strategies to protect community and environmental health (C3). These strategies also include encouraging active participation of local youth groups in activities to reduce vulnerability at the community level. The Climate Resilient Development (Pembangunan Berketahanan Iklim (PBI)) Policy 2020-2045, launched in 2021 as an update of the RAN API, endorses improvement of health facilities and services, disease prevention, and control of disease outbreaks, as well as other actions such as enhancing residential environmental health, early detection of disease outbreaks, and the health information system. Overall, adaptation strategies in the health sector are commendable, but the focus on children's health and actions to address children's rights related to health needs to be strengthened (C5).

The MoH already has the National Action Plan for Climate Change Adaptation in the Health Sector (2019), and the Evidence-based Data and Information on the Impacts of Climate Change on the Health Sector in Indonesia (2021). These two documents have not only explicitly discussed the link between climate change and health, but also categorised children as a vulnerable group to certain diseases such as acute respiratory infection, diarrhoea and nutritional disorders (C1).

EDUCATION

Summary of review:

- The implementation of the Safe School programme is to recognise and protect child'en's rights by providing an environment that ensures a smooth learning process, as well as health, safety and security of students (C3).

- Commitments to ensuring safe and disaster resilient classrooms from the school construction stage to DRR education for teachers and students are present in education policies (C5).
- Student activities in low emission and climate resilience are explored in several policies and regulations (C4, C5), but advocacy and participation are limited.
- CEE related programmes in the education sector are explored at the school, but there is less commitment to continuing best practices outside school, although the Freedom to Learn programme (Merdeka Belajar) encourages action-oriented projects as a way for students to apply lessons (C1, C2, C3).
- CEE related data in the education sector needs to be strengthened by data surveillance systems to decrease the CEE risks (C1, C2, C3).

The Indonesian government's Ministry of Education, Culture, Research, and Technology (MoECRT) has developed several regulations indicating its commitment to the importance of child education. Law No. 20/2003 on the National Education System regulates the national education system from elementary to tertiary level. This law identifies child education as a human right and emphasises public participation. However, issues related to CEE are not included (C1, C2, C3). In an effort to mainstream disaster response into national education, MoECRT Regulation No. 33/2019 on Implementing Disaster-Safe Schools has included disaster risk management and its Safe School technical guideline has included basic knowledge of climate change which can be strengthened with DRR education against specific climate related disasters (C5).

In its continuous effort to tackle climate change, the government has also launched policy documents on climate change education with the development of the National Action Plan on Climate Information, Public Health, and Climate Curriculum. The Climate Resilient Development Policy 2020–2045 document also put particular emphasis on education and advocacy regarding climate change threats by conducting early education about climate cha'ge's impact on health and the environment. Other documents, such as the updated NDC and the LTS-LCCR document, also identified education and training activities and awareness campaigns strengthening capacity building against climate change and disaster risk.

The Indonesia Education Roadmap 2020–2035 recognises CEE issues (water crisis, climate crisis, sea level rises) as part of the global trends that shape the world's future and learning. The Freedom to Learn programme (Merdeka Belajar) responds to these issues in two of its strategies: curriculum strengthening and constructing safe, disaster-responsive and damage-free schools. The Strategic Plan of MoECRT 2020–2024 considers the climate and energy and environmental sustainability. The Safe School Programme Roadmap 2020–2024 complements this and supports the achievement of four Sendai Framework priorities for disaster risk mitigation 2015–2030: understanding disaster risk; strengthening disaster risk management; investing in risk reduction for disaster resilience; and improved preparedness and reconstruction in the post-disaster recovery, rehabilitation, and reconstruction process. The Voluntary National Report recommends synergising the Freedom to Learn programme with current government-led education programmes such as Pancasila Students, Early Literacy, Childhood Training Materials, Play-Based Learning, Life Skills Education, and Safe Place Learning. The MoECRT also produces pocketbooks called Buku Saku Orang Tua Hebat to help caregivers to advise children at different levels of education.

CHILD PROTECTION

Summary of review:

- Some child protection related documents, including the Child Protection Law, mention CEE issues, such as the importance of protecting the environment and climate action for children though parental education (C1-C5).
- The child-friendly city policy includes climate and disaster resilience and a healthy environment as indicators and action plans (C1, C3).
- Child protection policies and programmes have limited commitments to DRR and climate proofing (code risk) (C5).
- The task of child protection related to CEE issues is still limited to a few ministries and agencies and there has been limited capacity, coordination and communication to mainstream the issues among stakeholders (C1-C5).

Indonesia has ratified the CRC through Presidential Decree No. 36/1990. The country is also committed to supporting the movement to create a 'World Fit for Children'. Several regulations also evidence the concern for fulfilling child'en's rights and protection, such as: 1) Law No. 35/2014 on amendments to Law No. 23/2002 on Child Protection, 2) Law No. 17/2016 on the stipulation of Law No. 1/2006 on the second amendment to Law 23/2002 on Child Protection, and 3) Law No. 19/2011 on the Ratification of the Convention on the Rights of Persons with Disabilities, including children, to get equity and equality for their basic needs. MoFA's Strategic Plan 2020–2024 commits to a policy direction of strengthening Indonesia's leadership in protection of children and women's rights through international cooperation and implementation of related international conventions. Nevertheless, despite the robustness and comprehensiveness of these laws, they have hardly linked child issues with CEE issues in Indonesia (C1, C2, C3).

From a ministerial point of view, the strategic plans of MoWECP are primarily focused on the minis'ry's sectoral mandate. For example, the ministry set five priority issues for developing wo'en's empowerment and child protection in the 2019–2024 term. The five priorities are: (1) increasing wo'en's empowerment and entrepreneurship, (2) increasing the role of parents in child'en's education, (3) reducing violence against women and children, (4) reducing child labour, and (5) prevention of child marriage. These issues do not specifically address child protection from the CEE point of view (C1, C2, C3). In contrast, the LTS-LCCR document addresses intergenerational issues and other concerns relating to people in vulnerable situations, including children, the elderly and people with disabilities. The government's National Action Plan on Child-Friendly Cities and Municipalities (Rencana Aksi Nasional Kebijakan Kabupaten/ Kota Layak Anak) 2021–2024 (C4, C5) will provide a solid basis for specifically addressing the needs of children under LTS-LCCR 2050 and Indone'ia's Vision 2045.

Generally, child protection in Indonesia is implemented through specific policies and programmes including Child-Friendly Schools (Sekolah Ramah Anak/SRA), Child Creativity Centres (Pusat Kreativitas Anak (PKA)) and Community-Based Integrated Child Protection (Perlindungan Anak Terpadu Berbasis Masyarakat (PATBM)). SRA are formal and informal education units capable of fulfilling rights and special protection for children, including a complaint mechanism for handling cases in the education unit with limited connectivity with CEE related issues (C1, C2, C3). Child Creativity Centres are a medium for children to develop their creativity according to their individual interests, talents and intelligence levels for self-development and actualisation. Community-Based Integrated Child Protection is a network of citizens at community level that integrates work among the community, village officials or sub-district apparatus, the

business world, the media, and children regarding the principle of child'en's rights to achieve child protection goals. The lack of CEE issues in the programme indicates the need to strengthen CEE awareness (C1-C5).

SOCIAL POLICY

Summary review:

- Cash transfer programmes have been implemented through various mechanisms, but these are not integrated with child-sensitive commitment to CEE, DRR and climate proofing (C1, C2, C3).
- There are poverty alleviation mechanisms from various policies and programmes through the fulfilment of basic needs, but they do not pay any particular attention to sector-specific child vulnerabilities (C5).
- Various parties and stakeholders manage commitments on DRR, especially in the context of response, but there is less explicit commitment to addressing climate related disasters (extremes, hazards and impacts), including through climate change mitigation and adaptation (C1, C4, C5).
- SDG achievements involve vulnerable groups, including the poor, women, children and people with disabilities. However, there is less participation from children and youth groups on CEE related issues (C4, C5).
- Data and information for climate risk related to the social sector focusing on children are also scarce and limited in scope (C1).

Over the years the Government of Indonesia has issued both general and specific regulations related to social policy issues. An example is the effort of the government to develop a school building safety programme against disaster through the Ministry of Home Affairs (MoHA) Regulation No. 33 of 2006 on General Guidelines for Disaster Mitigation. This regulation creates an education campaign programme on disaster risk for schoolchildren to raise their awareness and readiness to deal with natural disasters. The MoHA Regulation No. 101/2018 on Minimum Service Standards for District or City Disaster Management describes the fulfilment of basic needs and preparation of infrastructure related to basic needs in health, food, water and sanitation before and during a disaster (C5).

The Ministry of Social Affairs (MoSA) has made efforts to improve child data quality of Integrated Data on Social Welfare (Data Terpadu Kesejahteran Sosial (DTKS)) concerning disaster events (C5). However, children with disabilities are not registered so they may not receive social assistance in the case of a disaster. The provision of cash transfers has not been differentiated by gender. MoSA Regulation No. 20/2017 has focused on routine rehabilitation of environmental infrastructure. It can therefore be said that most regulations concerning social affairs have considered the environmental issues explicitly (C3), while others simply do not mention them (C1, C2).

Social aid mechanisms in Indonesia (including cash transfers) are used to aid recovery during and after crises. Guidelines for the implementation of the Family Hope Programme (Program Keluarga Harapan (PKH)) aim to provide pregnant women and children with access to health facilities and services, and access for school-age children to educational facilities and services. The current Family Hope Programme benefits are also directed to cover persons with disabilities and the elderly in an effort to maintain their social welfare. In addition, Indonesia already has an Adaptive Social Protection scheme as a social protection programme to respond to shocks due to climate change or disaster (C4, C5). It is understood that the National Development Planning Agency (NDPA/BAPPENAS) plans to integrate this scheme with the regular social protection programme which does not explicitly consider children.

The Presidential Regulation No. 25/2021 rooted in the first amendment of the Indonesian Child Protection Act (23/2022) operationalises the Child-Friendly City (Kabupaten/ Kota Layak Anak (KLA)) policy. The Regulation, complemented with a National Action Plan, aims to drive cities across the country to work towards 'Child-Friendly Indonesia (Indonesia Layak Anak)' by 2030. The action plan aims to fulfil five child rights supported with appropriate institutional arrangements: civil rights and freedom; rights to family and alternative care; rights to health and well-being; rights to education, play and leisure time, and cultural activities; and rights to special protection, with 140 cross-sectoral actions and 24 indicators. Review of policies and programmes related to Child-Friendly City found that the policy is child rights-based but has not reflected child-sensitive commitments related to environmental quality and climate action in urban areas, including climate related DRR, although indicators related to the existence of climate risk assessments and climate resilience villages and disaster management are included (C1, C2, C3). Some of the action indicators are related to health, nutrition, WASH, education, social policy and social protection, and the child protection framework. The Child-Friendly City action plan includes specific climate actions particularly 'building climate resilience of cities or regencies' that require availability of data and information on climate change risks and vulnerabilities, climate change adaptation strategies at the city and regency level, and climate resilient village (C4, C5). There is a specific indicator in the Child-Friendly City pertaining to DRR but not specifically climate related (C5). Despite further evidence needed for the implementation, the Child-Friendly City programme acknowledges the importance of considering the views, voices and opinions of children in the programme cycle. However, it does not specify the kind of involvement, nor the stage at which children and young people are involved (C4, C5).

CROSS-CUTTING ISSUES: DRR, GENDER, CHILDREN AND ADOLESCENT DEVELOPMENT AND PARTICIPATION

Summary of review:

- Actions on climate change adaptation, mitigation and disaster management need to be strengthened to reduce the risk of climate change and disasters (C1, C4, C5).
- The integrated information system on disaster risk and adaptation has been developed but it does not cover the child-sensitive climate change impacts (C5).
- Coordination and collaboration among stakeholders occurs through DRR forums at subnational level, which also adhere to child-sensitive commitments to DRR (C5).
- The Disaster Safe Education Unit (Satuan Pendidikan Aman Bencana (SPAB)) involves references to historical and future climate impacts (C1) and environmental quality (C3) and their relationship to disaster risks.
- Child participation focused on different activities has been developed, including the Child Forum (C4, C5).
- Disaster related policies and regulations are integrated with national planning and development (C5). However, child-specific CEE impacts are not detailed (C1, C2, C3).

The cross-cutting issues of DRR, adolescent development and participation are reflected in the cross-sectoral regulations of the Government of Indonesia. Regulation of the Head of the NDMA No. 4/2012 concerning Guidelines for Implementation of Disaster-Safe Schools-Madrasah aims to build a culture of preparedness and safety in

schools and to protect residents from the adverse effects of disasters. This protection includes ensuring the continuity of education services in emergencies and restoring the function of post-disaster education units. The Guidelines for Implementation of Disaster-Safe Schools-Madrasah is also integrated with MoECRT Regulation No. 33/2019 on Disaster-Safe Schools, targeting education units on formal and non-formal channels at all levels and types of education. Law No. 24/2007 on Disaster considers children as a vulnerable group when a disaster occurs. Law No. 23/2002 concerning Child Protection mandates that the government and other state institutions are obliged and responsible for providing special protection to children in emergencies.

The Climate Resilient Development Policy 2020–2045 guides actions related to DRR, focusing on cross-cutting issues such as urban flood resilience, flood early warning systems, sustainable and disaster resilience villages, DRR campaigns, and building resilience through the integration of gender and empowerment. The updated NDC mentions resilience to natural disasters and climate change impacts. The Indonesia Education Roadmap 2020–2035 puts emphasis on constructing disaster-responsive and damage-free classrooms.

Based on the desk reviews, the participation of children and young people in decision making have not been well integrated. Children and young people are still seen only as part of vulnerable groups, not yet as agents of change. However, Indonesia already has a National Child Forum (Forum Anak Nasional (FAN)) and Local Child Forum (Forum Anak Daerah (FAD)) as child advocacy mechanisms organized by MoWECP. These forums and other youth networks and platforms should be engaged in policymaking discussions, such as Development Planning Deliberation (Musyawarah Perencanaan Pembangunan/ Musrenbang), NDC, LTS-LCCR, NAP and other policy consultation processes, to provide them with the platforms to speak up and act on climate change concerns. Youth groups should also be formally institutionalized as stakeholders in public-private mechanisms and structures that contributes to policy planning, implementation and evaluation at various governance levels.

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Chapter 6: Strategies, Objectives And Theory Of Change

6.1 STRATEGY DEVELOPMENT

Children and young people in Indonesia are faced with numerous challenges to their health, education and overall well-being. They are at high risk of malnutrition, are exposed to high levels of pollution and unsafe water, experience barriers to accessing education and health care in rural areas, etc. These challenges are, and will continue to be, exacerbated by increased extreme weather events, environmental degradation, energy instability and long-term climate change. These have the potential to negatively impact children's rights, including their rights to an 'adequate standard of living', 'to the best health care possible, clean water to drink, healthy food and a clean and safe environment to live in', and to 'food, clothing and a safe place to live so they can develop in the best possible way', among other rights[173].

The strategies described in this chapter are high level actions to better support specific strategies across the six sectors to help fulfil the rights of children and young people in Indonesia. The strategies were formulated based on the main findings from the situation analysis conducted as part of this landscape review that included a desk review, KII and FGDs, as described in Chapters 1-5. These strategies have been designed to address the main challenges faced by stakeholders in mainstreaming children's issues into policies, programmes and tools. These challenges are generally related to awareness, knowledge, governance, commitment, consistency, layouts and infrastructure, and funding. After understanding the challenges and the need for mainstreaming children's rights into policy, these strategies were formulated to better support the specific recommendations described in Chapter 10. These high-level strategies will then support the more specific strategies and recommendations for the six social sectors.

The six strategies are key to accelerating progress towards ensuring the fulfilment of children's rights, addressing issues, and achieving recommendations within the context of increased extreme weather events, environmental degradation, energy instability, and long-term climate change. The strategies go beyond focusing on children more generally, but also include cross-cutting issues such as gender, disability, marginalized children, disadvantaged children, and children affected by disasters.

1. **Advocacy and awareness for prioritizing children in policies and programming (including financing)**: All children and young people need to be recognised within policies and programmes across the six sectors which also consider cross-cutting issues such as gender, disability, marginalized children, disadvantaged children, and children affected by crises. Increasing awareness related to the importance of prioritizing children in policies and programmes will help to mobilise stakeholders and strengthen advocacy efforts. Advocating for the inclusion and mainstreaming of children within policies and programmes as well as development initiatives, and providing financing and mobilising investments for support, will increase the reach of these initiatives and better support child rights.
2. **Coordination and collaboration of efforts to address climate risk across policies and programming:** Technical coordination and collaboration with relevant stakeholders across sectors and institutions, including with the private and public sectors as well as civil societies, is needed to effectively address climate risks across policies and programmes. By working together across different stakeholder groups, policies and programmes can be streamlined to address: the impact of air pollution on children's health; building the resilience of WASH, food, health and education systems to climate risks; strengthening social protection mechanisms to increase their responsiveness to climate risks; and data and evidence gaps related to climate risks. With increased coordination and collaboration across these areas, there will be an increased capacity to respond to climate risks across sectors. The strongly decentralized governance in Indonesia requires coordinated planning, development and monitoring of child and CEE-sensitive policy, as well as strong vertical and horizontal collaboration in terms of budgeting between government stakeholders at different levels of action.
3. **Knowledge and evidence generation related to the climate and child well-being nexus to better inform programming:** Knowledge and evidence generation will be crucial to better assess policy and programming needs. It is also important for proper risk assessments to inform the design of targeted programmes and to inform long-term planning in the context of climate and child well-being. This will include child focused climate and environmental vulnerability assessment, risk assessments to identify hot spots where children are most vulnerable to malnutrition, unsafe water, disruptions to education, and vector-borne diseases, etc. Increasing knowledge and generating high quality evidence related to children's risks will also enable improved responses to climate risks and strengthen programme planning.
4. **Systems strengthening to increase resilience to climate risk:** Strengthening WASH, food systems, education and health will increase their resilience to climate risks, eventually reducing the impact of shocks on children's access to clean water, nutritious food, health care and education. The resilience of these systems will be helped by Improving infrastructure, increasing human and financial capacity, and incorporating climate adaptation and mitigation considerations into programming and planning among parties as well as non-state actors. Having stronger WASH, food systems, health and education will improve the health, education and well-being of children, and enable them to achieve their rights.
5. **Providing an enabling communication platform for youth engagement in climate, energy and environment action:** Children and young people will be most affected by climate risks, so it is necessary to give them a voice about living in a world with a changing climate. They need access to high quality climate, energy and environmental education. The role of child and youth forums must also be strengthened at local, national and international levels to inform programmes and policies. Commitments to conducting situation analyses are also needed to understand how children and young people are affected by climate change, and how they view their needs as they relate to achieving their rights in a changing climate. Similarly, increasing their capacity through improved communication strategies and strengthened climate education and literacy will contribute to empowering them with a stronger voice. Putting children and youth at the centre of the action will increase the likelihood of their buy-in and the subsequent positive impact on their health, education and well-being.

6. **Strengthening data collection and early warning systems:** To be able to respond better to climate risks, timely data that is publicly accessible and understandable is needed. Data that enables the examination of the linkages between CEE and children's well-being is particularly important. These data can be integrated into a dashboard that allows for monitoring of progress across sectors over time. Without this information, understanding the true impact of CEE problems on children will remain difficult, as will designing solutions aimed at addressing these risks. The SDG data monitoring framework can be strengthened and leveraged to begin to examine these relationships. By strengthening data surveillance systems and early warning systems to anticipate impending CEE degradation risks (e.g., high levels of air pollution, chemical hazards, floods, power outages, etc.), policies and programmes will be more effective in responding to children's needs. This strategy will include improved routine monitoring of events in areas prone to climate related hazards, climate-sensitive diseases, energy shortages and environmental degradation.

With the Government of Indonesia ensuring that policies and programmes take children into account, young people will be more resilient to current and future climate and environmental challenges. To achieve this, tools to analyse and assess the prioritization of children in CEE policies will be crucial. An important starting point is to develop a common assessment tool with the same indicators and the same system, accessible to, and understood by, all stakeholders. Such an assessment tool can act as a benchmark to enable the consideration of children in CEE policies. These indicators will make it easier to monitor, evaluate, report and verify the status of child mainstreaming in CEE policies, especially in the six social sectors. The strategies outlined will help support these actions as well as the specific recommendations described in Chapter 10.2

6.2 GOALS AND OBJECTIVES

The overarching goal of the strategies is to encourage the mainstreaming of child needs and rights (including participation) in the six social sectors related to the CEE action programme which refers to the principle of no one left behind, especially vulnerable groups and children. The specific objectives are defined with reference to the six strategies in Section 6.1. The objectives are:

1. To protect all children from climate risks, energy crises and environmental degradation.
2. To ensure that all children have access to clean and safe water, sanitation and hygiene, nutritious diets, quality health care, education and social protection, even when faced with climate risks, energy crises and environmental degradation.
3. To see that children are placed at the centre of climate actions and are agents of change.

6.3 THEORY OF CHANGE

The Theory of Change (ToC) in this section is built with a focus on social sectors and cross-cutting issues associated with CEE issues. There are several enablers that show initial modalities in developing a ToC related to these CEE issues. The six strategies described in Section 6.1 are included as part of the change strategies. Medium-term changes are made in accordance with UNI'EF's agenda and goals as well as the SDGs. Long-term results were also developed by adjusting UNI'EF's goals in the mainstreaming of child needs and rights (including participation) in six sectors related to a CEE action programme. This ToC includes the integration of strategies with SDGs goals as an effort to support national and global agendas, as shown in Figure 6.1.

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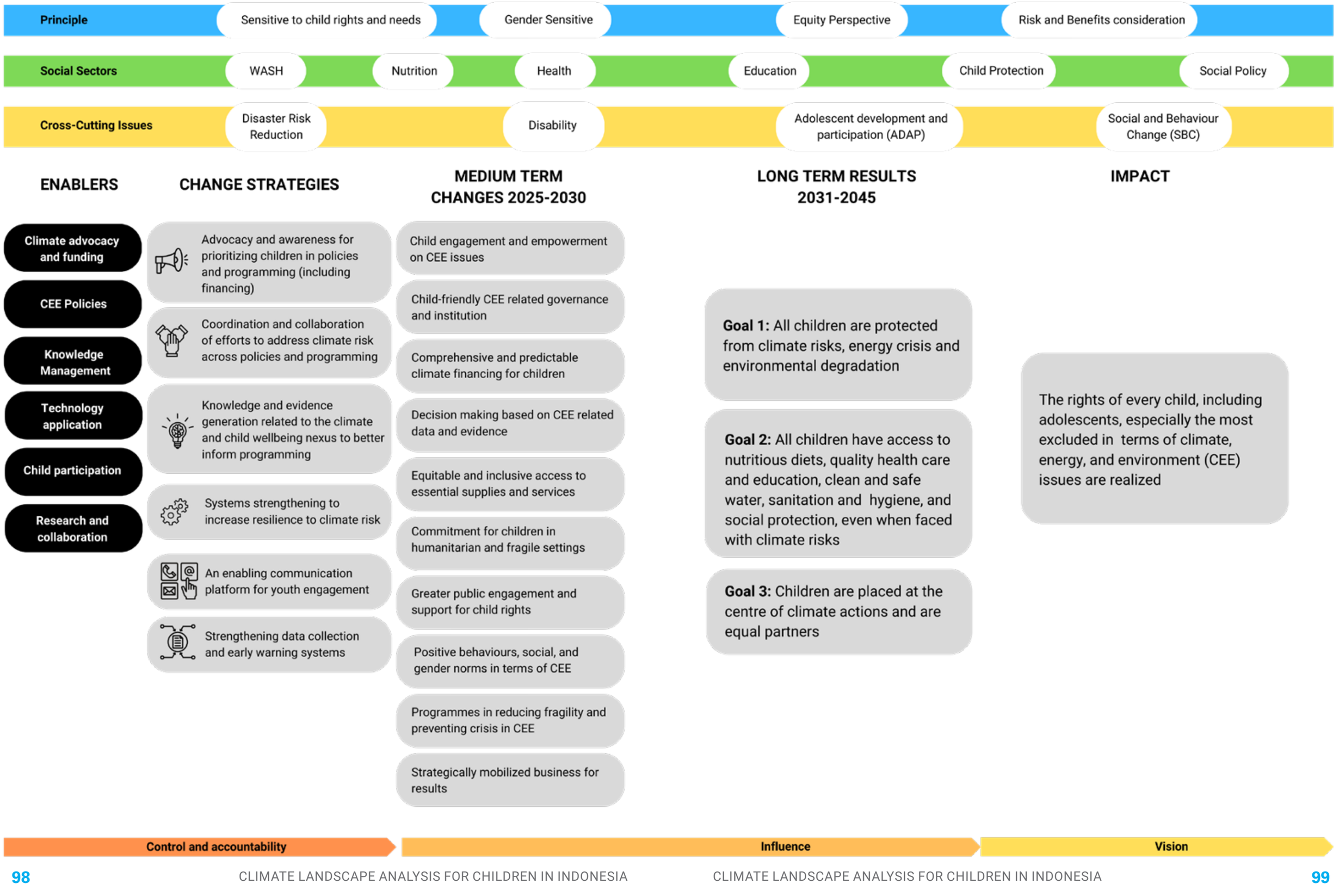
Figure 6.1 Theory of Change for Climate, Energy, and Environment Programming for Children



Chapter 7: Key Stakeholders, Programmes, Partnerships And Multistakeholder Platforms

7.1 STAKEHOLDERS AND PARTNERSHIPS

Based on the strategies presented in Chapter 6, this chapter focuses on mapping the potential stakeholders and partnerships in operationalising the strategies. It discusses the coordination and collaboration needs for each strategy implementation from the national government (ministries and agencies) as key stakeholders, supporting partners, and potential partnerships. Detailed tasks and functions of key stakeholders, including their existing programmes, are provided in Table 7.1.

STRATEGY 1: Advocacy and awareness for prioritizing children in policies and programming (including financing)

- **Government:** MoEF (KLHK), NDPA (BAPPENAS), Ministry of Industry (MoI/ Kemenperin), Ministry of Woman Empowerment and Child Protection (MoWECP/ KemenPPPA), Ministry of Health (MoH/ Kemenkes), MEMR/ KemenESDM, MoPWH/ KemenPUPR, Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (MoV/ KemenDesa PDTT), MoHA/ Kemendagri, Ministry of Foreign Affairs (MoFA/ Kemenlu), MoECRT (Kemendikbudristek), MoSA/ Kemensos, MoA (Kementan), NDMA (BNPB), CBS (BPS), subnational governments particularly Environment Agency, Health Agency, and LDPA (Bappeda).
- **Supporting Partners:** Civil society, private sector and development partners, media, children and youth forums.
- **Potential Partnerships:** Stakeholder involvement in accordance with duties and functions that each ministry/agency should prioritize children in policies and programmes, planning and co-financing for mainstreaming the right of children to safe and healthy environments. This involvement also needs to prioritize the rights and needs of children in various institutional policies and programmes related to CEE issues. Cross-sectoral and inter-ministerial efforts coordinated by MoEF are also needed in integrating children's rights and needs with various policies and programmes, such as low carbon development and climate resilient development. Integrating child'en's needs and requests into various cross-sectoral policies and programmes must also involve all stakeholders.

STRATEGY 2: Coordination and collaboration of efforts to address climate risk across policies and programming

- **Government:** MoEF, NDPA, MoI, MoWECP, MoH, MEMR, MoPWH, MoV, MoHA, MoFA, MoECRT, MoSA, MoA, NDMA, CBS, subnational government.
- **Supporting Partners:** Civil society, private sector and development partners, media, children and youth forums.
- **Potential Partnerships:** Coordination and collaboration should be the main agenda of ministries and agencies and supporting partners, through the development and strengthening of current programmes such as the Woman-friendly and Child-friendly Village Programme, Healthy Living Community Movement, Climate Health Village, Disaster Safe Education Unit, etc. Collaboration and coordination are performed through the formation of working groups, bilateral or multilateral ministerial discussions, and the mechanism for the parties' agreement.

STRATEGY 3: Knowledge and evidence generation related to the climate and child well-being nexus to inform better programming

- **Government:** MoEF, NDPA, MoI, MoWECP, MoPWH, MoECRT, MoA, NDMA, subnational government.
- **Supporting Partners:** Academia, media, private sector and development partners.
- **Potential Partnerships:** Data collection and assessments related to child-specific climate, environmental degradation, and energy issues, such as climate risk assessment, environmental impact assessment, vulnerability assessment, and energy equity assessment, including spatial analysis and risk mapping.

STRATEGY 4: Systems strengthening to increase resilience to climate risk

- **Government:** MoEF, MoWECP, MoH, MoPWH, NDMA, subnational government.
- **Supporting Partners:** Academia, private sector and development partners.
- **Potential Partnerships:** Strengthening systems to increase climate risk resilience of WASH, health, nutrition, education, and social protection systems to strengthen government policies, programmes and commitments. The related processes and programmes include Solar Power Initiative Movement, Health Related Climate Change Adaptation System, Disaster Prone Information Services, and Merdeka Belajar. The partnerships should contribute to policy planning processes for national development planning, regional development planning, sectoral planning, action planning, Musrenbang, etc., for system sustainability.

STRATEGY 5: Providing an enabling platform for youth engagement in climate, energy and environment action

- **Government:** MoEF, NDPA, MoI, MoWECP, MEMR, MoV, MoHA, MoECRT, MoSA, NDMA, subnational government.
- **Supporting Partners:** Civil society, academia, private sector and development partners, children and youth forums (national and international), other country governments including inter-governmental processes.
- **Potential Partnerships:** Systematic engagement of children and young people in CEE related evidence generation, policy development and dialogues, and policy implementation. The partnerships should provide access by promoting existing forums, continuing and expanding programmes such as Child Forum, Farming Goes to School, Energy Conservation Goes to School, Sekolah Adiwiyata, etc, for children and young people to engage in CEE actions.

STRATEGY 6: Strengthening data collection and early warning systems

- **Government:** NDPA, MoHA, NDMA, CBS, subnational government
- **Supporting Partners:** Academic, private sector and development partners.
- **Potential Partnerships:** Strengthening the capacities of suppliers and users of data and information as well as general knowledge on child-centred CEE-based data. This knowledge and capability are essential to enriching existing data, such as child-centred data on SDGs, social sectors, climate and disaster risks, energy access, and environmental degradation, and monitoring progress.

7.2 DETAILED TASKS AND FUNCTIONS OF KEY STAKEHOLDERS AND EXISTING MAJOR PROGRAMMES AND PARTNERSHIPS

At least 15 ministries and agencies at the national level and related agencies at the subnational level have an essential role in the effort to mainstream child rights related to CEE in policies, programmes and plans in Indonesia. The identification of these roles was made through an analysis of each directorate within the ministries and agencies along with their mandates. Ministries and agencies involved in stakeholder engagement have various modalities in the form of ongoing policies and programmes, or they already have plans at the central level. Most of these modalities have also been applied locally through structured coordination and communication mechanisms. These programmes are closely related to the duties and functions of each ministry. Specifically, several ministries and agencies focus on various CEE policies even though several other others have tasks and functions in child focused social policies.

The analysis examines whether different CEE policies and programmes from multiple ministries and agencies relate to child'en's rights, needs and participation. For example, MoEF has several programmes related to climate change and environmental policies, e.g., the Climate Village Programme and Adiwiyata School, that include children's issues in their programmes. The CLAC examines whether social policies focusing on children have considered CEE issues. The governance of related institutions is also related to how each progra'me's communication and coordination mechanism is performed, including monitoring and evaluation efforts to measure the progra'me's effectiveness.

The ministries and agencies involved are expected to play active roles in mainstreaming children in various programmes and policies related to CEE and the social sectors by considering the six strategies described in Chapter 6. The contribution of stakeholders is further identified based on their potential contribution to the proposed strategies in Chapter 6. In addition, the stakeholders should consider efforts to transform, adjust, strengthen and integrate various programmes within the institution to include child rights and needs in the social sectors (Table 7.1).

Table 7.1 Key Stakeholder Mapping

Ministries	General Directorate or Deputy	Directorate	Function related to CEE	Strategy Addressed*	Potential Partnerships or Engagement
MoEF	Directorate General of Climate Change (DGCC)	Directorate of Climate Change Adaptation	Managing climate change impacts, climate adaptation system development, environmental degradation, climate resilience, including climate change hotspot, climate risk assessment	1,2,3,4,5	Climate Village Programme, Sekolah Adiwiyata, Child-focused on Climate Change Adaptation
		Directorate of Climate Change Mitigation	Managing causes of climate change, climate mitigation system, energy needs, low emission development	1,2,5	Climate Village Programme, Sekolah Adiwiyata, Low Carbon Development
	Directorate General of Hazardous Waste, Waste and Toxic Materials	Directorate of Contamination Recovery and Emergency Response of Toxic Hazardous Waste	Managing materials impacting people and environment (including children), reducing the impacts, emergency response protocol	2,3,4	Recovery of land contaminated with household B3 waste
		Directorate of Hazardous and Toxic Materials Management	Managing hazardous materials, increasing community participation in hazardous materials management	2,3,4	Recovery of land contaminated with household B3 waste
	Ministry Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaboration programme
NDPA	Deputy for Maritime and Natural Resources	Directorate of Environment	Planning and managing climate and environmental action, low carbon development, climate resilience development	1,2,3	Child-focused on Low Carbon Development Initiative, Child-focused on Climate Resilience Development Policy 2020-2045
	Deputy for Human, Community and Cultural Development	Directorate of Public Health and Nutrition	Planning for climate and environment related health and nutrition actions on communities, food systems, provision energy sources from foods	1,2,3	Global Action Plan for Wasting in Children, "Aksi Bergizi" Program, Stunting action planning
		Directorate of Religion, Education and Culture	Planning for child education focusing on environmental issues, strengthening local wisdom in preserving the nature	1,2,3,5	Dropout child education, child care, protection and social welfare, investment in children
		Directorate of Family, Women, Children, Youth and Sports	Planning for child protection related programmes, youth engagement	1,2,3,5	Inclusive city for children, child marriage prevention, prohibition of child labour

	Deputy for Population and Employment	Directorate of Population and Social Security	Planning for child protection related to 6 social sectors	1,2,3	Prohibition of child labour
		Directorate of Poverty Reduction and Community Empowerment	Planning for social policy and programmes among children for poverty reduction	1,2,3	Poverty reduction strategy, increasing active participation of persons with disabilities
	Deputy for Economy	Directorate of Macro Planning and Statistical Analysis	Planning to enrich national child related data on CEE issues	1,6	Disaster-based data statistics
	Deputy for Facilities and Infrastructure	Directorate of Housing and Settlement	Planning for safe housing and settlement among children	1,2	WASH planning for children
	Deputy for Regional Development	Directorate of Spatial Planning, Land and Disaster Management	Planning for child focused land and disaster management, early warning systems	1,2,6	DRR planning for young people
	Head Secretary of SDGs		Provision of SDGs data for children especially in 6 social sectors and CEE	1,6	SDGs data focusing on CEE and children
	Ministry Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoI	Directorate General of Chemical, Pharmaceutical and Textile Industries	Directorate of Downstream Chemical and Pharmaceutical Industry	Ensuring that the chemical product industries consider children's health and protection	1,2,3	Child-focused industrial digital innovation
	Industrial Research and Development Agency	Green Industry Centre	Developing green industry with sustainability and involving children as parts of needs and participation	1,2,3,5	Green Industry Award, Industrial impacts on Greenhouse Gasses
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoWECP	Deputy for Gender Equity	Assistant Deputy for Gender Mainstreaming for Social and Cultural Affairs	Managing children's needs and programmes on social policy, protection and education	1,2,3,4,5	Woman-friendly and child-friendly village programme, Kabupaten/Kota Layak Anak
	Deputy for Fulfilment of Children's Right	Assistant Deputy for Fulfilment of Children's Rights to Care and the Environment	Managing children needs and programmes on health, WASH, and nutrition	1,2,3,4,5	Strengthening Child Forum
	Deputy for Specific Child Protection	Assistant Deputy for Child Protection Special Conditions	Managing children needs and programmes on DRR	1,2,3,4,5	Strengthening child Forum
	Ministry Secretariat	Bureau of Planning and Finance	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Child forum planning and evaluation
MoH	Directorate General of Community Health	Directorate of Environmental Health	Policy and programme related environmental health, climate change adaptation actions for health, child focused research on health improvement, climate related health system strengthening	1,2,3,4	Climate Health Village, Healthy Living Community Movement, Health City/Regency, Health related Climate Change Adaptation System
		Directorate of Maternal and Child Nutrition and Health	Managing policy and programme on child and mother's health, nutrition, and the interlinkages with CEE	1,2	Supplementary Feeding Programme, Teenage Girls Blood Enhancement Tablets
	General secretariat	Bureau of Planning and Budget	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MEMR	Directorate General of Renewable Energy and Energy Conservation	Directorate of Energy Conservation	Managing energy conservation for saving children's livelihoods and involving children in conservation programmes	1,2,5	Energy Conservation Goes to School & Campus
		Directorate of Planning and Development of Renewable Energy Infrastructure and Energy Conservation	Planning and developing policy and programme related to child-focused renewable energy	1,2,5	Solar Power Initiative Movement, Energy Championship
	Secretary General	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoPWH	General Directorate of Cipta Karya	Directorate of Sanitation	Managing WASH and the correlation with CEE for children, WASH system	1,2,3,4	Climate resilient and child-friendly WASH
		Directorate of Water Supply	Managing WASH and the correlation with CEE for children, WASH system	1,2,3,4	Climate resilient and child-friendly WASH

		Directorate of Settlement and Housing Engineering	Developing mechanism of housing and settlement by considering children in terms of climate impacts, environmental issues, and energy crises	1,2,3	Drinking water and sanitation technology focusing on children, post-disaster building rehabilitation
		Directorate of Settlement Infrastructure Implementation System and Strategy	Developing systems and strategy for settlement in supporting CEE issues on children	1,2,3	Drinking water and sanitation technology focusing on children, post-disaster building rehabilitation
	Regional Infrastructure Development Agency	National Regional Infrastructure Development Centre	Development of infrastructure focusing on CEE issues	1,2,3	Development of low carbon and climate resilient infrastructure
	Ministry Secretariat	Bureau of Budget Planning and Foreign Cooperation	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoV	Directorate General of Village and Rural Development	Director of Village and Rural Social, Cultural and Environmental Development	Managing child development in rural areas, especially in improving on environmental education, protection, and poverty	1,2,5	Climate-Friendly Village, Women-Friendly and Child-Friendly Villages, Inclusive Village
	Ministry Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoHA	Directorate General of Regional Administration Development	Directorate of Disaster and Fire Management	Managing DRR considering on child needs and impacts on health, nutrition, education, and protection	1,2,6	Disaster-Prone Information Services
	Directorate General of Regional Development	Directorate of Regional Development Planning, Evaluation, and Information	Managing the regional and local planning addressing child needs, room for children	1,2,6	Urban water supply, Strengthening the role of regions in energy transition
		Directorate of Synchronization of Regional Government Affairs IV	Managing local activities focusing on CEE issues are considering children and social sectors	1,2,5,6	Reproductive health integrated planning, Strengthening the role of regions in energy transition
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme

MoFA	Directorate general of Multilateral Cooperation	Directorate of Development, Economy and Environment	Environmental advocacy, global commitment and translating to national and subnational policies and initiatives	1,2	Climate & Environment Advocacy by including children's rights
	General Secretariat	Bureau of Planning and Organization	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
MoECRT	Directorate General of Early Childhood Education, Basic Education, and Secondary Education	Directorate of Public Education and Special Education	Improving climate and environmental literacy through education among children, safe school programmes from climate risk and disasters	1,2,3,5	Disaster Safe Education Unit, Merdeka Belajar programme
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Disaster Safe Education Unit
MoSA	Directorate General of Social Protection and Security	Directorate of Social Protection for Natural Disaster Victims	Providing room/ platform for child protection, health, nutrition, and education due to disasters	1,2,5	Child-sensitive social protection, adaptive social protection
	Directorate General of Social Rehabilitation	Directorate of Child Social Rehabilitation	Providing financial capacity	1,2	Hope Family Programme
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Cash transfer planning and mechanism
MoA	Agricultural Research and Development Agency	Centre for Agricultural Land Resources	Ensuring agriculture activities are child-based needs (nutrition and health), sustainable WASH	1,2,3	Integrated Farming, Low Emission Varieties
	Food Security Agency	Food Security Agency	Child-based food security for improving child nutrition and health	1,2,3	Climate-Smart Agriculture Development, Millennial Farmer programme, Farming Goes to School
NDMA	Deputy for Systems and Strategy	Directorate of Disaster Risk Mapping and Evaluation	DRR, child mapping system in emergency situation, data surveillance system	1,2,3,4	Strengthening of child-focused disaster risk studies
		Directorate of Disaster Management Strategy Development	Child-focused disaster management	1,2,3,4	Development of disaster risk assessment documents at the regional level that consider the rights and needs of children

	Deputy for Prevention	Directorate of Preparedness	Early warning system focusing on child right	1,2,5,6	Child focused disaster prevention, early warning system strengthening
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme
CBS	Deputy for Social Statistics	Directorate of People's Welfare Statistics	Strengthening data collection on child focused problems on social sectors, including poverty, education, etc.	1,2,6	Strengthening data collection on child focused problems on social sectors
		Directorate of Social Resilience Statistics	Strengthening data collection on child focused climate impacts, energy, and environmental degradation risks	1,2,6	Strengthening data collection on child focused climate impacts, energy, and environmental degradation risks
	General Secretariat	Planning Bureau	Coordination and planning, budgeting, monitoring and evaluation, and reporting the collaborative programmes	1	Planning and co-financing for the collaborate programme

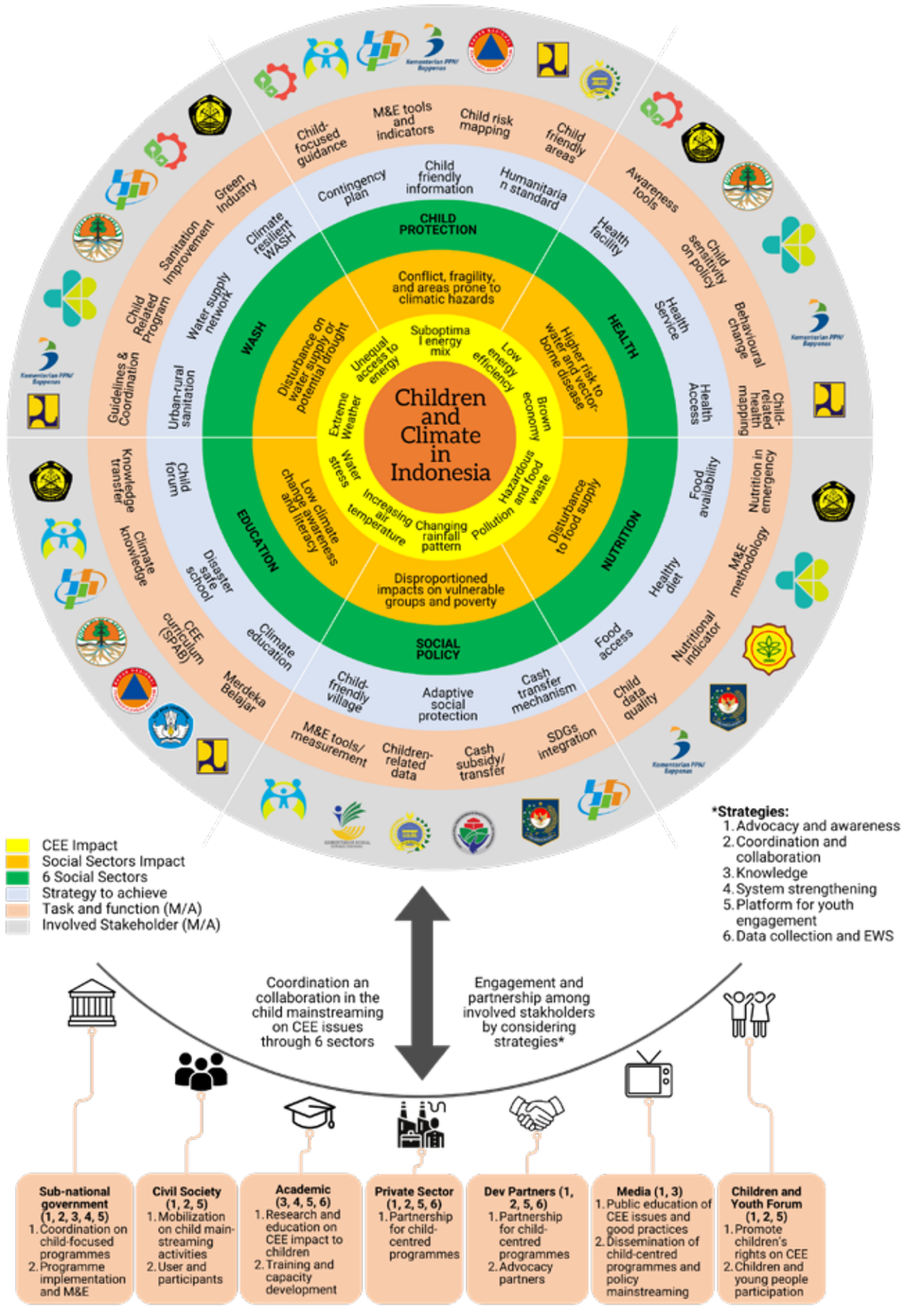
*The six strategies indicated by numbers 1 to 6 are described in Chapter 6.

7.3 MULTISTAKEHOLDER COORDINATION

Multistakeholder coordination and collaboration is required for mainstreaming strategies to address CEE impact across social and economic sectors to protect child's rights. The identified stakeholders are divided into eight groups with different roles and contributions: (1) national government (ministries and agencies), (2) subnational government, (3) civil society, (4) academia, (5) private sector, (6) development partners, (7) media, and (8) children and young people/groups (Figure 7.1).

The government cooperates with supporting partners in implementing the strategies, and sets the agenda for, and provides direction to, the subnational government and the private sector through establishing targets and milestones as well as passing laws and regulations related to CEE. As the national focal point, MoEF coordinates the implementation of activities related to CEE in collaboration with various ministries and agencies and other stakeholders such as development partners, the private sector, local governments, universities and NGOs. The MoEF also needs to synergise with NDPA and MoWECP in coordinating the implementation of child mainstreaming strategies related to national development achievement targets and budget marking. In addition to the vital role of various ministries and agencies, other supporting partners can perform several support functions, including resources, implementing best practice, research and studies, and technological innovation. Action is needed from various layers down to ground level. Diverse technical assistance from all stakeholders is necessary to implement child rights and mainstream strategies related to CEE programmes.

Figure 7.1 Formulation of Connection of Child Mainstreaming Programmes With Related Government Capacities and Programmes



Chapter 8: Actionable Opportunities For Leveraging Partnerships And Funding

This chapter discusses opportunities to promote the proposed strategies for mainstreaming children's rights and needs in climate, environment and energy programmes related to the six social sectors. The opportunities are categorised into cooperation and funding. Cooperation identifies potential collaboration among the relevant stakeholders. Funding includes funding potential that can encourage the implementation of the proposed strategies

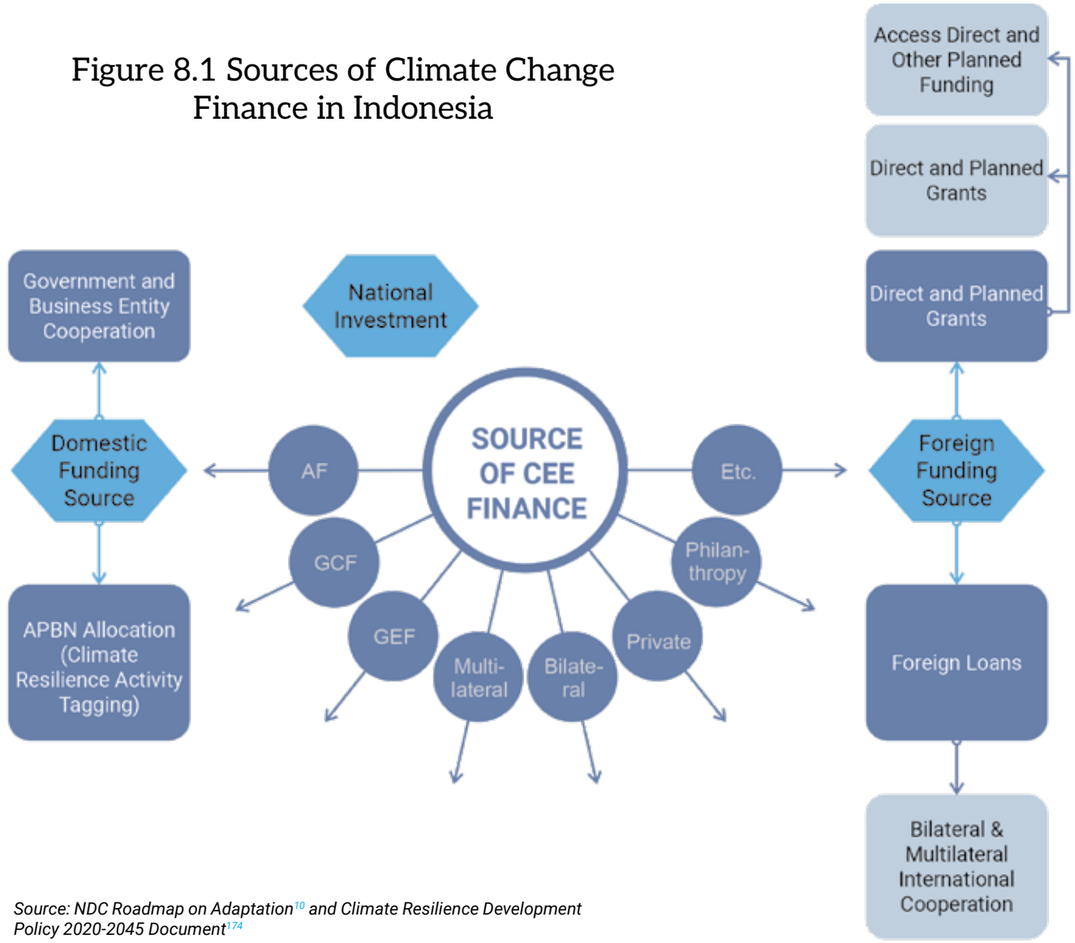
8.1 COOPERATION AND FUNDING OPPORTUNITIES

There is a need to strengthen cooperation and funding for mainstreaming of children's rights and needs in CEE policies and programmes related to the six social sectors. There are opportunities to leverage funding from national and international financing mechanisms. Funding can be mobilised directly from external sources to complement budgeting in national/subnational programmes supported by various partners.

At the national level, there are opportunities to optimise the state budget, e.g. strengthening child sensitivity in existing policies, plans and programmes under the Medium-term National Development Plan, regional development planning, annual work plan etc., as funded by the state budget (APBN/APBD). Additional funds can be raised from green sukuk[h] or green bonds and through new financing mechanisms described under the Presidential Decree (Peraturan Presiden (PERPRES)) No. 98/2021 on Carbon Pricing Instruments, including fees and carbon levy, intergovernmental fiscal transfer instruments, local government income tools (Pendapatan Asli Daerah (PAD)), and other sources of finance. The government also receives taxes from the private sector, and Indonesia continues to mobilise international financial sources through bilateral, regional and multilateral channels (Figure 8.1).

h Sukuk are financial products similar to bonds designed in compliance with the Islamic sharia law.

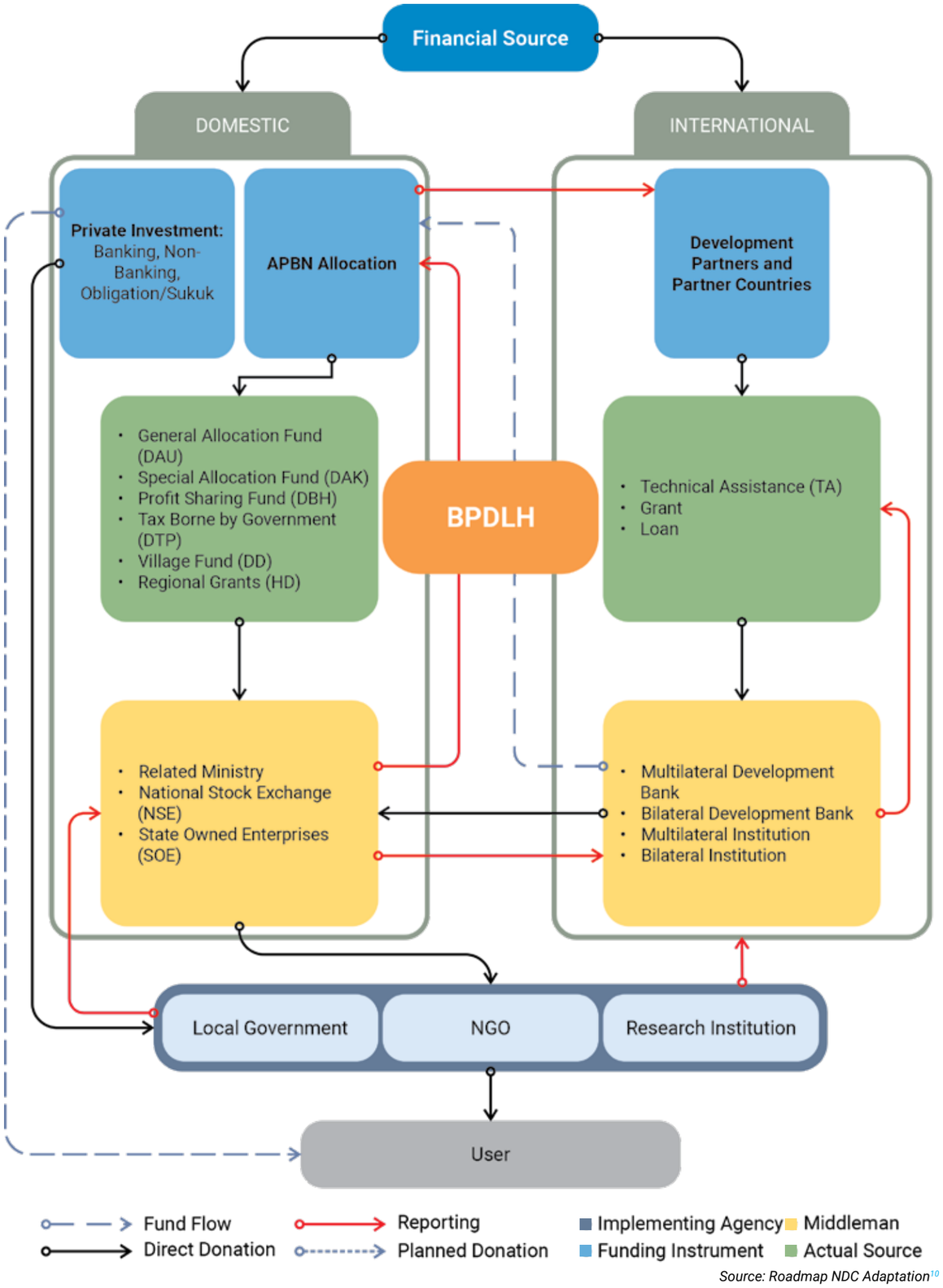
Figure 8.1 Sources of Climate Change Finance in Indonesia



Source: NDC Roadmap on Adaptation[10] and Climate Resilience Development Policy 2020-2045 Document[174]

The Government of Indonesia established the Environmental Fund Management Agency (Badan Pengelola Dana Lingkungan Hidup (BPDLH)) to support Indonesia's vision of preserving environmental functions, preventing pollution, and preventing environmental degradation. The Environmental Fund Management Agency, a public service agency (BLU) under MoF, is mandated to mobilise and manage environmental funds from national and international sources based on transparent and accountable fiscal standards, and to ensure effective and efficient disbursement of such funds. According to MoF Regulation No. 124 of 2020, the agency distributes funds through spending, financing and other conditions to the beneficiaries for environmental protection and conservation purposes. The climate change financing mechanisms in Indonesia are depicted in Figure 8.2.

Figure 8.2 Climate Change Financing Mechanisms in Indonesia



Source: Roadmap NDC Adaptation[10]

8.2 OPPORTUNITIES TO SUPPORT THE STRATEGY

ADVOCACY AND AWARENESS RAISING TO PRIORITIZE CHILDREN'S RIGHTS IN POLICIES AND PROGRAMMES

Actionable opportunities

To mainstream children's rights and needs on CEE issues and the six social sectors, it is necessary to advocate to stakeholders through effective communication strategies. The fulfilment of children's rights and needs is coherent with the notion of "no one left behind" in climate change action. The engagement requires multistakeholder collaboration. This advocacy refers to all communications intended to persuade or produce a specific alteration in action or behaviour. For example, the advocacy for increasing government awareness on the need to mainstream children's rights and participation could be in the form of meetings and workshops, correspondence, public statements or reports, socialisation, and campaigning with effective use of mass media. However, realising children's rights is not an automatic consequence of economic growth. States must ensure that the activities and operations of the private sector do not have an adverse impact on their ability to realise the investment needed to implement children's rights fully.

Key stakeholders for advocacy to strengthen policies and programmes on CEE include MoEF, MoWECP, MoHA, MoA, Ministry of Marine Affairs and Fisheries (MoMAF), MoPWH, MoH, MoECRT, and NDPA (Chapter 7). Partnerships with institutions such as CSOs, intergovernmental organizations, and local communities with the same goal, are essential because a compelling advocacy agenda requires engaging partners for their catalytic influencing capacity. Evidence of actual conditions can strengthen the advocacy to prioritize children in policies and programmes in Indonesia and to develop an instrument or a tool to guide the prioritization of children in national and regional policies and programmes.

Potential funding opportunities

Local governments usually use the APBN and APBD to fund advocacy activities. Funding for advocacy can also be obtained from external institutions such as development partners with special focus and mandates related to social sectors. Advocacy can also be supported by partnerships with institutions concerned with CEE or children's right issues, and it can be funded through philanthropy and even public donations.

COORDINATION AND COLLABORATION OF EFFORTS TO ADDRESS CLIMATE RISK ACROSS POLICIES AND PROGRAMMING

Actionable opportunities

Currently, coordination between governments at various levels dealing with the impacts of climate change on children and the role of children is not well documented or strongly articulated in specific policies or regulations. Therefore, strong coordination between central and local governments is an essential factor for implementing programmes at community level. Multistakeholder cooperation and coordination can also strengthen implementation at local levels. For example, communities, young people, national and international CSOs, and research institutions, can be engaged in efforts to mainstream children's issues in policies and programmes.

Potential funding opportunities

Implementing policies and programmes requires adequate and reliable funding support. All potential funding from various sources can be used as an opportunity for collaboration which can support projects focusing on mainstreaming children's rights and needs in CEE issues across the six social sectors. The projects can address issues such as the impacts of air pollution on children's health, building WASH climate resilience, food systems resilience, strengthening social protection mechanisms, and addressing data and evidence gaps related to climate risks. However, adjustments are still needed for the types and areas of the proposed projects based on the direction and allocation of each funding source agency and understanding the different focus of each funding institution or donors.

KNOWLEDGE AND EVIDENCE GENERATION RELATED TO THE CLIMATE AND CHILD WELL-BEING NEXUS TO BETTER INFORM PROGRAMMING

Actionable opportunity

Indonesia needs more advanced studies and evidence generation on CEE risk to children (Chapter 9) to inform programmes and policies that support the CEE related child rights and needs across social sectors and levels of governance, as well as to respond to the present and future needs and conditions. This can be in the form of an approach using GIS-based mapping overlay analysis on environmental conditions, industrial conditions, and the condition of children in the surrounding areas. The government can determine Indonesia's need to develop better and more targeted programmes and policies to support sustainability transitions in all sectors. To support this strategy and opportunity, the government can establish and strengthen existing collaboration between universities and institutions within the country and with international partners, including think tanks and research institutions.

Potential funding opportunities

Funding assistance is also needed to support research on analysing the situation of children in various sectors in Indonesia. One of the funding opportunities for evidence generation to assess children's risk and vulnerability to the impacts of climate change is through the 2020–2024 National Research Priority Funding (PRN) that consists of multidisciplinary and cross-sectoral research focus, including national strategic problems, disasters and climate change. This programme opens throughout the year with periodic selection. However, as most research funds in Indonesia come from the government, private sector contributions to evidence-generation funding and partnerships are crucial so that science and technology have a multiplier economic impact.

SYSTEMS STRENGTHENING TO INCREASE RESILIENCE TO CLIMATE RISK

Actionable opportunities

Improved technology or technological advancement is one of the key factors that support systematic resilience to CEE risks. In the energy sector, the strategy to achieve the target under Low Carbon Scenario Compatible with Paris Agreement Target (LCCP) suggests focusing on the power sector, which requires a transition from heavily coal-based energy to more diversified energy sources, including developing renewable energy systems for power. This technological transformation should involve all levels of society, including the participation of children and youth, from the planning to the implementation stage. Indonesia considers technology cooperation under this framework a crucial element for the ambitious scenario of the LTS-LCCR.

Technological advancement will encourage systems (infrastructure, accessibility, data collection, monitoring, and data surveillance) to strengthen the implementation of WASH, health, nutrition, and education programmes, eventually reducing vulnerabilities and increasing children's resilience. As an example, the largest climate change budget was used to finance the construction of low emissions and climate resilient physical infrastructure[175]. Technology can also help alleviate problems with food and nutrition, education, energy demand, and environmental quality. Currently, the government has sectoral development policies addressing climate change's impacts (Chapter 5). These policies need to be strengthened with analysis on whether the developments can meet c'ildren's needs and rights and their participation in the development planning.

Potential funding opportunities

APBN supports strengthening the six social sector systems through allocation of funds to specific regions. The funds for protecting women and children have been budgeted for about IDR 120 billion. The regions can obtain allocated funding for social sector issues such as education, health, nutrition, WASH and child protection in the Special Allocation Fund (Dana Alokasi Khusus (DAK)). Meanwhile, the issue of social protection is allocated in the General Allocation Fund (Dana Alokasi Umum (DAU)). Apart from the government budget, funding for strengthening the CEE related and six social sector systems can be supported by grants/donors, loans, guarantees, and technical assistance from international financing described below:

- Green Climate Fund provides financing with a focus on adaptation, significantly increasing the resilience of health, nutrition (food security), water security, climate resilient and safe infrastructure, community livelihood, and ecosystem services, and mitigation (significantly reduced emission from energy, forest and land use, transportation, and building and industries).
- Global Environment Fund offers financing with a focus on innovation and technology with sustainable energy, sustainable land management and crop diversification, water security, and waste management as entry points for submitting ideas to support mainstreaming rights and the needs of children.
- Adaptation Fund supports climate financing with a focus on multisector projects, DRR and early warning system, food security, ecosystem-based adaptation, urban and rural development, and water management.
- Development partners such as the ADB and World Bank provide financing with a focus on climate change, agriculture and food security, health, energy, environment, water and sanitation, and social development.
- Private investment can contribute to developing child-friendly and climate resilient infrastructure.
- The government's Environmental Fund Management Agency funds are accessible for pollution control, environmental damage, and restoration to increase the community's capacity and the environmental ecosystem. The funding sources can also be channelled through the agency to be managed and distributed to beneficiaries through various projects that benefit children.

PROVIDING AN ENABLING PLATFORM FOR YOUTH ENGAGEMENT IN CLIMATE, ENERGY AND ENVIRONMENT ACTION

Actionable opportunities

The government has conducted many climate related capacity building programmes in various regions in Indonesia, both as standalone programmes and as part of a broader scope of cooperation. Although it has not explicitly discussed children's problems, climate actions will indirectly affect the problems related to capacity development faced by children. Along with initiatives under the Capacity Building Hub of the UNFCCC, the need to enhance synergy and transformational changes in capacity development has also been more evident at the national level, as implied in the mitigation and adaptation pathway scenarios. For example, the transition in the energy sector, which requires a workforce transition to green jobs, demands well designed capacity development targeted primarily at the mitigation sectors, adaptation, and cross-cutting issues (just transition, gender, intergeneration and vulnerable groups, and local communities).

As for children's participation, the existing national and regional forums and networks such as Child Forum (organized by MoWECP), Adolescent Circles and Mitra Muda (organized by UNICEF), and other existing youth platforms should be empowered and engaged systematically in policy design and implementation across governance levels. Governments and other stakeholders should consider empowering those networks through capacity development and knowledge building, participation in development and decision making, and voicing their opinions on CEE issues. Capacity building can be conducted in the forms of peer learning, collaborative works, training, discussions, FGDs, field trips, etc. It is important to involve children and young people in the development and design of capacity building programmes and activities. The U-Report platform developed by UNICEF can also be used to empower young people worldwide to engage with CEE issues and speak out on them.

Potential funding opportunities

Capacity building for children and young people can be facilitated by various national or local government funds, international climate finance, and investments from the private sector (national and international CSOs).

STRENGTHENING DATA COLLECTION AND EARLY WARNING SYSTEMS

Actionable opportunities

A good data system (including complete data, collection, reporting, monitoring, and evaluation techniques) and a good early warning system are important in responding to the negative impacts of climate change, and help policy decisions and programmes related to mainstreaming children into CEE issues across the six social sectors.

Indonesia needs a data collection system that aggregates children based on age and gender, especially for the six social sectors. This information is necessary to design appropriate solutions for managing CEE risks and early warnings for early actions. The SDG data monitoring framework can be strengthened and used as a reference. Data systems focused on vulnerable areas or groups that can be strengthened and employed are Survei Sosial Ekonomi Nasional (SUSENAS) from CBS, Data Terpadu Kesejahteraan Sosial (DTKS) from MoSA, Sistem Informasi Data Indeks Kerentanan (SIDIK) from MoEF, and Data Informasi Bencana Indonesia (DIBI) from NDMA. Collaboration and cooperation between the government and survey institutions also provide opportunities. For example, MoWECP has a Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA) as a medium for data collection, monitoring and evaluation, specifically for cases of violence against women and children. This system can be developed to report CEE issues at the site level and identify needs. With proper data support and early warning, the policies and programmes to respond to climate risks will also be more accurate in responding to children's needs.

Potential funding opportunities

Funding opportunities for strengthening surveillance can come from national and local government funds. Funding for the development of disaster early warning systems and infrastructure can come from the state budget, considering that strengthening the disaster early warning system is one of the designed projects in National Priority Number 6 determined in the RPJMN 2020-2024. Funding for data collection tools and disaster early warning systems can be obtained from bilateral and multilateral cooperation, the private sector and other development partners.

Chapter 9: Knowledge And Data Gaps And Issues For Further Research

The availability of child-sensitive data and information related to CEE and the six social sectors in Indonesia is lacking, and there are many policies that have not considered the rights and needs of children, creating difficulties in accessing child-sensitive information and data. Gaps in knowledge and data (Figure 9.1) are explained below.

Figure 9.1 Gaps and Needs on Knowledge, Data and Information to SUpport the Six Strategies to Mainstream Children's Rights, Needs, and Participation as Agents of Change into Climate-sensitive Policies and Programmes in Indonesia

Strategy	Required Knowledge and Data	Required System and Tools
1 Advocacy for mainstreaming children in policies and programming	- Child-centred CEE risks - Child-friendly reporting mechanisms focus on CEE issues - Child rights and needs on environmental protection and management - Child specific energy demand and easy access to energy - Child-focused safely managed water and sanitation	- Digital platform for information dissemination - National Climate Change Registry System - Climate budget tagging system - Policies and program mainstreaming sector-specific child vulnerabilities due to CEE
2 Coordination and collaboration of efforts to address climate risk across policies and programming	- Plan of CEE inclusive for children, young people, and children with disabilities - Access and higher quality WASH - CEE risks on social sectors specific children - Best practices CEE-related programmes in the social sector	- Digital platform to linking among parties - Working groups among ministries and agencies - Strategic guidance and partnership mechanisms among parties - Documents and regulations gender-responsive and inclusive of children on CEE - Disaster risk reduction forums
3 Knowledge and evidence generation related to the climate and child wellbeing nexus to better inform programming	- Child-centred CEE risks - Climate-related assessments address children - Child specific energy demand and easy access to energy - Climate change adaptation, mitigation and disaster management integrating child-sensitive impacts	- Climate-smart design and information - Conservation energy information system - Technical guidance and integration of environment and social sectors focusing on children - Systems to expand quality early childhood education - Child-friendly cities commitment to CEE, DRR
4 Systems strengthening to increase resilience to climate risk	- Climate risks and environmental quality for children - Social protection mechanisms - Sustainable agriculture and agricultural waste management - Environmental health quality standard - School building construction and technology-based infrastructure consider the sector-specific child vulnerabilities - Disaster risk and adaptation to climate change	- Capacity, lessons learned, and protocols in climate resilience - Information systems social sector connectivity with CEE - Program considered environmental quality of well-being
5 Providing an enabling platform for youth engagement	- High-quality climate, energy, and environmental education - Children's participation scheme as a change driver - Student activities in low emission and climate resilience - Historical and future climate impacts - Environmental quality of well-being	- Platform children's capacity and literacy on CEE and social sector - Documents related to climate impacts on children with disabilities - Guidelines children participation on CEE and social sector - Child-friendly cities commitments to CEE
6 Strengthening data collection and early warning systems	- Child-sensitive CEE and social sectors - Climate forecasts - CEE data and information for planning and budgeting the social policies and programs - Humanitarian aid standards in emergency preparedness for multi-hazard risks	- Child-sensitive system - Knowledge management to collecting data and information related CEE and social sector - Early Warning System for children

9.1 REQUIRED DATA AND INFORMATION

STRATEGY 1: Advocacy and awareness for prioritizing children in policies and programming (including financing)

The advocacy to multi-stakeholders to increase awareness of mainstreaming children in policies and programmes requires child-centred CEE risks. The relevant stakeholders must also have accessibility to the CEE risks.

Required knowledge and data:

- Child-centred climate projection, vulnerabilities and resilience, with granular data coverage to the subnational level
- Child rights and needs on environmental protection and management
- Child-friendly reporting mechanisms focused on CEE issues.

Required tools and systems:

- Digital platform for dissemination of information
- National Climate Change Registry System
- Climate budget tagging system
- Policies and institutional arrangements for CEE data collection, access, monitoring, and evaluation.

STRATEGY 2: Coordination and collaboration of efforts to address climate risk across policies and programming

Indonesia lacks documents and regulations that are gender responsive and inclusive of children (including disabilities), and synergy and collaboration across ministries or agencies, especially for stakeholders across child protection sectors. Preparing documents and regulations that are formed needs to be based on a risk analysis of CEE impact on children. The development of this analysis requires strategic guidance and a partnership mechanism between the parties[176]. Ministerial Decree of MoEF No. 7 of 2018, Guidelines for the Assessment of Vulnerability, Risk and Impact of Climate Change, and MoEF decree No. 33 of 2016, Guidelines for Developing Climate Change Adaptation Actions, should be treated as tools for the development of risk analysis guidelines specified for children.

Required knowledge and data:

- Plan of CEE inclusive for children, young people, and children with disabilities
- Indicators for developing child-inclusive CEE risks with continuous data on food and nutrition, the health sector, disasters, and WASH
- Best practices for CEE related programmes in the social sector.

Required tools and systems:

- Digital platform to interlink parties
- Working groups among ministries and agencies
- Strategic guidance and partnership mechanisms among parties
- Documents and regulations that are gender-responsive and inclusive of children on climate crises, energy issues, and environmental degradation
- DRR forums.

STRATEGY 3: Knowledge and evidence generation related to the climate and child well-being nexus to better inform programming

Mainstreaming children in policies and programmes requires data and information on CEE risks to children. This risk analysis is essential to designing long-term planning to improve children's resilience. The necessary data are associated with climate hazards and vulnerabilities segregated by population ages. The potential indicators for measuring children's exposure can include available facilities (electricity, education, health and communication), institutions, health insurance, family poverty level, parents' sources of livelihood, village topography, household fuel sources and latrine facilities, waste disposal, clean water sources (for drinking, bathing and washing), and population density. The indicators determining climate and environmental hazards can include the impacts of disasters on children (such as total child deaths per type of disaster at the district/city level), climate data (such as historical and projected air temperature and rainfall, and climate extremes), biophysical data, and land cover data.

Required knowledge and data:

- Child-centred CEE risks: climate vulnerabilities and hazards segregated by population age
- Climate change impacts on children with disabilities
- Updated data on impact of climate change to climate related diseases (such as the incidence of dengue fever, malaria, diarrhoea, acute respiratory infection, pneumonia, tuberculosis and malnutrition), segregated by population ages and gender
- Updated data on impacts of climate related disasters on children, such as total child deaths per type of disaster at the district/city level
- Children's access to energy, such us proportion of schools, households and health facilities with access to electricity.

Required tools and systems:

- Climate-smart design and information: evaluation of climate change risks
- Conservation of energy information system
- Guidance and integration of CEE and social sectors focusing on children
- Learning instruments to expand quality early childhood education
- Instruments to include CEE, DRR, and climate proofing into child-friendly city programmes.

STRATEGY 4: Systems strengthening to increase resilience to climate risk

Building the resilience of WASH, education, health and food systems to climate risks improves children's health, education and welfare. It requires capacity, lessons learned, and protocols in climate resilience to build an integrated system. information required to enhance the system includes data on climate risks and environmental quality for children at the district/city level, coupled with social protection mechanisms. This requires data on children's mental health after a disaster, violence against children, child and adolescent delinquency (smoking, drinking, drugs, gangs), abandoned children, child labourers, child protection regulations, and child poverty rates.

Required knowledge and data:

- Climate risks and environmental quality for children at the district/city level
- Social protection mechanisms such as children's mental health after a disaster, violence against children, child migration

- Climate risk indicators embedded in environmental health quality standard
- School building, construction and technology-based infrastructure considering the sector-specific child vulnerabilities
- Child-centred knowledge on climate change adaptation including through DRR efforts/programmes.

Required tools and systems:

- Capacity, lessons learned, and protocols in climate resilience
- Information systems of child-sensitive CEE impacts on the social sectors to protect children from the potential adverse impacts
- Environmental quality monitoring systems.

STRATEGY 5: Providing an enabling platform for youth engagement in climate, energy and environment action

Children and youth must be involved in programmes and policies to hear and embrace their voices, therefore providing platforms that enable their involvement and access to high quality CEE education is urgently needed. This platform is directed at increasing children's capacity and literacy. The other needs are related to the notions of 1) access (easy access to WASH, health, education, and food facilities and services), 2) control (children's ability to conduct basic activities), 3) participation (participation in planning and activities in the household and social environment), and 4) benefits (of social activities for children).

Required knowledge and data:

- High quality CEE and DRR education
- Understanding of meaningful engagement and facilitation
- Participation scheme for children as agents of change
- Activities in low emission and climate resilience
- Data on child-centred historical and future climate change impacts
- Knowledge sharing mechanisms on environmental quality.

Required tools and systems:

- Strengthening of existing platforms such as Child Forum and U-Report, to enhance children's capacity and literacy on CEE and the impacts on social sectors
- Guidelines for children's participation in CEE and the social sectors (including children with disabilities)
- Participation mechanisms in the implementation of child-friendly city programmes.

STRATEGY 6: Strengthening data collection and early warning systems

Regular monitoring is essential for the development of an early warning system. The system should include information on weather events in areas prone to climate related hazards, climate-sensitive diseases, energy access, environmental quality, and social determinants concerning children (such as disease, nutritional status, WASH conditions and child abuse). Strengthening data collection can be performed using the Knowledge Management (KM) approach to exchange knowledge from one individual to another so that it can be used by other parties[177].

The process of developing KM consists of five steps, as per the example below of the KM process for the development of an early warning system related to children:

1) Synthesis and Innovation: the knowledge and data needed to support an early warning system in the mainstreaming of children
   - Climate extremes
   - Child-centred risk assessment on climate change impact on education, WASH, child safety, social protection, nutrition and food security, health
   - Child-centred DRR
   - Climate related diseases
2) Dissemination: sharing relevant information on children with the government and society
   - Media information
   - Child-friendly facilities such as games, camp, outbound, comics
   - Forum Anak
3) Absorption: use and application of knowledge
   - Early warning system
   - Monitoring and surveillance of diseases
4) Training: knowledge used and applied continuously
   - Training on the use of the early warning system
5) Experience: stored project experience in the form of reports, evaluations, and studies
   - Adjustment of delivery methods for CEE information to children using games, boot camps, outbound adventures and comics
   - DRR planning for, and with, children and young people.

Required knowledge and data:

- Weather and climate events in areas prone to climate related hazards, climate-sensitive diseases, energy access, environmental quality, and social determinants concerning children
- Regional and local climate change projections and forecasts
- Data on CEE related impacts on the six social sectors
- Child violence prevention and handling of CEE related impacts
- CEE related data and information for planning and budgeting on disaster responses
- Humanitarian aid standards in emergency preparedness for multi-hazard risks.

Required tools and systems:

- Child-sensitive assessment system with climate change impacts, energy crises, and environmental degradation on social sectors
- Knowledge management on collecting data and information related to CEE and social sectors
- Mainstream children's vulnerabilities and related indicators to early warning systems
- Emergency nutrition tool kit
- Child focused data and information included in the Basic Health Research (Riset Kesehatan Dasar/RISKESDAS).

9.2 KNOWLEDGE AND DATA GAPS IN INDONESIA

AVAILABILITY

The primary data providers formally include the Geospatial Information Agency (BIG) for biophysical data (e.g., topography and land use), CBS for socioeconomic data, and BMKG for climate data. However, during the KIIs and FGDs, various obstacles were presented concerning data availability, especially data related to CEE and the six social sectors. The identified obstacles include:

1. No database specific for children. The Online Information System for the Protection of Women and Children has excellent potential to be developed to provide data and information specifically for women and children. Currently, the available information and data are still about GBV. The available data and information on children are not centralized in one system, and there is a lot of data that has not been disaggregated by age and gender. Child-based and gender-specific data are needed because risk assessments will differ depending on age level and gender. In addition, there are currently no systematic data on psychosocial support after disasters, psychosocial concerns, mental health, and social behaviour. Data on prevalence and incidence of disease exist but have not been disaggregated by age.
2. Required data and evidence are lacking, incomplete, and not updated
   - The unavailable data include epidemiological data (for children over 5 years and adolescents), energy-sensitive data for children/households (at least in the form of energy consumption data based on age and gender), area of residence (urban and rural), and green/climate financing data.
   - The incomplete data sets include Minimum Service Standards on education facilities, social health, community protection (Perlindungan Masyarakat (LINMAS)) and housing.
   - The outdated data include WASH conditions in schools and households.
3. Data gaps. Data gaps occur in many instances, especially related to child risk assessments, climate education, food security, disability and youth participation, and social policy analysis, thereby limiting the creation of evidence-based policies. The data required for risk assessment must also be available spatially and temporally, consisting of socioeconomic information (e.g., population, poverty level), biophysical information (e.g., topography and land use), and point-based locations (e.g., observational climate data).
4. Development of sectoral statistical data. Environmental data are far behind in terms of timeliness and completeness, making it necessary to develop sectoral statistical information. The sectoral statistics are intended to fulfil the needs of the main tasks of ministries and agencies. Development of sectoral statistics can include synergies in realising a reliable, effective and efficient National Statistics System through the One Data Indonesia portal. This demand is to avoid duplication of statistical activities. However, there is still overlapping data between agencies in the portal.

ACCESSIBILITY

In addition to data availability, there are gaps in data accessibility, especially for cross-stakeholder users and the community. The KIIs and FGDs suggest data gaps in accessibility as follows:

1. The data format is not uniform. Non-uniform data formats are found in the nutritional data on child focus, including information on the prevalence of malnutrition and climate related disease incidence (dengue haemorrhagic fever, malaria, diarrhoea, pneumonia, acute respiratory infection), thus complicating the data analysis process. The difference in formatted data exists because each directorate has its format, and sometimes there is a format change due to regional expansion. Different data formats are also an obstacle in the Satu Data Indonesia portal, making connecting and data uniformity difficult. It is estimated that 80 per cent of data is unstructured[15]. The data are still in the form of pdf, CSV and XLS, with the report format of each file being different every year, indicating relatively high complexity.
2. Information systems are difficult to access, especially for vulnerable groups. Several information systems already exist, including disaster information systems (DIBI and NDMA's INARISK), BMKG climate information, population data (SIAK – Population Administration Information System/ Sistem Informasi Administrasi Kependudukan), SIMFONI-PPA, and the young people's programme (U-Report Indonesia). However, some information systems are not easy for vulnerable groups to understand, especially children. Increasing children's literacy and adaptive capacity is necessary to improve their resilience. Required information, such as user-friendly warning systems related to disaster risk, disease, and climatic conditions, must consider children's perspectives. The NDMA has published several child-friendly documents on early warning systems and responsiveness, but it must be linked to climate change projections and their impacts. Another concern is uneven distribution of internet and electricity networks, especially in rural areas. A lack of communication hinders broad access to available information systems. MoECRT reports that 8,522 schools (4%) throughout Indonesia do not have electricity, and 42,159 (19%) do not have internet access[178]. Therefore, child-friendly knowledge management systems should be developed with consideration for the identified obstacles. These challenges require coordination and cooperation of multistakeholder partnerships to accelerate the implementation of the six strategies proposed in Chapter 6.

Chapter 10: Recommendations For Child-Focused Climate, Environment And Energy Action

The Indonesian CLAC summarises the impacts of CEE issues on children, especially in social sectors (i.e., WASH, food and nutrition, health, education, child protection and social policy). However, there are gaps in current government policies and programmes. The study proposes strategies derived from in-depth analysis and discussions with the stakeholders; the strategies are then employed to formulate the recommendations.

The recommendations were formulated by considering the proposed strategies (Chapter 6), identified stakeholders (Chapter 7), actionable opportunities (Chapter 8), and knowledge and data needs (Chapter 9). The recommendations are intended to inform all stakeholders of the actions within CEE and relevant social sector policies, programmes and actions to protect children (as far as possible) from severe impacts and risks of climate change, environmental degradation, and energy crises, while building their capacity and involving them in decision making and action.

The detailed recommendations are described below.

1 **Advocate and raise awareness for mainstreaming child rights in policies, programming and financing through:**

- Public awareness on climate risks and impact on children in social sectors, strengthening CEE education and action.
- Institutionalisation and mainstreaming consideration of child climate vulnerabilities and impacts within CEE and related social sector policies to protect child rights and needs.
- Centre policies, programmes, strategies and guidelines on child rights and needs across the food system.
- Strengthening a) health sector awareness on CEE risks on child health and b) poverty alleviation policies and programmes with sensitivity to children and young people's vulnerabilities.
- Institutionalization of considerations of CEE risks in child protection policies on abuse and violence against children to prevent families adopting negative coping mechanisms such as child marriage and child sexual exploitation.

2 **Coordinate and collaborate on efforts to address climate risk across policies and programming by:**

- Strengthening private sector and civil society participation in climate action for children
- Coordinating working groups for nutrition and food security led by related ministries to integrate multistakeholder policies and efforts such as CSA, sustainable healthy diets, and supplementary feeding for pregnant women and children.
- Streamlining coordination in environmental health policies and programmes addressing climate change risks to children's health by reinforcing the functions of community health centres and paediatricians.
- Involving caregiver/parent groups in CEE related programmes and action projects led by school teachers.
- Coordinating mechanisms across all actors and sectors for child protection in emergencies.
- Committing to child focused climate related disaster risk reduction and management.

3 **Generate knowledge and evidence related to the climate and child well-being nexus to better inform programming through:**

- Enhancing capacity building on child-sensitive evidence generation; integration into environmental risk assessment frameworks.
- Strengthening children and young people's accessibility to information systems related to CEE.
- Generating more evidence on the climate change impact on WASH, child and adolescent health and well-being.
- Improving knowledge of climate risk assessments in the education sector; strengthening evidence on the impact of exposure to environmental pollution on children's cognitive skills and learning outcomes.
- Integrating CEE, DRR risks and climate-proofing in cash transfers.

4 **Strengthen systems to increase resilience to climate risk by:**

- Including child-sensitive climate change impacts on social sectors in integrated information systems.
- Strengthening child-sensitivity of systems and data in current energy and environment information systems.
- Strengthening child-sensitivity and climate resilience perspective in WASH policies and programmes.
- Building food and nutrition information systems to provide a source of credible, timely data for decision making on climate adaptation and mitigation.
- Developing and implementing action plans, policies or programmes that prevent and respond to climate related diseases.
- Improving climate resilience of social sector infrastructure and developing capacity in climate resilient construction and infrastructure.
- Improving climate literacy through education systems; scaling up climate-smart comprehensive safe school approach.
- Ensuring high quality and equity focused interventions at village level.

5 **Enable platform for youth engagement in CEE action through:**

- Empowering and supporting children and young people in exercising their rights to participate in CEE and social sector decision making and programming processes.
- Educating and training policymakers and the public on meaningful participation of children and adolescents in development and implementation of policies, programmes, frameworks, guidelines, and action plans.
- Building knowledge of families and caregivers on the linkages between climate change, food, and nutrition.
- Empowering innovation hubs and networks of young people through environmental education and awareness raising related to CEE issues capacity development support for action.
- Strengthening the Safe School Programme implementation and related guidelines with knowledge-building on historical and future climate change impacts; puting children and young people at the centre of actions.

6 **Strengthen data collection and early warning systems by:**

- data collection and monitoring systems on climate change impacts.
- Ensuring that data collection in social sector policies and programmes includes child-sensitive parameters that inform climate change risks.
- Collecting data on children's health related to climate change and environmental degradation.
- Ensuring that climate related data generated across sectors are harmonised and consolidated in one dashboard that is overseen by a lead ministry.
- Building partnerships to improve SDG related data quality and availability on child-focused CEE for planning and budgeting in the social sector policies and programmes.
- Strengthening data-informed early warning systems for extreme weather conditions and climate related disasters.
- Ensuring collection of age-disaggregated data of affected populations during emergencies and disasters to better inform climate related disaster impacts.
- Applying acknowledged humanitarian aid standards in emergency preparedness.

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Annex

ANNEX 1. LIST OF REVIEWED DOCUMENTS

A. List of CEE documents

Category of Document	No	Title
Policies	1	National Adaptation Plan 2019
	2	Climate Resilience Development Policy 2020-2045
	3	Updated NDC 2021
	4	NDC Roadmap on Climate Change Adaptation 2020
	5	NDC Roadmap on Mitigation 2019
	6	National Action Plan on Climate Change Adaptation 2014
	7	National Action Plan on Reducing Greenhouse Gas Emissions (RAN-GRK) and the Presidential Regulation No. 61/2011
	8	Long Term Strategy - Low Carbon and Climate Resilience 2050
	9	General National Energy Plan and the Presidential Regulation No. 22/2017
	10	National Energy Policy and Government Regulation No. 79/2014
	11	Electricity Supply Business Plan of PT Perusahaan Listrik Negara (PERSERO) from 2021 to 2030 and the Minister of Energy and Human Resources Decree No. 188/2021
	12	National Action Plan for Climate Change Mitigation and Adaptation for 2012-2020 and the Minister of Public Works Regulation No. 11/2012
	13	Strategic Plan of Ministry of Energy and Human Resources 2020-2024 and the Minister of Energy and Human Resources Regulation No. 16/2020
	14	Strategic Plan of MoEF 2020-2024 and the Minister of Environment and Forestry Regulation No. 16/2020
Regulations, Programmes, and Plans	15	Law No. 16/2016 on Ratification of the Paris Agreement (UNFCCC)
	16	Law No. 18/2013 on Prevention and Eradication of Forest Destruction
	17	Law No. 5/1990 on Conservation of Living Natural Resources and Ecosystems
	18	Law No. 32/2009 on Environmental Protection and Management Plan (RPPLH)
	19	Law No. 30/2007 on Energy
	20	Government Regulation No. 45/2004 on Forest Protection
	21	Presidential Regulation on the Economic Value of Carbon No. 98/2021
	22	Minister of Environment and Forestry Regulation No. P.7/2018 on Guidelines for Assessing Vulnerability, Risk and Impact of Climate Change
	23	Minister of Environment and Forestry Regulation No. P.72/2017 on Guidelines for the Implementation of Measurement, Reporting, and Verification of Actions and Resources for Climate Change Control
	24	Minister of Environment and Forestry Regulation No. P.71/2017 on the Implementation of the National Registry System for Climate Change Control
	25	Minister of Environment and Forestry Regulation No. P.83/2016 on Social Forestry
	26	Minister of Environment and Forestry Regulation No. P.18/2019 on the Use of Water and Water Energy in Wildlife Reserves, National Parks, Forest Parks, Nature Tourism Parks
	27	Minister of Environment and Forestry Regulation No. 1/2021 on Company Performance Rating Programme in Environmental Management
	28	Minister of Environment Regulation No. 19/2012 on Climate Village Programme
	29	Minister of Environment Regulation No. 27/2009 on Strategic Environmental Studies (KLHS)
	30	Minister of Environment Regulation No. 8/2010 on Criteria for Environmentally Friendly Buildings
	31	Minister of Environment and Forestry Regulation No. 33/2016 on Guidelines for the Preparation of Climate Change Adaptation Actions
	32	Roadmap on Climate Village Programme 2017

B. List of social sectors documents

Category of Document	No	Title
Policies	1	Health Sector studies: Nutrition Development in Indonesia 2019
	2	National Drinking Water Quality Supervision Roadmap 2020-2030
	3	General Plan for the Development of Farmers Corporation-based Food Estate Areas 2021
	4	National Industrial Development Master Plan RIPIN 2015-2035 and the Government Regulation No. 14/2015
	5	Master Plan for Disaster Management for 2020-2044 and the Presidential Regulation No. 87/2020
	6	National Action Plan for the Protection and Empowerment of Women and Children in Social Conflict 2020-2025 and Coordinating Minister for Human Development and Culture Regulation No. 5/2021
	7	National Disaster Management Plan on National Board for Disaster Management 2020-2024
	8	Environmental Health Action Plan 2020-2024
	9	Strategic Plan of the NDPA 2020-2024 and Minister of National Development Planning Regulation No. 11/2020
	10	Strategic Plan of the NDMA 2020-2024 and NDMA Regulation No.5/2020
	11	Strategic Plan of CBS 2020-2024 and Regulation of the Head of the Central Bureau of Statistics No. 36/2020
	12	Strategic Plan of MoHA 2020-2024 and Minister of Home Affairs Regulation No. 67/2020
	13	Strategic Plan of Ministry of Education, Culture, Research and Technology 2020-2024
	14	Strategic Plan of MoH 2020-2024 and Minister of Health Regulation No. 21/2020
	15	Strategic Plan of MoFA 2020-2024 and Minister of Foreign Affairs Decision No. 28/2020
	16	Strategic Plan of MoI 2020-2024 and Minister of Industry Regulation No. 15/2020
	17	Strategic Plan of MoSA 2020-2024 and Minister of Social Affairs Regulation No. 6/2020
	18	Strategic Plan of Ministry of Agriculture 2020-2024 and Minister of Agriculture's Decision No. 259/2020
	19	Strategic Plan of Ministry of Women Empowerment and Child Protection 2020-2024 and Minister of Women's Empowerment and Child Protection Regulation No. 2/2020
	20	Strategic Plan of Ministry of Public Works and Human Settlements 2020-2024 and Minister of Public Works and Human Settlements Regulation No. 23/2020
	21	Strategic Plan of MoV 2020-2024 and Minister of Villages, Development of Disadvantaged Regions, and Transmigration Regulation No. 17/2020
Regulations, Programmes, and Plans	22	Law No. 18/2020 on National Medium-Term Development Plan (RPJMN) 2020-2024
	23	Law No. 35/2014 on amendments to Law No. 23/2002 on child protection and Law No. 23/2002
	24	Law No. 18/2012 on Food
	25	Law No. 41/2009 on Protection of Sustainable Agriculture Land
	26	Law No. 1/2011 on Housing and Settlement Area
	27	Law No. 36/2009 on Health
	28	Law No. 26/2007 on Spatial Planning
	29	Law No. 24/2007 on Disaster Management
	30	Law No. 11/2009 on Social Welfare
	31	Law No. 20/2003 on National Education System
	32	Government Regulation No. 1/2011 on Determination and Transfer of Agricultural Land Functions for Sustainable Food
	33	Government Regulation No. 17/2015 on Food Security and Nutrition
	34	Government Regulation No. 64/2010 on Disaster Mitigation in Coastal Areas and Small Islands
	35	Government Regulation No. 21/2008 on Disaster Management
	36	Government Regulation No. 22/2008 Funding and Management of Disaster Assistance
	37	Government Regulation No. 23/2008 on the Role of International Institutions and Foreign Non-Governmental Organizations in Disaster Management
	38	Government Regulation No. 42/2020 on Accessibility to Settlements, Public Services, and Protection from Disasters for Persons with Disabilities
	39	Government Regulation No. 66/2014 on Environmental Health
	40	Government Regulation No. 29/2019 on Coordination of Child Protection
	41	Presidential Regulation No. 33/2011 on National Policy on Water Resources Management
	42	Presidential Regulation No. 22 of 2009 on the Policy of Accelerating the Diversification of Food Consumption Based on Local Resources
	43	Minister of Energy and Human Resources Regulation No. 9/2019 on Optimizing the Utilization of Groundwater Exploration Drilling

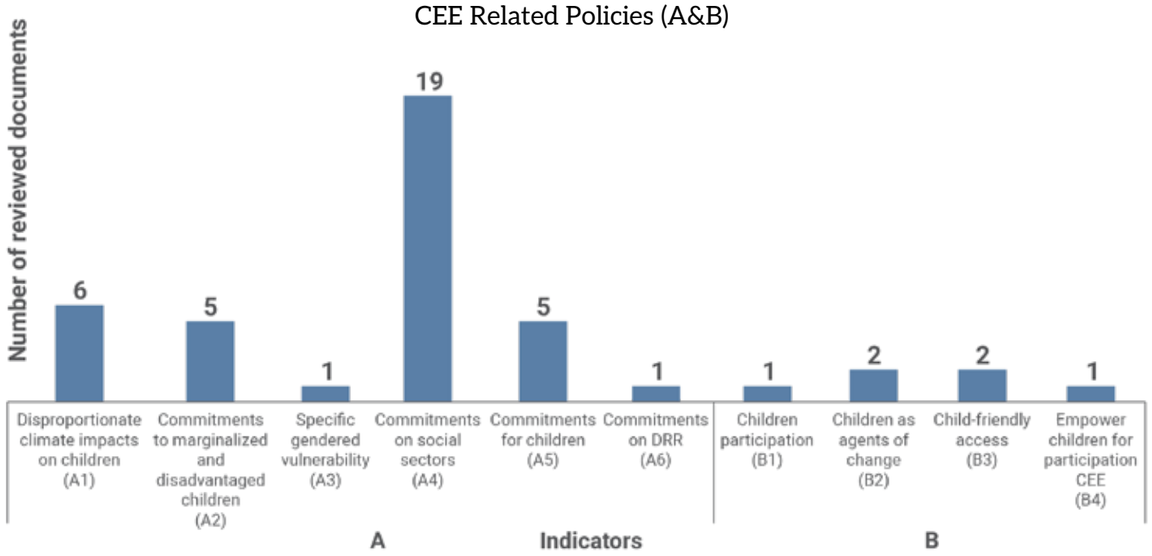
Category of Document	No	Title
	44	Minister of Energy and Human Resources Regulation No. 20/2017 concerning Guidelines for Determining Groundwater Acquisition Value
	45	Minister of Energy and Human Resources Regulation No. 15/2012 on Saving Groundwater Use
	46	Minister of Energy and Human Resources Regulation No. 17/2019 on Water Resources
	47	Minister of Home Affairs Regulation No. 70/2016 on Guidelines for Providing Subsidies from Regional Governments to Regional Owned Enterprises Organizing Drinking Water Supply Systems
	48	Minister of Home Affairs Regulation No. 33/2006 on General Guidelines for Disaster Mitigation
	49	Minister of Home Affairs Regulation No. 101/2018 on Basic Service Technical Standards on Minimum Service Standards for District/city Disaster Management
	50	Minister of Home Affairs Regulation No. 17/2021 on Guidelines for the Preparation of Local Government Work Plans for 2022
	51	Minister of Health Regulation No. 492/2010 on Drinking Water Quality Requirements
	52	Minister of Health Regulation No. 3/2014 on Community Based Total sanitation
	53	Minister of Health Regulation No. 1018/2011 on Health Sector Adaptation Strategy to Climate Change Impacts
	54	Minister of Health Regulation No. 35/2012 on Guidelines for Identifying Health Risk Factors Due to Climate Change
	55	Minister of Health Regulation No. 41/2014 on Guidelines for Balanced Nutrition
	56	Minister of Health Regulation No. 7/2019 on Hospital Environmental Health
	57	Minister of Health Regulation No. 1077/2011 on Indoor Air Health Guideline
	58	Minister of Health Regulation No. 29/2019 on Overcoming Nutritional Problems for Children due to Disease
	59	Minister of Agriculture Regulation No. 39/2018 on Early Warning System and Management of Climate Change Impacts in the Agricultural Sector
	60	Minister of Environment and Forestry Regulation No. P.56/2015 on Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Health Care Facilities
	61	Minister of Environment and Forestry Regulation No. P.16/2019 regarding the second amendment of Regulation No. 5/2014 on Wastewater Quality Standards
	62	Minister of Environment and Forestry Regulation No. P.80/2019 on amendments to Regulation No. P.93/2018 regarding Continuous and Online Monitoring of Wastewater Quality for Businesses and/or Activities

Category of Document	No	Title
	63	Minister of Women's Empowerment and Child Protection Regulation No. 5/2011 on Policies to Fulfil Children's Education Rights
	64	Minister of Women's Empowerment and Child Protection Regulation No. 13/2020 on the Protection of Women and the Protection of Children from Gender-based Violence in Disasters
	65	Ministerial Regulation of Women's Empowerment and Child Protection No. 12/2011 on Child-friendly District/City Indicators
	66	Minister of Public Works and Public Housing Regulation No. 4/2017 concerning Implementation of Domestic Wastewater Management System
	67	Ministerial Regulation of Women's Empowerment and Child Protection No. 1/2011 on the Socio-cultural National Strategy to Achieve Gender Equality
	68	Ministerial Regulation of Women's Empowerment and Child Protection No. 18/2019 on the Organization of Child Forum
	69	Regulation of the Head of the National Disaster Management Agency No. 1/2012 on General Guidelines for Disaster-resilient Villages/District
	70	Regulation of the Head of the National Disaster Management Agency No. 4/2012 on Implementation of Disaster Safe Schools
	71	Regulation of the Head of the National Disaster Management Agency No. 13/2014 on Gender Mainstreaming in Disaster Management
	72	Regulation of the Head of the National Disaster Management Agency No. 12/2014 on Participation of Business Institutions in Disaster Management
	73	Regulation of the Head of the National Disaster Management Agency No. 14/2014 on Handling, Protection, and Participation of People with Disability in Disaster Management
	74	Minister of Social Affairs Regulation No. 5/2021 on the Implementation of the Basic Food Programme (Sembako)
	75	Minister of Social Affairs Regulation No. 20/2017 on Routine Social Rehabilitation and Environmental Infrastructure and Minister of Social Affairs Regulation No. 6/2021 on amendments to the Minister of Social Affairs No. 20 of 2017
	76	Minister of Education and Culture Regulation No. 33/2019 on Disaster Safe Education Unit (SPAB)
	77	Minister of Industry Regulation No. 39/2018 on procedures for green industry certification
	78	Minister of Village Regulation, Development of Disadvantaged Regions, and Transmigration No. 7/2021 on Priority for Use of Village Funds in 2022

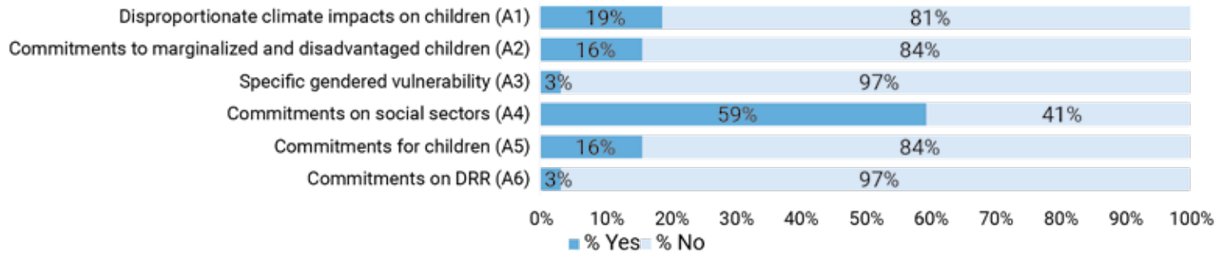
Category of Document	No	Title
Tools	79	General guidelines on Community-Based Water Supply and Sanitation
	80	Technical Guidelines for the Provision of Community-Based Drinking Water and Sanitation
	81	Community Based Sanitation (SANIMAS) Technical Instructions
	82	Community Based Total Sanitation Technical Implementation
	83	Standard Guidelines for Disaster Preparedness of Family Services
	84	Disaster Resilient Family Module
	85	Disaster Safe Education Unit Learning Book (SPAB)
	86	Disaster Resilient Education Book
	87	Disaster Preparedness Exercise Guide
	88	Disaster preparedness pocket book
	89	Guidelines for sanitation development in elementary schools
	90	Guidebook for Healthy Living Community Movement
	91	General Guidance Sembako Programme 2020
	92	Independent Learning Guidebook for Independent Campus
	93	Advocacy materials for Child-Friendly District/City policies
	94	Green industry award appraisal

ANNEX 2. DESK REVIEW FOR CEE AND SOCIAL SECTORS POLICIES AND PROGRAMMES

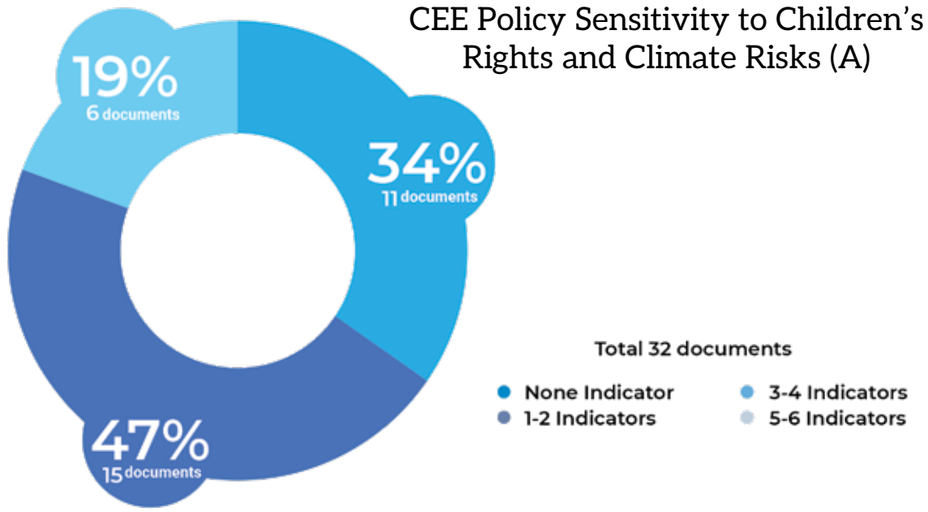
CEE Related Policies (A&B)



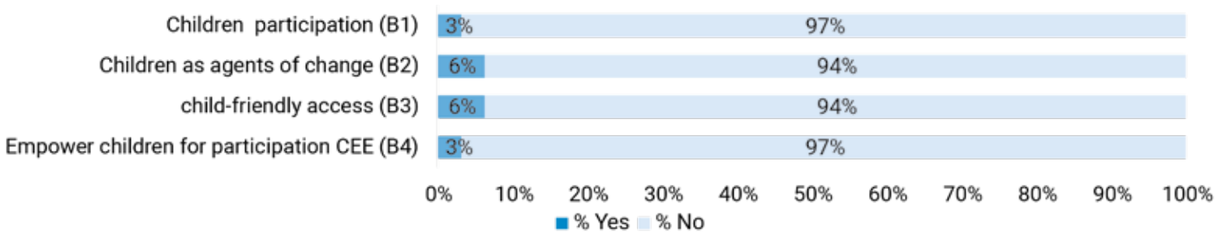
Climate, Environment And Energy Policy Sensitivity To Children's Rights And Climate Risks

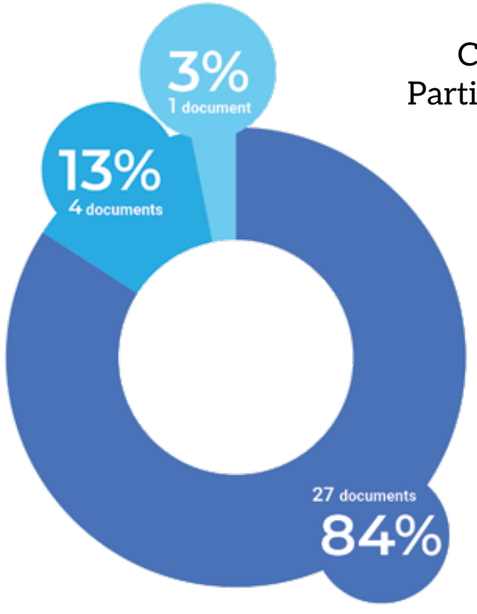


CEE Policy Sensitivity to Children's Rights and Climate Risks (A)



Children and young people's participation and empowerment (B)



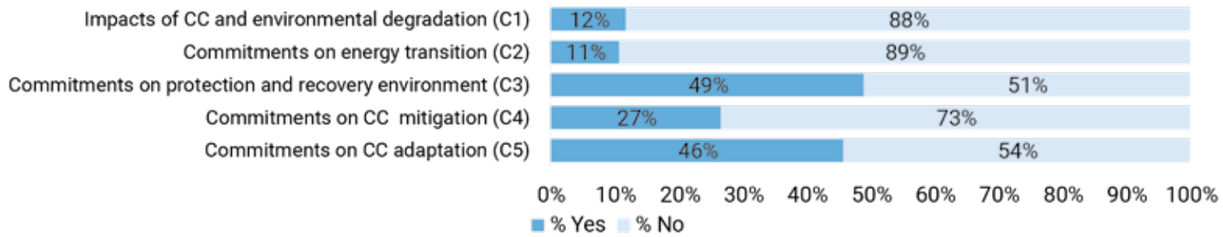


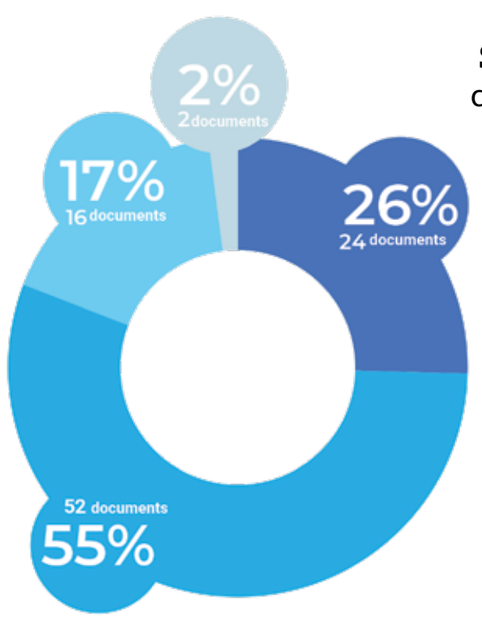
Children and Young People's Participation and Empowerment (B)

Total 32 documents

- None Indicator
- 1 Indicators
- 2-3 Indicators
- 4 Indicators

Social sector policy sensitivity to climate, environment, and energy risks and vulnerabilities (C)





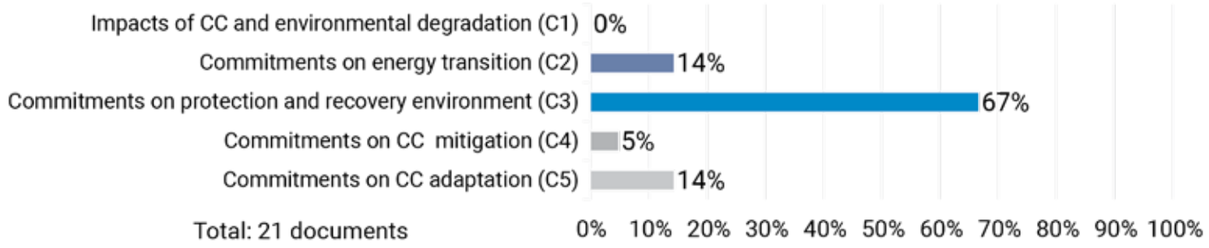
Social sector policy sensitivity to climate, environment, and energy risks and vulnerabilities (C)

Total 94 documents

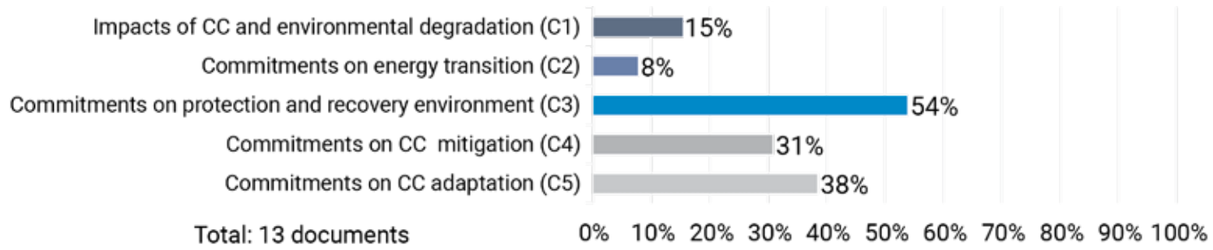
- None Indicator
- 1-2 Indicators
- 3-4 Indicators
- 5 Indicators

Specific Social Sectors

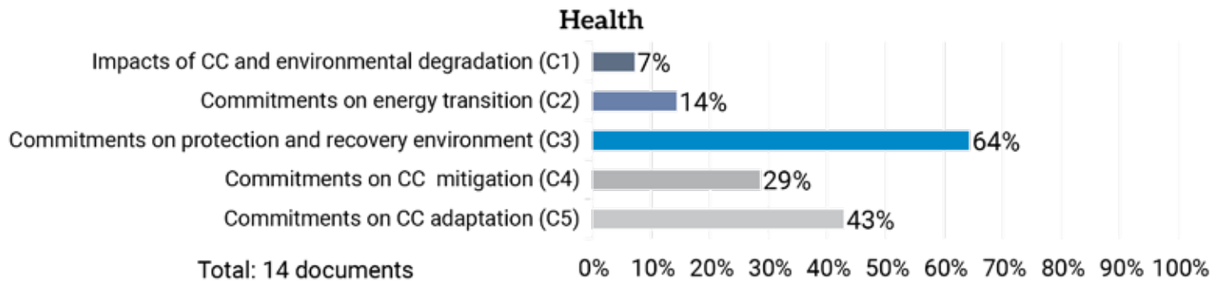
WASH



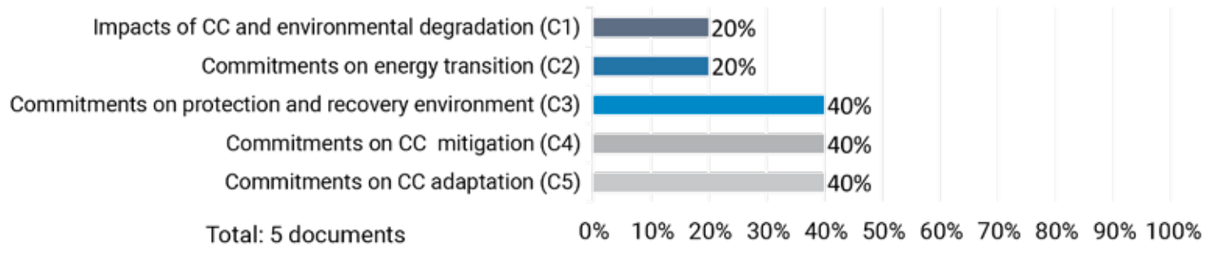
Nutrition and Food Security



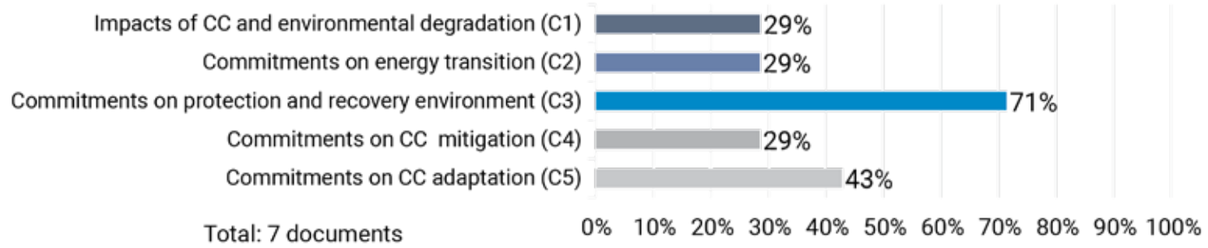
Health



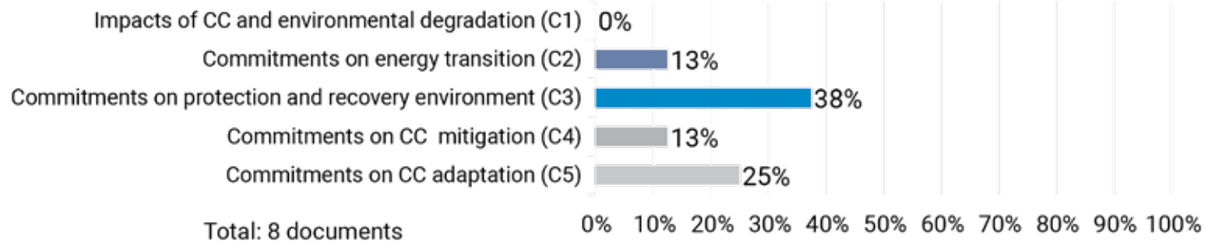
Education



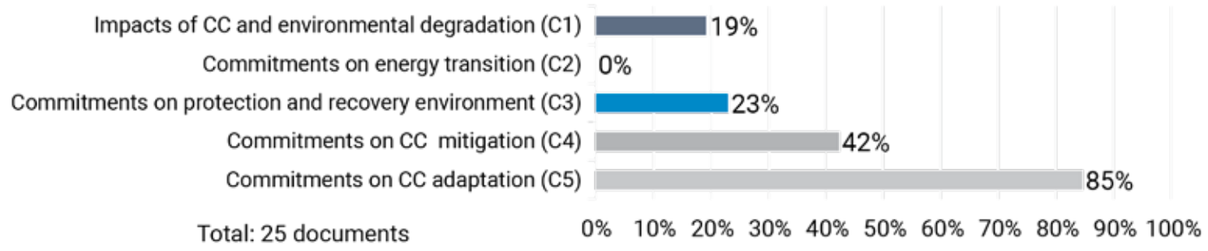
Child Protection



Social Policy/Protection



Cross-cutting issues



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