

Vulnerable Voices: Assessing the Impacts of Climate Change on Children's Well-Being

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ABSTRACT

Climate change presents a serious threat to health, education and overall well-being of children; affecting their basic rights in the society. Children from vulnerable regions face even more complex challenges like malnutrition, hurdles in education and serious health risks. Inequitable climate policies exacerbates the inequality between different regions and groups, intensifying the existing socio-economic issues. To protect the basic rights of the children, particularly of vulnerable groups, and to ensure their meaningful inclusion in climate adaptation and mitigation strategies, urgent action is needed. The objective of this paper is to analyse the adverse physical and mental impacts of climate change on children, and its effects on the rights of the children, particularly focusing on vulnerable populations in India and emphasising the critical need for protective measures. Using a comprehensive review of literature, this study examines global climate change reports, scientific findings, official documents and socio-economic data. Analytical framework assess the relationship between climate change and children's rights. United Nations Convention on the Rights of Children (UNCRC) and global climate agreements provide the base for understanding policy effectiveness. The study concludes that children, particularly in India, have to face increased risks of climate change, necessitating targeted policies. Also, to formulate strategies and policies that protect children and their rights from climate-induced problems, it is important to understand and acknowledge their unique vulnerabilities.

Keywords – Climate Change, Child Rights, UNRCC, Climate Governance

INTRODUCTION

The climate crisis has become the most pressing issue the world is facing today. It is now globally accepted that climate change is underway and effective steps are needed to be taken right now to minimize, if not completely stop, the disastrous effects of climate change. The predictions and speculations made by the scientists in the past few decades are turning out to be true and the climate crisis is actually affecting the planet more intensely than they originally thought.

There has been an increase of 1.1°C in the global temperature between 1850-1900 and 2001-2020, with larger increases over land than over the ocean. The observed increase in warming is due to anthropogenic factors, with emission of Greenhouse gases, mainly CO₂ and Methane (IPCC, 2023). The worldwide emission of greenhouse gases through various sources like deforestation and burning of fossil fuels has been established as the main reason behind global warming. If the emissions keep increasing at the current rate, the rise in global temperature is expected to reach as high as 1.5°C above pre-industrial levels very soon according to the latest IPCC (2023) report. This continued rise in the global temperature doesn't only have health implications but also poses other major threats such as increase in climate related disasters, environmental migration, loss of livelihood, food insecurity, water scarcity, disruption in economic development and various other issues that humans are not fully prepared for.

Unlike other issues in the world, climate change spares no-one. But there are people and groups who disproportionately bear the brunt of climate change. Unlike others, disadvantaged and marginalized people have

to face this problem directly and with limited resources to fight. Hence, climate change can not be treated just as an environmental crisis. It is deeply intertwined with the patterns of marginalization and inequality. It affects those groups the most who contribute the least to carbon emissions. Some sections of the society such as women, children, elderly, indigenous people, ethnic minorities, migrant workers, persons with disabilities etc. are particularly vulnerable to the impact of climate change. According to World Bank (2023), “..it is a social crisis and compels us to address issues of inequality on many levels: between wealthy and poor countries; between rich and poor within countries; between men and women, and between generations”.

As the impact of climate change keep getting worse with time, the children and youth of today will have to face its worst consequences. They have to live most of their lives in the future. Hence, the policies related to climate change must consider that its impact is not equally distributed and special attention is needed to protect children and youth. Their rights should be protected, their voices should be heard, and they should be included in the adaptation and mitigation strategies,. According to the former UNICEF executive director Antony Lake, “ There may be no greater growing threat facing the world’s children – and their children – than climate change. This mounting global crisis has the potential to undermine many of the gains we have made in child survival and development – and poses even greater dangers ahead” (UNICEF, 2015)

Current State of the Global Climate Change

The deteriorating condition of the environment that can be felt all over the world is making it evident that climate change is bringing more and more problems every year. The increasing rate of occurrences of natural disasters, irregular rainfalls, melting glaciers, rising global temperature, and increasing pollution indicate that the time has come that climate change is taken seriously. It is no more an issue to be fought in the future. It is happening now. The experts around the world warned the world about climate change long ago, but the first step to address climate change on a global level was taken in 1992 when the ‘Earth Summit’ took place in Rio de Janeiro, which led to the formation of United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC is an international environment treaty made for the purpose of reducing the greenhouse gases’ emissions at global level to such an extent that it doesn’t harm the natural cycle of the climate and hence prevent damage to human environment due to emission of GHGs. 199 countries are now part of the UNFCCC (UNFCCC, 2023). Important treaties like Kyoto protocol in 1997 and Paris agreement in 2015 were signed under UNFCCC. The main goal of both these agreements is to keep the GHG concentrations in the atmosphere in check. UNFCCC also emphasizes on the importance of effective adaptation strategies and acknowledges the differences in the level of vulnerability of different groups and people to climate change (UNFCCC, undated).

Despite the global consensus to limit global warming to 1.5°C above pre industrial levels in the Paris Agreement (2015), none of the countries took effective measures to actually reduce the emissions. ‘State of the Global Climate Report 2022’, released by the World Meteorological Organisation (WMO) pointed out that the Paris agreement has failed to equitably phase-out fossil fuels responsible for the climate change (World Meteorological Organisation, 2022). The report by Who (2022) provided worrying figures about the atmospheric concentration of the greenhouse gases. According to the report, CO₂ has reached 149% of pre-industrial levels, while Methane and Nitrous Oxide has reached 262% and 124% of pre-industrial levels respectively. It also pointed out that the eight years after the Paris agreement (2015-2022) were the 8 warmest years to be recorded with instrument (World Meteorological Organisation, 2022). Not surprisingly, the years 2023, 2024 and 2025 kept this trend intact, with the consolidated average temperature increase in these three years being 1.44°C above pre-industrial levels (World Meteorological Organization, 2026).

The Intergovernmental Panel on Climate Change Report 2023 warns the world that Global Warming is likely to reach 1.5°C between 2021 and 2040 even if the GHG emissions are controlled right now, and it is very much likely to exceed 1.5°C if emissions continue to happen on the current rate. It states that we have no time to waste now and effective actions must be taken right away as the damages that climate change is going to cause if necessary steps are not taken right now, will be irreversible and life threatening, and will disproportionately affect the most vulnerable populations (UNFCCC, 2023)

Climate change has exceeded all the predictions made by the environmentalists and scientists in the previous decades. The reason behind it is that the anthropogenic contribution to climate change has increased beyond

control in the past few decades. As a result, temperature records are being broken every year, heat waves have become a common phenomenon, many countries are facing floods, drought and resource shortages, seasonal wildfire are happening everywhere in the world and patterns of monsoon have become completely unpredictable. But the impact is not only environmental. All these problems exacerbate the factors that cause socio-economic and socio-political problems. The extreme weather events caused by climate change are one of the reasons behind global rise in hunger and poor nutrition (United Nations, undated).

Though climate change affects everyone in the world in some way or the other, people and community involved in farming, fisheries, animal husbandry etc. are facing direct consequences of climate change. As a result, they are slipping into poverty. Floods and drought all around the world are compelling communities to migrate. In the last decade (2010-2019), an average of 23.1 million people were displaced every year due to climate-related weather events (ibid). Even though 1°C above pre-industrial levels does not sound scary, its effects have already been too hot to handle. On top of that, the predictions of this global temperature rise going over 1.5°C in the coming years more or less guarantees that more severe effects are yet to be seen. So there could be no safer time to say that this is the moment when we need to move towards the goal of zero emissions urgently, otherwise we will have to face an existential threat. The well being of children are at serious risk and effective climate policies must be formulated and implemented right away with special considerations for children.

How does Climate change affect children

Children are more vulnerable to impacts of climate change than adults. The youngest members of society will face the urgent and potentially fatal consequences of climate-induced calamities, food scarcity, heightened air pollution, elevated vulnerability to illnesses transmitted by vectors, respiratory infections, diarrhea, and malnourishment. Studies suggest that these risks can significantly impede a child's early growth and development (American Academy of Pediatrics, 2015). Due to their distinct metabolic, physiological, and developmental requirements, children rely heavily on adults for their survival and growth. This increased dependence on adults can make them more vulnerable to the adverse effects of climate change, including variations in climate patterns and extreme weather events (Bartlett, 2008). Also, the rate at which children, particularly those in their early stages of development, conduct their daily activities is relatively swifter than that of adults, rendering them more susceptible to negative influences in their surroundings. For example, it is a known fact that young children have a breathing rate that is twice that of adults. Hence, in environment tainted with pollution, their likelihood of experiencing respiratory infections such as pneumonia or developing ailments such as asthma is significantly higher in contrast to that of adults (World Health Organization, 2018). Apart from the serious physical health implications, Climate change also tends to affect mental health of children. The fears of children regarding climate change are focused on both anticipated and unforeseeable impacts in the future. Direct experience with natural calamities can result in post-traumatic stress disorder symptoms, such as panic attacks, bad dreams, difficulty in sleeping, hypervigilance, etc. (Lai & Greca, 2020). Studies have also shown that kids who experience increased levels of urban pollution are at a greater risk of developing attention-related issues and displaying signs of anxiety and depression. Furthermore, they may exhibit poorer academic performance and impaired brain function (UNICEF, 2017).

Children are more vulnerable to diseases transmitted by vectors like malaria, dengue, and other illnesses associated with contaminated water and poor sanitation. In 2021, approximately 619,000 deaths were attributed to malaria, with 77% of the victims being children below the age of 5 (UNICEF Data, 2023). According to a 2021 UNICEF report, almost every child on the earth (more than 99%) is facing at least one of the major climate related hazard or stress. The findings also unveiled that a staggering 820 million children, accounting for more than one third of all children worldwide, are presently facing significant vulnerability to heatwaves with 2020 being tied as the hottest year ever recorded. Additionally, approximately 400 million children are currently highly exposed to cyclones, 330 million are at great risk from riverine flooding, 920 million face severe water scarcity, 600 million are highly susceptible to vector-borne diseases, and an astonishing 2 billion children, which is nearly 90% of all children globally, are heavily impacted by air pollution (UNICEF, 2021).

Childhood, being the most sensitive age for a person, must be treated as separate from adulthood. The general human rights for people directly applies to the children, but there are some specific rights only for children, which are very significant for their survival and development. 'The United Nations Convention on the Rights of

the Child' (UNCRC) is a global legal structure that outlines the essential rights of children and the obligations of governments in safeguarding those rights. The UNCRC consists of 54 provisions focusing on various aspects of children's rights, which can be categorized into four main themes: the rights to survival, development, protection, and participation. These rights are interconnected and form a comprehensive framework (UNFCCC, undated).

Survival rights include the right to live and access fundamental necessities crucial for existence, such as sustenance, housing, an acceptable standard of living, and availability of healthcare facilities; protection rights guarantee that children are protected from any kind of mistreatment, negligence, and exploitation; participation rights encompass the freedom of children to voice their opinions and actively participate in decisions that impact their own lives; and development rights encompass the rights of children to engage in play, leisure, and cultural activities. Climate change has an impact on all of these rights to varying degrees (Arts, 2019).

A child's survival rights and development rights are directly undermined by the growing occurrences of climate-related calamities. Moreover, climate change and its associated disasters heighten the vulnerability to diseases and hunger. The destruction of important infrastructure, including residences, medical facilities, and educational institutions, poses the most direct and immediate danger to the child's right to survival (Child Rights Now!, 2019). The effects of climate change on nutrition, as well as physical and mental health, have a detrimental impact on children's capacity to learn, which directly affect their right to development (Lai & Greca, 2020). The loss of family livelihoods and income caused by climate-related pressures is also linked to a decline in education, as children are compelled to assist with household chores or seek employment, resulting in a rise in child labor, child marriages, and other violations of their protection rights (UNICEF, 2015). The participation rights of children are at risk due to the restricted opportunities for them to express their opinions and contribute solutions to the challenges posed by climate change and climate-induced disasters.

Though importance of healthy environment were mentioned, there was no proper discourse in the UNCRC framework about climate change until recently. In October 2021, UNCRC, in a historic ruling, came to a decision that from now on, a state can be held responsible for the negative impacts of their carbon emissions on not only the rights of the children of their territory but also on the rights of children in other territories. This happened after 16 children from 12 countries filed a petition against Argentina, Brazil, France, Germany and Turkey in 2019 for being 'historic emitters' (UN Human Rights, 2021).

The global discussions on climate change acknowledge that impact of climate change disproportionately affects children to a greater extent compared to adults. But not every child is equally affected either. Children and adolescents who encounter an increased number of risk factors and experience limited protective factors are particularly vulnerable to the adverse effects of climate change. The majority of the global child population resides in low and middle income countries, which are often situated in geographically vulnerable areas prone to the effects of climate change. These nations also tend to suffer from inadequate infrastructure and limited resources and services, hindering their ability to adequately prepare for and adapt to the impacts of climate change (Hanna & Olivia, 2016). Climate change exacerbates inequity as its effects disproportionately affect children in marginalized regions, including those from impoverished countries, developing nations, rural areas, and indigenous communities. Apart from inclusion of child rights and agency in the policies related to climate change, the special needs of children from the more affected regions should be recognized and their participation in the fight against climate change should be ensured so that they don't lag behind.

Disproportionate vulnerability of Indian Children

India is a country with the largest youth population and will continue to be the country to have the youngest population in the world till 2030 (UNFPA India, 2023). As the experts around the world have claimed that the impacts of climate change will disproportionately affect certain population of the world, India and its people are one such population. India's diverse geographical characteristics give rise to a variety of climatic conditions. These encompass the frigid Himalayas capped with glaciers, the moist subtropical climate prevalent in the northern, central, and eastern regions, the tropical climate found in the southern and southwestern parts, and the dry and semi-arid conditions in the western and south-central areas. In its most recent report, the Global Climate Risk Index assigned India the 7th spot in the list of countries most vulnerable to the impact of climate change,

based on its susceptibility to severe weather events (Eckstein et al., 2021). According to the Indian Meteorological Department, the periods of 2001-2020 and 2011-2020 have emerged as the warmest decades experienced by India since the year 1901. Over the course of 120 years, the average winter temperature has risen by 0.70°C , while the average post-monsoon temperature increasing by 0.52°C . Furthermore, the year 2018 was ranked as the sixth warmest year on record since 1901, coinciding with the sixth lowest monsoon rainfall in the same time frame. These statistics present a highly concerning outlook for the future, as the report indicates an ongoing trend of escalating climate conditions each decade (Indian Meteorological Department, 2022). Projections suggest that even with the implementation of necessary measures, future generations will still bear the adverse consequences of the actions of both present and past generations. However, failure to undertake the essential measures could result in life-threatening outcomes.

According to a report by climate risk specialist XDI Cross Dependency Initiative, India secured the third position among the top 50 nations at greatest risk from the consequences of climate change by 2050. This ranking was determined based on the number of vulnerable states and populations in every country (Firstpost, 2023). India is a home to thousands of communities that rely on the nature for their survival. Their lives are directly affected with the changing patterns of weather and unprecedented occurrences of climate-related calamities. Children depends on their parents and other adult relatives for their survival and development. It is proven in scientific studies that children are more vulnerable than adults to various physical and mental illnesses due to their distinct metabolic, physiological, and developmental requirements (Bartlett, 2008). So, when climate induced disasters and other climate related problems affect the caregivers or parents, it will impact the children more intensely, irrespective of their minimal or no contribution to the factors that caused the event. A recent study based on some vulnerable districts of India, found that a significant number of households experienced migration of one or both parents in search of improved employment opportunities. When climate-related disasters occurred, female heads of households encountered heightened difficulties in achieving economic recovery due to restricted job options, lower wages within specific industries, and additional familial obligations. Furthermore, the absence of a primary caregiver due to outdoor employment had adverse effects on children's education, health, and access to food, thereby detrimentally impacting their overall welfare. According to the study, approximately 30% of households where children were diagnosed with malnutrition experienced the absence of the primary caregiver (Save the Children India, 2020). Young children are impacted by the absence of their parents through reduced parental care and changes in available family resources. However, for slightly older children, the impact expands to include an adjustment in their responsibilities as they assume the role of the missing parent by taking on household or agricultural tasks (Lei et al., 2020). This doesn't only hamper their basic requirements as a child, but also violates their survival rights, developmental rights, protection rights and many other basic rights, all at once.

According to the Global Multidimensional Poverty Index report, India has witnessed a reduction of approximately 415 million individuals living in poverty over the past 15 years. However, India still continues to hold the record for having the greatest number of impoverished individuals and children globally. The report highlighted that poverty among children experienced a more rapid decline. Nevertheless, India still possesses the largest quantity of impoverished children worldwide, comprising a staggering 97 million individuals or approximately 21.8 percent of the Indian child population aged between 0 and 17 years. (United Nations Development Programme, 2022). People who are economically disadvantaged are at a higher risk because they lack sufficient resources and information needed to adapt to the changing climate. Consequently, their nutrition intake, ability to access healthcare facilities, and affordability of such services are also impacted, rendering them vulnerable to various problems associated with climate change (Nguyen et al., 2017). Communities and people that rely on natural resources for their survival are facing serious economic crisis due to incessant loss of biodiversity and unpredictable changes in weather conditions. A study in India revealed that children living in the areas characterized by a significantly high level of vulnerability had a greater likelihood of experiencing malnutrition compared to those residing in areas with a considerably low level of vulnerability. The analysis demonstrated that children belonging to the areas classified as very highly vulnerable had a 32% higher chance of experiencing stunting (too short for their age), a 42% higher chance of wasting (too thin for their height), a 45% higher chance of being underweight, and a 63% higher chance of developing anemia, in comparison to children from the areas categorized as being less vulnerable (Mahapatra et al., 2021).

The projected consequences of climate change on people's livelihood are expected to bring about significant societal upheavals and worsened disparities, leading to increased migration, heightened poverty levels, and deteriorating health conditions. In such scenario, the role of primary healthcare system becomes important. Considering that primary healthcare should serve as the initial point of contact between the population and the healthcare system, it is concerning that current initiatives to rejuvenate primary healthcare neglect to sufficiently address climate action, encompassing both mitigation and adaptation (Kadandale et al., 2020). Numerous rural regions, particularly Bihar, Jharkhand, Andhra Pradesh, Uttar Pradesh, and West Bengal, are struggling with inadequate healthcare infrastructure, specifically facing a severe scarcity of Primary Health Centers (PHCs) (Business Insider India, 2022)). Less number of PHCs translates to increased distance in terms of healthcare accessibility and places an additional burden on existing facilities. A report reveals that Jharkhand, for instance, possesses merely 291 PHCs, whereas it requires a minimum of 1,000 to adequately serve its population. Similarly, U.P. is facing a shortage of 51% than the number of PHCs needed, and West Bengal and Andhra Pradesh are facing a shortage of 58% and 60% respectively (Kapoor & Duggal, 2022). The lack of basic healthcare system exacerbates the health related problems of the vulnerable populations. They tend to ignore the declining health of the children until they fall seriously ill. Worrying about their mental health is something that never even comes in the picture.

Events related to climate change has also affected the education of the Indian children in general, and the children in vulnerable regions in particular. When natural disasters occur, it sometimes destroys the school infrastructure or the roads used for going to school. Also, most of the times when such events occur, schools are utilized as the disaster relief centers. In both cases, the accessibility of education for children is hindered (Save the Children India, 2020). Children residing in regions prone to drought face difficulties in regularly attending school because they have the responsibility of fetching water for their families. The increased duration of water collection caused by water scarcity and pollution contributes to their struggle (UNICEF, 2022a). Based on the report of Cross Dependency Initiative, nine states in India have been identified as the most susceptible to climate change on a global scale. However, what is even more alarming is that, except for Kerala, the remaining eight states have the highest and startling rates of school dropout among children. This clearly indicates that the states are experiencing an increase in school dropout rates due to the threat posed by climate change. According to the ministry of education, the school dropout rate in Punjab has witnessed a remarkable increase, multiplying by fifteen times over the past four years (Singh, 2023). Similarly, Bihar has consistently reported the highest rates of school dropout over a three-year span, with percentages of 13.3% in 2017-18, 12.9% in 2018-19, and 9.2% in 2019-20 (Kumari, 2022). The other 5 states, Uttar Pradesh (Jafri, 2023), Maharashtra (Malik, 2023), Gujarat (First India Bureau, 2021), Tamil Nadu (Raman, 2020), Assam (Sentinel Digital Desk, 2022) and Rajasthan (The Times of India, 2022)) have also faced high number of school dropouts along with being the most vulnerable states to climate change. Another common characteristic found in all these stats related to school dropouts is that the ratio of girls dropping out of the school was more than boys. The impact of climate change on education is worsened by traditional gender roles and socio-cultural norms. This is especially evident for girls who frequently shoulder household responsibilities, which become more demanding during environmental crises. As families cope with the aftermath of disasters or strive to adjust to changing circumstances, the pressure on young girls to leave school and contribute to domestic duties becomes even greater (Leal et al, 2023). Though, the problem of hampering of education due to events related to climate change is more common in rural areas, urban areas are also facing similar issues these days. Schools being closed more than the usual number of holidays due to extreme winters, rainfalls and summers have already become a norm, but a shocking event happened when recently, Delhi Government had to close their schools for a few days due to severe air-pollution (Kalita, 2021). Air pollution causes serious health implications and children are more vulnerable to its effects than adults. According to World Air Quality 2022 report, India holds the eighth position among the most polluted nations worldwide. The average concentration of PM 2.5 in India during 2022 exceeded the World Health Organization's annual air quality guideline value by 10.7 times (IQAir, 2022). Exposure to polluted air amplifies the likelihood of young children developing chronic and acute poor respiratory infections, pneumonia, and related mortality (Dey, 2022). The substantial growth of industries, proliferation of coal-fired power plants, escalating instances of forest fires, extensive stubble burning, and the rise in the use of fossil fuel-powered vehicles on a mass level collectively contribute to the significant causes of air pollution in India (AQI, 2019). These factors have far-reaching effects on the health of people residing miles away. The problems of air pollution is affecting urban children more than they affect the rural children as the concentration of polluted air in the environment is more in the urban areas

(UNICEF, 2016). This also indicates that the consequences of climate change would not be confined to the rural and remote areas for long time now.

Problems of people involved in farming practices must be separately discussed in any discussion related to impacts of climate change. Increasing rate of occurrences of natural calamities, changing weather conditions and changes in cropping patterns has left the huge agricultural community (around 50% of total population) of India helpless (Rao et al., 2020). According to a study, majority of the farmers are unable to adapt to the changing conditions due to unavailability of information about adaptation strategies as well as lack of resources (Datta et al., 2022). The financial loss faced by the farming families usually leads to more members of the family getting involved in the farms, resulting in children's labor on the farms, or migration to other areas in search of employment (International Labour Organisation, 2022). This affects children's physical and mental well being and violates their rights to education and development. Although government of India has started initiatives regarding educating children about climate change and disaster management in schools, the real change will only happen when the parents become able to fight poverty and other issues arising due to climate change. Decreased income can lead to a decline in school enrollment and attendance as families may face difficulties in paying school fees, or children may need to contribute to the family's financial needs by engaging in work instead of attending school (Futureofchildren.org, 2016). Government and policy makers must work upon building community resilience and improving the adaptive capacity of the farmers. In doing so, special considerations must be given to children so that they do not only get prepared for the problems arising due to climate change in the present and in the future, but also be able to enjoy all rights a child should get, irrespective of their geography, race or gender.

Children Acting on the Climate Crisis

Every person on this planet is going to face the wrath of climate change sooner or later. But the youngest will certainly face its impact more than others due to the more number of years they are going to live on the earth. As experts have predicted, every coming year will be tougher for the environment than the previous year. So, without a pinch of doubt, the younger generation is going to face the heat more than the older generation and hence they must work as environmental stewards for their future (Han & Ahn, 2020). For the majority of young people living in a developing country like India, awareness, knowledge and action regarding climate change becomes even more important as they are exposed to existential threats. Even though, climate change is identified as a global crisis, efforts to control it is not up to par, and people are slowly realising it. As a result, various climate change movements are now happening around the world. The good news is, children are actively taking part in it.

In 2018, a Swedish teenager, Greta Thunberg started a protest against her government regarding meeting the carbon emissions target vowed in Paris Agreement. She decided to take the matters to social media where it went viral and people started sharing her story with different hash tags. The movement turned out to be a historical one as it gained millions of supporters and children from all around the world decided to support her (Han & Ahn, 2020). The movement was called 'Fridays for Future' and is now known as biggest movement for climate action. On 20 September 2019, more than four million people of all ages came together in their respective countries to protest against their governments for not taking necessary climate action (Alter et al., 2019). Soon, she became the face of climate action in the world, started speaking in various global summits and conferences regarding climate change and children from all over the world started environmental campaigns and protests in their countries, taking inspiration from Greta (Kraemer, 2021).

Many young climate activists are now taking lead role in the fight against climate change and Indian children are not far behind. Licypriya Kangujam from India, who was the youngest speaker at COP25 in Madrid, has been an active agent of climate action since she was 7 years old. Back in 2019, she spent weeks in front of the Indian parliament with a placard, to urge the government to pass the climate change law, in order to safeguard the environment and to lower the carbon emissions to such extent that it doesn't affect the generations to come (Krishna, 2019). Later on, she also spoke at COP26 and COP27, where she kept insisting the policy makers of the world to take serious action against climate change in order to save the future of the planet (Javaid, 2022). Various other teen climate activists are also emerging in India who are not only leading protests and campaigns but also setting examples on how to save the environment by showing sustainable ways of living to people. One

such teenager is Garvita Gulhati who founded a youth-led organisation called 'Why Waste' at the age of 15, whose goal is to create awareness and teach masses the sustainable ways to save water in their daily activities. She was awarded the title of 'Global Changemaker' in Zurich, Switzerland for her efforts to conserve water and save the environment (News18, 2021). Riddhima Pandey is another child climate activist, who sued the Indian government in 2017 over climate change inaction (The Guardian, 2017). There are many other young climate activists who are fighting against climate change in their own unique ways. However, the effectiveness of this activism among the children and youth will only be fruitful when they start getting the support of government and non governmental organisations so that the youth activists can become able to convert their moral legitimacy into the real power needed for bringing change (Han & Ahn, 2020). Even though many young heroes have emerged in this combat against climate change, the majority of youth population, specially in developing countries, is still unaware about the dangers of climate change and the ways to respond to it. This happens mainly because of the lack of discourse in the international community regarding how young people engage with climate change (Corner et al., 2015).

There are various rays of hope in today's time, which make the world believe that the young generation can do things which the older generation couldn't. Apart from spreading awareness on social media, taking part in climate conferences, organising campaigns for cleanliness, tree plantation, etc, and organising protests and movements, the young people around the world are also using the traditional legal method to make the governments and policymakers listen to their plight. In a few seminal legal cases, they are even getting historic victories. 16 children from 12 countries filed a petition in the UNCRC against 5 countries (Argentina, Brazil, France, Germany and Turkey) in 2019, claiming that the five nations in question, being historically significant contributors to emissions and having acknowledged the authority of the Committee to accept petitions, had failed in their obligation to implement necessary precautionary measures to safeguard and uphold the rights of children to life, health, and cultural well-being (UN Human Rights, 2021). The Child Rights Committee found that a State party may be deemed accountable for the adverse consequences arising from its carbon emissions, affecting the rights of children both within its borders and beyond. This was celebrated as a landmark ruling and a big success to young climate activists. In another landmark ruling in 2021, celebrated by legal experts and the adolescent plaintiffs involved in the case, the Australian federal court established that the then environment minister, Sussan Ley, carried a responsibility to exercise due diligence in safeguarding the younger generation from the perils of the climate crisis. This judgment is hailed as an unprecedented global precedent (Morton, 2021). Children around the world are now using courts as a new frontier to challenge their governments. They are demanding significant cut in carbon emissions and climate laws, which should be strictly followed so that the dangers regarding climate change can be minimised as much as possible in the years to come. Children are asserting constitutional arguments in for acknowledgment of their fundamental rights to live in a healthy environment. Court rulings upholding this right have been rendered in over 50 countries, holding governments accountable for a plenty of environmental transgressions, spanning from climate-risky investments in pension funds to normal non-compliance with commitments made in the Paris agreement (Parker, 2019). These cases are only going higher from here as various rulings in favor of the plaintiffs have opened a new channel of activism among the young people who are willing to fight for their rights and their future.

Prioritizing children: The way ahead

Considering the serious vulnerability of children to climate change and the amount of danger that climate change is going to pose in the future, there is a lot of work need to be done globally to make the younger generations able to tackle this problem. Including climate change education in their curriculums may be the first important step in this regard, but only awareness will not be enough for them when they are facing such a big challenge. As a first step to call on each country to consider children's vulnerability to the impacts of climate change a serious problem, and work together to protect and empower them in this fight. UNICEF published an article titled, 'Protect, Prepare, Prioritize,' focused on the ways to take effective action on the issue (UNICEF, 2022b). In the article, they call on each country to protect every child, prepare every child, and prioritize children in climate funding and resources. Children, being specially affected by the consequences of climate change, need special attention not only in the aftermath of a climate related disaster, but also during the preparation and resilience building phase. They shouldn't feel the lack of a platform to share their ideas or to work as a climate agent. Though they need to be attended carefully with all the necessary preparatory measures and they must

enjoy certain special rights as children, when it comes to climate change activism, they must be treated as a citizen and not a citizen-in-making in this fight against climate change, to provide them with confidence and skills that they will require to combat the mighty issue they are going to face all their life (Trott, 2017).

The global policymakers need to promote child-centered approach for adaptation and mitigation strategies around the world. The complete range of children's needs before, during, and after extreme climate events must be taken into account in policies and planning on climate change preparedness, response, and recovery. Schools must be secure so that learning can continue; community infrastructure must be safe; and relief and rehabilitation efforts must help in lowering both existing and potential risks. Parents of children in vulnerable communities and places should be provided with knowledge and resources needed to prevent different kinds of diseases that are frequently affecting their kids (Faustini, 2014). Children's nutrition should be taken care of according to the needs of their environment and efforts should be made for regular provision of clean water, lack of which is one of the root causes for their physical illnesses (Save the Children India, 2020). More investment is required to enhance the quality of the healthcare systems, water and sanitation services, and relevant health infrastructure in regions vulnerable to the impacts of climate change. Furthermore, technological advancements are necessary for disease surveillance, transportation systems, and emergency services (Lawler & Patel, 2012). Countries with high number of poor people also need poverty alleviation and skill development programmes so that people can become able to afford basic resources to adapt to the changing environment. India, with the largest quantity of impoverished children (United Nations Development Programme, 2022), need more employment generation schemes as well as poverty alleviation schemes like MNREGA and National Rural Livelihood Mission. Children who depend on their poor parents can only afford good nutrition and education if they don't have to fight poverty everyday. Apart from the physical health implications of climate change on children, there are mental health issues too that need addressal. PTSD related to climate related disasters, and stress regarding unforeseeable nature of the climate crisis can result in poor academic performances of children and affect their learning processes, which can hamper their overall development (Lai & Greca, 2020). Though consequences of climate change vary based on the geography, gender and other socio-economic factors, the mental stress regarding its repercussions is common (Gislason et al., 2021). Thus, parents and other adults around the children should be aware about the mental impacts of climate change on children and should try to address children's queries and confusions regarding the issue positively and in an age-appropriate manner. Children need to be involved in the environmental projects as they will benefit progressively when they have the belief that they can make a positive difference and are not helpless (Burke et al., 2018). Projects that are suitable for children, like arts projects on environment and sustainability, plantation drives in their schools and societies, cleanliness drives in their locality, etc., can help them overcome their stress regarding climate change (Nabhan et al. 2020). The most effective way to reduce the fear of the climate crisis and to address their anxiety regarding it, is engaging the children in the decision-making processes related to climate change (Gislason et al., 2021).

An important aspect in this battle with the climate crisis is preparing children to be the leaders of change. Young people worldwide have demonstrated their capability to combat the climate crisis in various ways. However, their ideas and proposals are often disregarded in the adult-dominated action on climate change. To enable them to effectively engage in their fight against the climate crisis, we must view children as capable citizens in their own right, rather than seeing them solely as passive recipients of assistance and services (Checkoway, 2010). By neglecting to recognize their potential as valuable assets capable of making significant contributions, society is deprived of highly valuable and innovative solutions to address climate change. This includes missing out on their creative ways to raise awareness about sustainable lifestyles, effectively advocate for climate-friendly laws, skillfully use technology and social media to highlight the issues faced by vulnerable communities, etc. Moreover, offering them opportunities to participate in meaningful decision-making processes fulfills their right to inclusion within society (Narksompong & Limjirakan, 2015). Even though the world is now seeing and appreciating numerous young climate activists who are doing everything in their capacity to confront the unprecedented threats of climate change, programmes are being created only with a focus on helping them, rather than actively involving them as participants (Selby & Kagawa, 2010). This often results in a gap between knowledge and action among the younger generation regarding climate crisis as of those children who understand climate change through various sources like school education, friends, newspaper, social media, etc.; most are not aware of any role that they can play in limiting the carbon emissions or in any other climate related action (Singh & Singh, 2014). Students often misunderstand the concepts of weather and climate, natural and

anthropogenic climate change, greenhouse effect and ozone layer depletion, etc. Addressing their common misunderstandings about climate change, emphasizing ways in which they can actively reduce their personal impact on the environment and teaching them practical methods to involve sustainability in their daily lives can foster their critical scientific agency. In addition to that, they should be allowed meaningful participation in school level and community level decision making from a young age to develop leadership skills in them. This will empower them with the ability to utilize scientific knowledge and social skills effectively to take positive actions at both individual and community levels (Mcneill & Vaughn, 2010). Climate change is certainly a complex issue to deal with, as its consequences are numerous and they also vary based on different factors. Apart from that, the climate crisis keeps on adding to the tally of risks associated with it. It brings new problems in the form of different diseases and disasters every year. Hence, collaborative risk assessments is the need of the hour. No one should be left behind, specially not the children, who are already facing physical and mental consequences of climate change and are going to face the various unpredictable and certainly exacerbated effects of it for a longer period of time than the adults (Lawler & Patel, 2012).

CONCLUSION

The 2023 IPCC report on climate change shows some disturbing findings that everyone should know about in order to understand how decades of ignorance to environment has consequences that are now unavoidable, and to take a lesson from it. Anthropogenic global warming of just 1.1°C since pre-industrial era has brought environmental problems beyond what we could have imagined (IPCC, 2023). Heat waves, erratic rainfall patterns, flooding, droughts, melting of glaciers, etc. are always happening at some place or the other on the planet, and as a result people are dying, migrating, falling sick, and facing various other issues. The science of climate change is now complemented with real experiences and observations. The predictions of experts a few decades ago were mostly ignored. But now, when their predictions are going right, and we are facing the climate crisis directly, ignoring the fact that climate change is going to cause even more troubles in the future and that we must take immediate steps to minimise and adapt to its impacts, could be life threatening. The world is now at the stage where net-zero emissions is the only solution. Otherwise, the youngest generation, who have none to minimal contribution in the global carbon emissions, will have to face the worst consequences of climate change.

Physical, mental, social and economic impacts of climate change seriously affect the children. Being more vulnerable to diseases, dependence on parents and other adults for their survival and growth, being sensitive to stressful news and information regarding climate change, having to spend their whole life in the climate change affected world, lack of knowledge about the role they can play in climate action and being ignored in the decision-making are some of the factors that make children more susceptible to climate change than adults. Climate change doesn't only impact them physically and mentally, but also tends to violate their rights as children. To safeguard their rights should be the primary responsibility of the global policy-makers. Child-centered approach to climate action must be adopted. Every child on the planet should get the rights to good health and well-being. Their education and development should not depend on the area they are living in or the economic conditions of their family. Their homes and schools should be safe from climate related disasters and no children should have to work in fields or as a laborer to make ends meet. The government and the adults around the children must ensure their protection against the various effects of climate change on them. In order to be prepared to face the climate crisis in the near future, children need effective protection from it in the present.

The impact of the climate crisis falls heavily on children, yet they have shown remarkable determination through their views, actions, and calls for change. Over time, the movements led by children and young people have been instrumental in making the climate emergency an important topic of discussion and bringing it on the political forefront. These young leaders are assertively asking for participation in the decision-making about climate change. They have realised that it's them who are going to bear the brunt of the emissions happening today. They have successfully stricken down a few environment-affecting practices around the world by suing their governments and industries for harming the environment through those practices. They are doing school strikes and protests. They are motivating other children to be the ambassadors of change, just like them. Their voices must be heard. Their participation must be ensured. Children shouldn't be treated as passive beneficiaries but active agents who have the ability to wake up the world to the reality that climate change is no more an issue to

be fought in the future, but it's something that is happening now. Greta Thunberg did just that when, while addressing the Members of Parliament in the U.K. Houses of Parliament, she said, "people always tell me and the other millions of school strikers that we should be proud of ourselves for what we have accomplished. But the only thing that we need to look at is the emission curve. And I'm sorry, but it's still rising. That curve is the only thing we should look at" (Thunberg, 2019).

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