



## Youth-inclusive climate change adaptation: bringing intersectionality to the forefront of sustainable development

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### Introduction

The upcoming 28th session of the Conference of the Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC) will aim to accelerate climate action during a critical moment in history in terms of limiting global warming to 1.5 degrees. Adolescents (10–19 years) and youth (15–24 years) in low- and middle-income countries (LMICs) are already experiencing the intensifying impacts of climate change, and these challenges are compounded by intersecting inequalities based on young people's identity, including gender, socioeconomic status, citizenship, and disability status (Devonald et al., 2020; Mitu et al., 2022).

Young people will not only be uniquely impacted by climate change, but will also inherit the responsibility of addressing global warming as it becomes ever more threatening to lives and livelihoods (Ryan et al., 2021). Yet the voices of marginalised adolescents and youth are often excluded from climate-focused policy-making, decision-making and programming, which means that the specific risks facing adolescents are not addressed (Back et al., 2009; Devonald et al., 2020; Rost et al., 2021).

In this policy brief, we review the current literature to explore the intersectional risks facing adolescents in LMICs due to climate change, underscoring the need to give greater attention to these compounding and intersecting challenges. We also discuss approaches to meaningfully including young people within climate policy and programming to ensure a youth-led, intersectional approach to climate action. This brief has been produced by the Gender and Adolescence: Global Evidence (GAGE) programme and the International Institute for Environment and Development (IIED) and includes case studies from each programme.

## Scope of the challenge: growing climate change inequalities

The Intergovernmental Panel on Climate Change (IPCC) 2023 report highlights that the adverse impacts of climate change will continue to intensify. Many countries, and particularly LMICs, are already experiencing these impacts. Disaster-prone countries such as Bangladesh have faced more frequent and severe hazards, including cyclones, landslides and flooding (Sammonds et al., 2021). Across many countries in Africa, there has been severe drought resulting in greater food insecurity, poverty and displacement (Finlay, 2021). The year 2023 has seen an intensification of these impacts, with deadly fires across Europe and devastating flooding in Libya (EU Science Hub, 2023; Wintour, 2023). Adolescents born in low-income countries will face the greatest increase in lifetime exposure to extreme events: a five-fold increase for those born in 2020, compared to those born in 1960 (Thiery et al., 2021).

Despite the significant impacts of climate change on LMICs, high carbon emissions have been disproportionately caused by richer countries and wealthier people. It has been estimated that from 1990 to 2015, the richest 10% of the world's population were responsible for 52% of global cumulative carbon emissions, while the poorest 50% were responsible for just 7% (Gore et al., 2020). An analysis of national fair shares of a safe global carbon budget found that most LMICs were within their boundary fair share of excess emissions (Hickel, 2020). Of the 23 high-income countries that are responsible for providing climate finance, only 3 have been paying their fair share. Some countries have contributed as little as 20% of what they are required to (Pettinotti et al., 2021).

This makes investing in climate adaptation an increasingly urgent global imperative. Although the Paris Agreement (2015) highlights that funding for adaptation and mitigation policies should have an equal balance, the United Nations Environment Programme's (UNEP) Adaptation Gap Report 2022 found that although adaptation finance is rising, only 34% of funding provided to developing countries is

going towards adaptation (UNEP, 2022). Analysis from IIED has found that only 3% of climate financing for the least developed countries (LDCs) is intended to primarily tackle gender inequalities (Soanes et al., 2021). The Dakar Declaration on Climate Change 2023 by the Ministers of the Least Developed Countries note with concern that the LDCs continue to experience unique challenges, complexities and delays in accessing climate finance that require further consideration, and call upon developed countries to urgently scale up climate finance to make up for the shortfall caused by failure to deliver US \$100 billion a year by 2020 and through 2025 (LDC Climate change, 2023).

## What do we know about the effects of the climate crises on people with intersecting disadvantages?

The people who are most marginalised within society, economically and socially, are more vulnerable to climate stresses. In this section, we outline some of the key risks young people face and the ways these are compounded due to characteristics such as gender, disability status and refugee status. This is summarised in Figure 1.

### Location

Climate risks are heterogeneous and present themselves differently across the world. As already mentioned, some countries (particularly LMICs) experience greater impacts from climate change. However, within countries, geographic location can also result in greater challenges for some adolescents. In the remote lowland regions of Ethiopia, for example, adolescents are at risk of being left behind due to a lack of infrastructure and services in the region, which means they are less able to adapt to climatic impacts (Presler-Marshall et al., 2022). Urban areas experience their own diverse impacts, such as high pollution levels, increased temperatures, and increases in climate-sensitive diseases (Kumar, 2021). This highlights the importance of focusing on locally led adaptation to ensure a context-specific approach.

### Children, adolescents and youth

Children and future generations will be uniquely impacted by climate change. A child born in 2020 will face twice the risk of experiencing wildfires, 2.6 times the risk of drought, 2.8 times the risk of river floods and 6.8 times the risk of heatwaves compared to a person born in 1960 (Ryan et al., 2021). Analysis of the 2004 Indian Ocean tsunami also found that the groups most at risk of the highest mortality rates were women, young people aged under 15 and people aged over 50 (Telford et al., 2006).

Although research often focuses on the short-term, direct impacts of climate change on children, it is vital to also look at the longer-term effects on young people's development



**Figure 1: Climate impacts on adolescents with intersecting disadvantages**



(Diwakar et al., 2019). Increased household poverty as a result of climate impacts can impede adolescents' future trajectories, while disruptions to daily life due to climate-related hazards can disrupt access to the services that are instrumental to young people's well-being, such as education (Diwakar et al., 2019). Young people are also highly vulnerable to health impacts such as malnutrition, exposure to pollution and to vector-borne disease, which can have significant consequences for their future development (Finlay, 2021). There is also growing evidence on the psychosocial impacts of climate change on children, adolescents and youth. In a global study, 59% of children and young people aged 16–25

years reported feeling extremely worried about climate change (Hickman et al., 2021).

It is important to prepare young people for climate-resilient futures. There are substantial demographic dividends in many LMICs, as children and young adults comprise a large share of the population (Yifu Lin, 2012). This presents challenges for future job markets, and these challenges are compounded by the impacts of climate change, which will reduce the feasibility of certain livelihoods (particularly in agriculture), and may narrow the job opportunities available to young people (Dubar et al., 2021).



## Gender

Climate change has differential impacts on men and women, and women often face specific challenges due to pre-existing power dynamics, gender norms and social inequity (United Nations Framework Convention on Climate Change, 2019). Challenges based on age and gender intersect, and result in girls facing unique risks. Some studies suggest that climate-related events will reduce girls' school attendance (by destroying schools or making them inaccessible), as well as contributing to increased household economic vulnerability (Devonald et al., 2020). Although these factors affect boys and girls, the literature suggests disproportionate impacts on girls, as families often prioritise boys' education. For example, in Botswana, of all the children taken out of school during times of drought, 70% were girls (Chigwanda, 2016).

Climate variability can also exacerbate gender-based violence. There is growing evidence to suggest that sexual and gender-based violence against women increases during disasters (UN Women, 2016). Climate variability can also increase sensitivity and exposure to gender-based violence (Kajumba et al., 2021), due to increased distances to collect water and other resources. This can put women and girls at greater risk of sexual and gender-based violence, increased household stress, and tensions at water sources during times of scarcity (Devonald et al., 2020).

There is limited research on the impact of climate change on child marriage – which tends to be regionally or disaster-

specific. One study in Indonesia found a positive association between climate-related natural hazards and the probability of girls entering child marriage (Kumala Dewi et al., 2019). Climate change is known to cause increased economic vulnerability in LMICs. Evidence from Bangladesh, for example, suggests that this increased economic vulnerability can influence family decisions to marry their daughters early (Alston et al., 2014; Barr, 2015). However, these impacts are not always unidirectional, and other studies have shown that increased economic vulnerability can also reduce child marriage in some contexts due to reduced ability to pay for the wedding (Corno, et al., 2020; Mazurana and Marshak, 2019).

There is less research on the gendered impacts of climate change on boys (Kato-Wallace et al., 2016). Yet boys and young men still face significant challenges. During times of drought, male farmers (in both high-income contexts such as Australia and low-income contexts such as India) have increased rates of suicide due to limited support networks (World Health Organization, 2014). During extreme weather events, gendered norms impact both male and female mortality. For men, challenges are heightened due to increased risk-taking, whereas for women, gender norms impact behaviours such as reduced mobility or being less equipped to withstand the impacts of such events (physically, and due to lack of skills – for example, the ability to swim) (World Health Organization, 2014).

## Refugee status

While there has been growing attention to climate change as a driver of displacement (International Organization for Migration (IOM), 2020; Kälin, 2008) there has been less attention to the vulnerability of refugees to the impacts of climate change after they have become displaced. Many refugees are living in temporary or inadequate shelters, which are not equipped to deal with climate-related hazards, leaving them more at risk of flooding and damage to their housing infrastructure (Devonald et al., 2022; Mitu et al., 2022b). This is exacerbated by economic challenges such as high levels of poverty and exclusion from job markets, which leave refugees more economically vulnerable and less able to adapt to these climate-related challenges (Mitu et al., 2022). Also, refugees already have high rates of trauma and mental health problems due to their experiences of displacement, which can leave them highly vulnerable to the psychosocial impacts of climate-related challenges (Giacco et al., 2018; Tay et al., 2019). However, more research is needed to explore the specific climate-related challenges facing refugees, and young refugees in particular.

## Disability status

Adolescents with disabilities are at greater risk during climate-related natural hazards. Globally, people with disabilities are between two and four times more likely to die during climate-related hazards, compared with those without disabilities (Izutsu, 2019; Stein and Stein, 2022). They are also rarely included in disaster risk planning. A global UN study in 126 countries found that only 17% of people with disabilities were aware of disaster management plans in their

communities, and 86% did not participate in community disaster management and risk reduction. Furthermore, although there is a limited evidence base, the literature is beginning to show that people with disabilities in LMICs tend to have higher rates of multidimensional poverty (often due to exclusion from education and employment), which can make them more vulnerable to the economic impacts of climate change (Groce et al., 2011). Again, there is a lack of evidence on the impact of climate change on young people with disabilities and the compounding impacts of other demographic characteristics such as gender, location and refugee status.

## Adolescent and youth climate activism and participation

Having outlined some of the challenges facing adolescents with intersecting vulnerabilities in LMICs in the context of the climate crisis, we now turn to discuss efforts to promote the inclusion of young people in climate activism and policy processes.

There has been increasing attention to the role of young people within climate change, particularly climate activism (See Box 1 for an overview of IIED's research on youth engagement in climate action). Many young climate activists have shown tremendous leadership globally and have been a driving force in bringing attention to the climate crisis, including the Fridays for Future youth movement, led by [then] 15-year-old Greta Thunberg. Although she has come to symbolise the youth climate movement, many young people from low-income and indigenous communities

### Box 1: Understanding barriers and enablers to youth engagement in climate action

IIED and World Vision Ireland conducted an evaluation of the SAUTI-Youth project which brings together World Vision Ireland, World Vision Tanzania, and Youth Work Ireland Galway, and aims to empower Tanzanian and Irish youth to monitor local government implementation of climate policies through the Citizen Voice and Action model. The study aimed to understand the barriers and enablers to youth engagement in climate action.

The barriers and enablers that emerged were unique to each country given the social and economic context. Intergenerational issues, gender identity and age all overlapped to affect how youth engage in climate action. Findings indicated that for youth to engage meaningfully in climate action the approaches must be participatory, youth led, with safe spaces where youth can build knowledge and understanding on climate change. Other external enablers included a supportive environment, incorporation of economic empowerment activities which provide opportunities for youth to build skills and generate income, especially in Tanzania. The youth noted that embedding climate resilience into livelihood activities, particularly those that are weather dependent can strengthen climate resilience and sustainability. The use of technology, especially social media platforms, was noted as an enabler, as were appearances on news channels and local radio, which created interest from policy makers.

The barriers were however largely external and were reflective of wider social norms. In Tanzania adolescent girls faced greater barriers to engagement in climate action due to expectations placed on them by their community to prioritise domestic and family responsibilities first. Girls are impacted especially in communities where women are not allowed to speak in public meetings. Youth with disabilities faced challenges due to their external environments often not being accessible. Some youth also noted challenges in understanding climate change information, indicating that often the climate policy landscape is complex and not youth friendly. They also felt that their voices were not taken seriously by policy makers or older people, particularly when they come from a minority identity.





Two boys play in Camp 2E, Camp Wash, Bangladesh © Nathalie Bertrams/GAGE 2023

have been driving climate and environmental activism, both in their communities and globally. For example, Vanessa Nakate, a Ugandan climate justice activist, founded the Rise Up Movement, which aims to amplify the voices of African climate activists (Riggio, 2020).

There have been some positive examples of young people making changes in their community in response to climate challenges. For example, in Southern Leyte, in the Philippines, students successfully campaigned to move their school from a location that was at high risk of landslides, to a safer area (Back et al., 2009). However, it has been highlighted that young people's voices are still not taken seriously, especially at the global level (Back et al., 2009). In a recent study by Plan International, 98% of adolescents who took part in the survey (conducted in 77 countries) were worried about climate change. Yet adolescents and young people receive very little information on climate policy processes and face many barriers to participating (Rost et al., 2021).

Gender also affects young people's ability to participate in climate policy processes. In the same Plan International study, more girls than boys felt unable to participate (Rost et al., 2021). In countries with conservative gender norms, this is likely to be more apparent. A study in Ethiopia found that girls were more likely to be excluded from community communication and decision-making platforms (Devonald et al., 2022a). Other groups are also excluded within climate action and policy. Youth from LDCs are largely under-represented in many key forums (Choden, 2021). Also, in a review of 5,536 abstracts, none mentioned children and

youth with disabilities as environmental activists or when discussing the impacts of environmental activism (Salvatore and Wolbring, 2021).

## Adolescent and youth inclusion within climate change policy processes

Recognising the role of adolescents and youth in environmental and climate action will be instrumental to ensuring that climate policies are targeted towards age-specific needs and the challenges future generations will face. However, as stated earlier, young people – and especially those from the most marginalised groups – are often overlooked in climate policy and programming. How can we ensure that the most marginalised young people are meaningfully engaged and included at the policy level?

### Participatory approaches

Adolescent and youth-led participatory approaches in climate research, policy and programming are one way to bring the voices of youth centre stage (see Box 2 for an example of GAGE's participatory research with adolescents). For example, including youth in budgeting processes can ensure distributive justice in climate funding and ensure that global and country funding mechanisms prioritise youth issues. In Ghana, youth participatory budgeting helped ensure that district assembly budgets addressed youth-specific needs. Although participants initially felt they lacked

## Box 2: Gender and Adolescence: Global Evidence (GAGE) participatory research on climate change

During the GAGE longitudinal research programme, participatory focus groups were conducted with adolescents in rural and urban regions of Ethiopia. The research tool used allowed adolescents to discuss key challenges they face in the community and key recommendations they would make to programming, policy-makers and governments.

During focus groups, participants watch an excerpt from the 'Madam President' video (produced by Search for Common Ground). This shows a female president taking over a fictional country and promising to do things differently from her male predecessors. Adolescents in the focus group are encouraged to discuss what changes they would make if they were president (Al Hweidi et al., 2022).

The adolescent participants were also asked to take photographs to convey key issues in their communities (see Figure 2). During these exercises, water scarcity (due to poor infrastructure and drought) emerged as a key priority. Adolescent boys and girls in East Hararghe (Oromia) and Zone 5 (Afar) mentioned this in every interview as a key change they would like to see if they were president. However, in Dire Dawa and South Gondar (Amhara), water scarcity was a less pressing issue. Instead, adolescents in those areas highlighted other challenges such as lack of job opportunities.

Although boys and girls alike mentioned water scarcity as a key issue, it impacts their lives in different ways. Girls experienced challenges due to spending more time collecting water, which impacts their school attendance. Boys (mainly in East Hararghe and Zone 5) were more concerned about the impacts on agriculture and migration in search of water while herding (which also has impacts on their school attendance). An older adolescent girl in East Hararghe explained: *'Water scarcity is the most critical problem in this area. There is no source of water nearby. If we fetch water in the morning, we have to go again in the afternoon and sometimes, we get home in the evening or at night.'*

The interviews highlighted some differences in terms of how adolescent participants engaged with the research tool. Adolescent boys and those from urban areas were more vocal about the main challenges they faced, and provided detailed explanations about changes they would make. An older adolescent boy from Zone 5, Afar explained his solutions to the consequences of drought: *'We want a huge water tanker to accumulate water and to use it during the drought season. If there is a tanker full of water, we will control and keep it and we will use it for ourselves and for our cattle when we lack rain.'*

Girls – and especially married girls from rural areas – were less confident in providing answers to these problems. Some groups of girls struggled to highlight the problems in their community and describe their possible solutions. They were also less aware of the political situation in the country. As an older married adolescent girl from Zone, Afar said: *'We know nothing about the political changes of the nation.'* This may be due to lower levels of education among girls. However, in-school adolescents girls appeared also to be less outspoken, which suggests that the reasons for this go beyond limited education levels. Instead, it is likely to be influenced by prevailing gender norms that encourage docility in girls and lack of involvement in decision-making platforms. It may also be driven by a lack of access to information, as girls have less access than boys to mobile phones and the internet.

knowledge in this area, the activity built their exposure, experiences and confidence in these types of processes (Bani-Afudego et al., 2011). Challenges often stem from young people internalising societal views that youth have limited rights to participate in adult-controlled spaces (Mgala and Shutt, 2011). In Sierra Leone, Mgala and Shutt (2011) found that youth involvement in student steering committees helped address this by fostering confidence among young girls and boys to improve governance of their school. At the national level, participatory processes (such as participatory video and dialogue forums) can support young people to build skills and develop voice and agency, and begin to demand accountability from government. The Center for Transparency and Accountability in Liberia's (CENTAL) Poverty and Corruption project aimed to empower young community representatives through awareness-raising and the use of participatory approaches (Miamen and Jaitner, 2011). This included poverty watch councils of marginalised social groups, which allowed youth (who are often excluded from such platforms) to engage in constructive dialogue with local government and highlight their concerns.

However, research on defining what meaningful engagement looks like in practice is essential for youth and decision-makers. This would allow for the development of better practices and consultative processes that would in turn lead to more effective policy uptake and implementation, informed by youth and children based on their context and experiences (Benkenstein et al., 2020).

### Digitalisation

Youth are increasingly becoming the most connected age group (71% of people aged 15–24 globally are online, compared to only 48% of the total population) (Keeley and Little, 2017). The Covid-19 pandemic has underscored the importance of digital technology for civic engagement, and virtual forms of participation are increasingly important for inclusivity (van Deursen, 2020). These skills and knowledge can be instrumental in terms of exploring opportunities, communicating risk, and innovating in the face of the climate crisis (Keeley and Little, 2017).

Climate change is a major challenge to agriculture due to land degradation, water scarcity and drought. Engaging



youth in these areas could help contribute to meaningful work and increase youth involvement in climate action, bringing innovative solutions to environmental conservation and climate-resilient farming techniques (Macqueen and Campbell, 2020). In particular, the digitalisation of agriculture could lead to increased productivity and build resilience to climate change (Tsan et al., 2019).

However, the potential of digital tools to respond to development and climate-related needs is currently constrained by structural factors such as connectivity, understanding the utility of such tools, and access to mobile phones (Keeley and Little, 2017). Even when network connectivity is available, internet access is often prohibitively expensive for most people, especially those in LMICs, due to regulatory inefficiencies and incentive structures. More than 60% of the world's population remains offline, and these people are disproportionately rural, low-income, elderly, illiterate and female. The inability to read and write is a critical barrier to overcome, and in terms of age and gender, the gap in the online and offline populations of women suggests material, social and cultural barriers (Sprague et al., 2014). The mode of engaging online is usually through English, which is a significant factor determining internet access. Further challenges stem from the use of technology to stifle citizen voices. Between January 2012 and August 2014, some 50 countries introduced or enacted laws designed to restrict the activity of civil society organisations or curtail funding for

their work (Tiersky and Renard, 2016). This will largely affect young people, who often rely on the internet for campaigns and innovations.

Apart from connectivity, access and restriction issues, systemic gender and racial discrimination worsen the digital divide worldwide. Systemic racial discrimination in housing, banking and other sectors of the economy, along with broadband industry practices, have been identified as barriers to internet use among marginalised groups. These are exacerbated by structural barriers, structural discrimination, and bias against people of certain races and ethnicities, and all these factors have a direct impact on the digital divide (Turner, 2019). Tackling this digital divide is vital to ensure that marginalised youth can participate meaningfully in climate action (Keeley and Little, 2017; Sprague et al., 2014).

### Building resilient youth institutions and strong youth leadership capabilities

The youth groups involved in climate and environmental justice campaigns have raised the need for support to understand national and global policies and frameworks to inform their advocacy agendas (Kajumba, 2020). Young people are recognised as a force for innovation and action, but they also need to be supported in order to develop their potential. Youth organisations must be resilient with strong leadership to respond to disruptive changes, supported



Adolescent girl studying from home using a solar-powered radio © Nahom Tesfaye/UNICEF Ethiopia, 2020



by a shift towards providing incentives to build long-term capabilities of young people and their institutions. Curriculum reform, from primary through to post-secondary studies, is necessary to mainstream climate change in education strategies and to encourage climate-conscious citizens. Education programmes should include leadership and skills development that focus on capacitating young people to engage effectively in different processes, to equip them for present and future realities. Wherever possible, young people should not just be participants in climate change programmes; they should also be organisers, researchers, writers, managers and coordinators (Benkenstein et al., 2020).

### Intersectional approaches

Within the Sustainable Development Goals (SDGs) – the global community's 17 priority areas for action to be achieved by 2030 – there is a lack of attention to the intersectional challenges facing young people. Analysis of the SDGs found that 8% of indicators across only six goals disaggregate by sex (or refer to gender as the primary objective) or disaggregate by age. Notably, SDG 13 on climate action is not included in these six goals, highlighting that it does not disaggregate by gender or age at all (Guglielmi and Jones, 2019). In addition to this, progress on SDG 13 on climate action is also lagging the most in terms of gender equality (Equal Measures 2030, 2020). Other groups such as refugees are also excluded; for example, of the 42 countries that submitted 2019 voluntary national reviews (in which countries assess and present their progress in achieving the SDGs), only 13 mentioned refugees as requiring specific attention (Grossman and Post, 2019).

There is also a lack of integration of different sectors within climate action, and this needs to be addressed. Research, policy and programming tend to focus either on climate change and environmental sustainability, or children and youth, and do not often incorporate both (Dupar et al., 2021). Some countries have started to take into account gender considerations. A review of the Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) of various countries, and their adaptation communication, shows an increase of gender consideration from 52% to 72% from 2020 to 2021 (UNEP, 2021). However, a 2019 synthesis report by the UNFCCC Secretariat found that the quality of gender considerations varied, with some at risk of being tokenistic or superficial and lacking comprehensive gender analysis. A global report by the Leonard Cheshire Research Centre also found that people with disabilities seem to be largely excluded from discussions about climate-related policy, and that there was a lack of an integrated approach, in which policies address both disability and climate change (Kett et al., 2018).

## Conclusions, and implications for policy and programming

Climate change is being experienced by communities across the world. In order to support those groups who are most impacted by it – and especially young people, who will be significantly impacted now and in the future – climate adaptation policies should take into account the multidimensional and compounding challenges facing young people in LMICs.

Vulnerability to climate change is shaped by social identity and marginalisation. Climate change increases exposure and risks for people who are already vulnerable or disadvantaged due to characteristics that include age, gender, socioeconomic status, location and disability status. Often these groups already have little or no access to influencing spaces where they could negotiate resources for adaptation. Based on the findings of this rapid evidence review we recommend that governments, policy and programme implementers, and researchers working on climate mitigation and adaptation should take the following priority actions:

- **Proactively engage youth in climate adaptation policy and programming including funding youth-led projects.** In particular, ensure that adolescents and young people who are most left behind are included in all aspects of climate policy development, programming, evaluation and learning. Adaptation measures should pay specific attention to the needs of younger adolescents (10–14 years) and older adolescents and youth (15–24 years).
- **Support youth climate leadership** to ensure the unique perspectives and experiences of children and young people are heard at the local, national and international level.
- **Include youth-led and participatory approaches in climate research** and challenge barriers towards participation, such as gender and cultural norms, and lack of confidence, skills or knowledge among adolescents and young people.
- **Address climate impacts through multistakeholder and multidimensional approaches.** Understanding who the stakeholders are in any given context, and their roles in addressing climate vulnerability, is key for local groups (including youth) that want to establish social networks and influence change processes. Policy and programming approaches should be coordinated across sectors, including line ministries for the environment, economy/finance, labour, education, children, adolescents and youth, and interventions should be adequately resourced and regularly assessed so as to adapt to rapidly evolving contexts and environmental challenges.

## References

- Al Heiwidi, S., Jones, N., Małachowska, A., Pincock, K., Presler-Marshall, E. and Youssef, S. (2022) *Participatory research with adolescents and youth in the Middle East: a toolkit to explore how social, economic, environmental and political crises shape young people's well-being*. London: Gender and Adolescence: Global Evidence ([www.gage.odi.org/publication/participatory-research-with-adolescents-and-youth-in-the-middle-east-a-toolkit-to-explore-how-social-economic-environmental-and-political-crises-shape-young-peoples-well-being](http://www.gage.odi.org/publication/participatory-research-with-adolescents-and-youth-in-the-middle-east-a-toolkit-to-explore-how-social-economic-environmental-and-political-crises-shape-young-peoples-well-being))
- Alston, M.; Whittenbury, K.; Haynes, A.; Godden, N. (2014). Are climate challenges reinforcing child and forced marriage and dowry as adaptation strategies in the context of Bangladesh. *Women's Studies International Forum* (47) 137–144.
- Back, E., Cameron, C. and Tanner, T. (2009) *Children and disaster risk reduction: taking stock and moving forward*. Research report. New York: UNICEF ([www.preventionweb.net/files/15093\\_12085ChildLedDRRTakingStock1.pdf](http://www.preventionweb.net/files/15093_12085ChildLedDRRTakingStock1.pdf))
- Bani-Afudego, C., Yorke, G.C. and Koudoh, A.A. (2011) 'Seeing from our perspectives: youth budget advocacy in Ghana' in J. Greenhalf and R. McGee (eds) *Young citizens: youth and participatory governance in Africa*. Participatory Learning and Action 64. p 143
- Benkenstein, A., Chevallier, R., Kosciulek, D., Lebea, D. and Worth, K. (2020) 'Youth climate advocacy'. Johannesburg: South African Institute of International Affairs ([https://saiia.org.za/research/youth-climate-advocacy/?\\_thumbnail\\_id=38951](https://saiia.org.za/research/youth-climate-advocacy/?_thumbnail_id=38951))
- Barr, H. (2015). Marry Before Your House is Swept Away: Child Marriage in Bangladesh. Human Rights Watch: Washington DC, USA.
- Chigwanda, E. (2016) 'A framework for building resilience to climate change through girls' education programming'. Washington DC: Center for Universal Education at Brookings
- Choden, T. (2021) 'Perspective of LDC youth: what COP26 outcomes will enhance global action on adaptation and resilience?'. Blog. IIED, 18 February ([www.iied.org/perspective-ldc-youth-what-cop26-outcomes-will-enhance-global-action-adaptation-resilience](http://www.iied.org/perspective-ldc-youth-what-cop26-outcomes-will-enhance-global-action-adaptation-resilience))
- Corno, L.; Hildebrandt, N.; Voena, A. (2020). Age of marriage, weather shocks, and the direction of marriage payments. *Econometrica*. 88, 879–915.
- Devonald, M., Jones, N. and Yadete, W. (2020) *'The first thing that I fear for my future is lack of rain and drought': climate change and its impacts on adolescent capabilities in low-and middle-income countries*. London: Gender and Adolescence: Global Evidence
- Devonald, M., Jones, N., Iyasu Gebru, A. and Yadete, W. (2022a) 'Rethinking climate change through a gender and adolescent lens in Ethiopia' *Climate and Development* 11, doi: 10.1080/17565529.2022.2032568
- Devonald, M., Jones, N. and Youssef, S. (2022b) "'We have no hope for anything": exploring interconnected economic, social and environmental risks to adolescents in Lebanon' *Sustainability* 14(4): 2001 (<https://doi.org/10.3390/su14042001>)
- Diwakar, V., Lovell, E., Opitz-Stapleton, S., Shepherd, A.W. and Twigg, J. (2019) *Child poverty, disasters and climate change: investigating relationships and implications over the life course of children*. London: ODI.
- Dupar, M., Lovell, E., Walmsley, O., Diwakar, V., Balcou, C., Tesfaye, B., ... and Krishnan, V. (2021) 'Resilient generation: supporting young people's prospects for decent work in the drylands of East and West Africa'. Issue brief. London: Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) and Gender and Adolescence: Global Evidence
- Equal Measures 2030 (2020) *Harnessing the power of data for gender equality. Introducing the 2019 EM2030 SDG Gender Index*. Woking, Surrey: Equal Measures 2030 (<https://reliefweb.int/report/world/harnessing-power-data-gender-equality-introducing-2019-em2030-sdg-gender-index>)
- EU Science Hub (2023) 'Wildfires in 2023: 41% of the burnt area in the EU within Natura 2000 protected sites'. European Commission website, 8 September ([https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/wildfires-2023-41-burnt-area-eu-within-natura-2000-protected-sites-2023-09-08\\_en](https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/wildfires-2023-41-burnt-area-eu-within-natura-2000-protected-sites-2023-09-08_en))
- Finlay, M. (2021) 'The climate crisis and devastating drought in eastern Africa'. *The Guardian* podcast, 16 December ([www.theguardian.com/science/audio/2021/dec/16/the-climate-crisis-and-devastating-drought-in-eastern-africa](http://www.theguardian.com/science/audio/2021/dec/16/the-climate-crisis-and-devastating-drought-in-eastern-africa))
- Giacco, D., Laxhman, N. and Priebe, S. (2018) 'Prevalence of and risk factors for mental disorders in refugees' *Seminars in Cell Developmental Biology* 77: 144–152
- Gore, T., Alestig, M. and Ratoliff, A. (2020) 'Confronting carbon inequality: putting climate justice at the heart of the COVID-19 recovery'. Oxford, UK: Oxfam GB (<https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621052/mb-confronting-carbon-inequality-210920-en.pdf>)
- Groce, N., Kumbhavi, G., Wirz, S., Lang, R., Trani, J.F. and Kett, M. (2011) *Poverty and disability: a critical review of the literature in low and middle-income countries*. Working Paper series 16. London: Leonard Cheshire Disability and Inclusive Development Centre
- Grossman, A. and Post, L. (2019) *Missing persons: refugees left out and left behind in the Sustainable Development Goals*. New York: International Rescue Committee ([www.rescue.org/sites/default/files/document/4121/missingpersonreport100319.pdf](http://www.rescue.org/sites/default/files/document/4121/missingpersonreport100319.pdf))
- Guglielmi, S. and Jones, N. (2019) *The invisibility of adolescents within the SDGs*. London: Gender and Adolescence: Global Evidence
- Hickel, J. (2020) 'Quantifying national responsibility for climate breakdown: an equality-based attribution approach for carbon dioxide emissions in excess of the planetary boundary' *The Lancet Planetary Health* 4(9): e399–e404



- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R.E., Mayall, E.E., ... and Van Susteren, L. (2021) 'Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey' *The Lancet Planetary Health* 5(12): 863–873
- International Organization for Migration (IOM) (2020) *World migration report 2020*. Geneva: International Organization for Migration
- Izutsu, T. (2019) *Disability-inclusive disaster risk reduction and humanitarian action: an urgent global imperative*. New York: United Nations Department of Economic and Social Affairs (<https://empowerproject.jp/wp-content/uploads/2020/12/2019-WCDRR-Report-and-Thereafter.pdf>)
- Kajumba, T. (2020) *Empowering women and youth for transformative climate and environment justice*. London: International Institute for Environment and Development ([www.iied.org/empowering-women-youth-for-transformative-climate-environment-justice](http://www.iied.org/empowering-women-youth-for-transformative-climate-environment-justice))
- Kajumba, T.C., Ssendi, L. and Anderson, S. (2021) *The effectiveness of health provision for women in the context of gender inequalities and climate change*. London: International Institute for Environment and Development ([www.climatelearningplatform.org/sites/default/files/resources/effectiveness\\_of\\_health\\_provision\\_for\\_women\\_and\\_girls\\_in\\_the\\_context\\_of\\_gender\\_inequalities\\_and\\_climate\\_change.pdf](http://www.climatelearningplatform.org/sites/default/files/resources/effectiveness_of_health_provision_for_women_and_girls_in_the_context_of_gender_inequalities_and_climate_change.pdf))
- Kälén, W. (2008) *Displacement caused by the effects of climate change: Who will be affected and what are the gaps in the normative framework for their protection*. Brookings Institution, 10 October ([www.brookings.edu/research/displacement-caused-by-the-effects-of-climate-change-who-will-be-affected-and-what-are-the-gaps-in-the-normative-framework-for-their-protection](http://www.brookings.edu/research/displacement-caused-by-the-effects-of-climate-change-who-will-be-affected-and-what-are-the-gaps-in-the-normative-framework-for-their-protection))
- Kato-Wallace, J., Van der Gaag, N., Barker, G., Santos, S., Doyle, K., ... and Belbase, L. (2016) *Men, masculinities & climate change: a discussion paper*. Washington DC: MenEngage Alliance
- Keeley, B. and Little, C. (2017) *The state of the world's children 2017: children in a digital world*. New York: UNICEF
- Kett, M., Cole, E., Twigg, J., Smith, F., Hug, S., Rahman, F., ... and Simard, M. (2018) *Disability and climate resilience research project*. London: Leonard Cheshire Research Centre ([https://assets.publishing.service.gov.uk/media/5af94ae4e5274a25e78bbe03/FINAL\\_Climate\\_research\\_report\\_100518.pdf](https://assets.publishing.service.gov.uk/media/5af94ae4e5274a25e78bbe03/FINAL_Climate_research_report_100518.pdf))
- Kumala Dewi, L.P.; Dartanto, T. (2019). Natural disasters and girls vulnerability: is child marriage a coping strategy of economic shocks in Indonesia? *Vulnerable Children and Youth Studies* (14) 24–35.
- Kumar, P. (2021) 'Climate change and cities: challenges ahead' *Frontiers in Sustainable Cities* 3: 645613 ([www.frontiersin.org/articles/10.3389/frsc.2021.645613/full](http://www.frontiersin.org/articles/10.3389/frsc.2021.645613/full))
- LDC Climate change (2023). The Dakar Declaration on Climate Change 2023 by the Ministers of the Least Developed Countries. ([https://www ldc-climate.org/wp-content/uploads/2023/10/2023-Ministerial-Declaration\\_Final-.pdf](https://www ldc-climate.org/wp-content/uploads/2023/10/2023-Ministerial-Declaration_Final-.pdf))
- Macqueen, D. and Campbell, J. (2020) *Prosperity in place: meaningful work for mobile youth that enhances forest landscapes*. London: Food and Agriculture Organization of the United Nations (FAO) and International Institute for Environment and Development.
- Mazurana, D and Marshak, A. (2019) Addressing Data Gaps on Child, Early and Forced Marriage in Humanitarian Settings. White Paper and Discussion Draft. Save the Children: London, UK.
- Mgala, S.M. and Shutt, C. (2011) 'Exploring expressions and forms of power in youth governance work' in *Young citizens: youth and participatory governance in Africa*. Participatory Learning and Action 63, p 175
- Miamen, A. and Jaitner, A. (2011) 'Our time to be heard: youth, poverty forums and participatory video' in J. Greenhalf and R. McGee (eds) *Young citizens: youth and participatory governance in Africa*. Participatory Learning and Action 64, pp 65–76
- Mitu, K., Jones, N., Vintges, J. and Devonald, M. (2022) 'Climate risks and truncated opportunities: how do environmental challenges intersect with economic and social disadvantages for Rohingya adolescents in Bangladesh?' *Sustainability* 14(8) (<https://doi.org/10.3390/su14084466>)
- Presler-Marshall, E., Yadete W., Jones, N. and Gebreyehu Y. (2022) 'Making the "unthinkable" thinkable: fostering sustainable development for youth in Ethiopia's Lowlands' *Sustainability* 14(7): 4239 (<https://doi.org/10.3390/su14074239>)
- Riggio, O. (2020) 'Autumn Peltier: "water warrior" for marginalized communities'. KCET, 16 September ([www.kcet.org/shows/tending-nature/autumn-peltier-water-warrior-for-marginalized-communities](http://www.kcet.org/shows/tending-nature/autumn-peltier-water-warrior-for-marginalized-communities))
- Rost, L., Cooke, J. and Fergus, I. (2021) *Reimagining climate education and youth leadership: survey report*. Woking, Surrey: Plan International (<https://plan-international.org/publications/reimagining-climate-education-and-youth-leadership#download-options>)
- Ryan E., Wakefield, J. and Luthen, S. (2021) *Born into the climate crisis: why we must act now to secure children's rights*. London: Save the Children (<https://reliefweb.int/report/world/born-climate-crisis-why-we-must-act-now-secure-children-s-rights>)
- Salvatore, C. and Wolbring, G. (2021) 'Children and youth environmental action: the case of children and youth with disabilities' *Sustainability* 13(17): 9950 (<https://doi.org/10.3390/su13179950>)
- Sammonds, P., Shamsudduha, M. and Ahmed, B. (2021) 'Climate change driven disaster risks in Bangladesh and its journey towards resilience' *Journal of the British Academy* 9(s8): 55–77
- Soanes, M., Shakya, C., Barrett, S., Steinbach, D., Nisi, N., Smith, B., ... and Murdoch, J. (2021) *Follow the money: tracking least developed countries' adaptation finance to the local level*. London: International Institute for Environment and Development ([www.iied.org/20326iied](http://www.iied.org/20326iied))

- Sprague, K., Grijpink, F., Manyika, J., Moodley, L., Chappuis, B., Pattabiraman, K. and Bughin, J. (2014) *Offline and falling behind: barriers to internet adoption*. McKinsey & Company ([www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/offline-and-falling-behind-barriers-to-internet-adoption](http://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/offline-and-falling-behind-barriers-to-internet-adoption))
- Stein, P.J. and Stein, M.A. (2022) 'Climate change and the right to health of people with disabilities' *The Lancet Global Health* 10: e24–e25 ([https://doi.org/10.1016/S2214-109X\(21\)00542-8](https://doi.org/10.1016/S2214-109X(21)00542-8))
- Tay, A.K., Rees, S., Miah, M.A., Khan, S., Badrudduza, M., Morgan, K., ... and Silove, D. (2019) 'Functional impairment as a proxy measure indicating high rates of trauma exposure, post-migration living difficulties, common mental disorders, and poor health amongst Rohingya refugees in Malaysia' *Translational Psychiatry* 9(1): 1–9
- Telford, J., Cosgrave, J. and Houghton, R. (2006) *Joint evaluation of the international response to the Indian Ocean tsunami: synthesis report*. London: ALNAP ([www.alnap.org/help-library/joint-evaluation-of-the-international-response-to-the-indian-ocean-tsunami-synthesis](http://www.alnap.org/help-library/joint-evaluation-of-the-international-response-to-the-indian-ocean-tsunami-synthesis))
- Thiery, W., Lange, S., Rogelj, J., Schleussner, C.F., Gudmundsson, L., Seneviratne, S.I., ... and Bresh, D.N. (2021) 'Intergenerational inequities in exposure to climate extremes' *Science* 374(6564): 158–160 (doi: 10.1126/science.abi733)
- Tiersky, A. and Renard, E. (2016) *Closing space: restrictions on civil society around the world and U.S. responses*. Washington DC: Congressional Research Service (<https://sgp.fas.org/crs/misc/R44458.pdf>)
- Tsan, M., Totapally, S., Hailu, M. and Addom, B.K. (2019) *The digitalisation of African agriculture report 2018–2019*. Wageningen, the Netherlands: CTA (<https://cgspace.cgiar.org/handle/10568/101498>)
- Turner, S.D. (2019) *Digital denied: the impact of systemic racial discrimination on home-internet adoption*. New York: Free Press ([www.freepress.net/sites/default/files/legacy-policy/digital\\_denied\\_free\\_press\\_report\\_december\\_2016.pdf](http://www.freepress.net/sites/default/files/legacy-policy/digital_denied_free_press_report_december_2016.pdf))
- United Nations Environment Programme (UNEP) (2022) *Too little, too slow: climate adaptation failure puts world at risk*. New York: United Nations Environment Programme ([https://wedocs.unep.org/bitstream/handle/20.500.11822/41079/AGR2022\\_ESEN.pdf?sequence=11](https://wedocs.unep.org/bitstream/handle/20.500.11822/41079/AGR2022_ESEN.pdf?sequence=11))
- United Nations Environment Programme (UNEP) (2021) *Adaption gap report. The gathering storm: adapting to climate change in a post-pandemic world*. Nairobi: United Nations Environment Programme ([www.unep.org/resources/adaptation-gap-report-2021](http://www.unep.org/resources/adaptation-gap-report-2021))
- United Nations Framework Convention on Climate Change (UNFCCC) (2019) *Differentiated impacts of climate change on women and men; the integration of gender considerations in climate policies, plans and actions; and progress in enhancing gender balance in national climate delegations*. Synthesis report by the secretariat. New York: UNFCCC ([https://unfccc.int/sites/default/files/resource/sbi2019\\_inf8.pdf](https://unfccc.int/sites/default/files/resource/sbi2019_inf8.pdf))
- UN Women (2016) *Time to act on gender, climate change and disaster risk reduction. An overview of progress in the Pacific region with evidence from the Republic of Marshall Islands, Vanuatu and Samoa*. New York: UN Women (<https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEAAsia/Docs/Publications/2016/11/unw-time-to-act-r2-s.pdf>)
- van Deursen, A.J. (2020) 'Digital inequality during a pandemic: quantitative study of differences in COVID-19-related internet uses and outcomes among the general population' *Journal of Medical Internet Research* 22: e20073
- Wintour, P. (2023) "'Disastrous beyond comprehension': 10,000 missing after Libya floods". *The Guardian*, 12 September ([www.theguardian.com/world/2023/sep/12/libya-floods-death-toll-dams-burst](http://www.theguardian.com/world/2023/sep/12/libya-floods-death-toll-dams-burst))
- World Health Organization (2014) *Gender, climate change and health*. Geneva: World Health Organization
- Yifu Lin, J. (2012) 'Youth bulge: a demographic dividend or a demographic bomb in developing countries?' Blog. World Bank, 5 January (<https://blogs.worldbank.org/developmenttalk/youth-bulge-a-demographic-dividend-or-a-demographic-bomb-in-developing-countries>)