Young People and Climate Change

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The authors are collaborators on a British Academy Youth Futures research project (2020–21) entitled 'Peak Youth, Climate Change and the Role of Young People in Seizing their Future'. The project is investigating the intersection of climate change with young people's livelihoods in the Karamoja and Jinja districts of Uganda, with a particular focus on working with young people who are marginalised and so harder to reach. Data sources: (1) Restless Development Living Innovation Research in 2018/19. Youth-led research funded by the Segal Family Foundation; (2) Early-stage consultation with young researchers from the 2020–21 British Academy Youth Futures funding stream. The authors are grateful for the constructive contributions of four anonymous peer reviewers.

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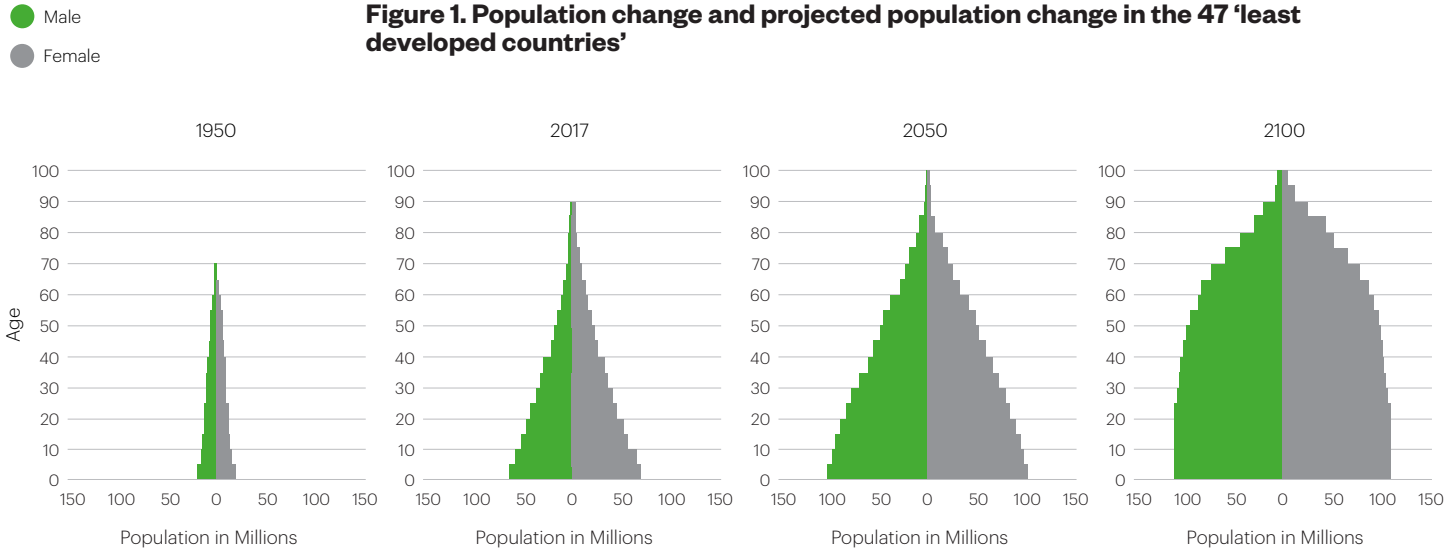
1.0 Introduction

Climate change is having widespread and, in some places, devastating impacts on people and their livelihoods, compromising human health, agriculture and food security, and provoking migration and conflict. These impacts are and will continue to be unevenly distributed, both geographically and between socio-economic groups. One of the great inequities of anthropogenically driven climate change is that the worst polluters are often geographically, socially and economically distant from those who are most vulnerable to the impacts of climate change. Another injustice is intergenerational, as today's young people and future generations are set to observe and experience the worsening impacts of climate change, exacerbated by a concentration of poverty and worklessness in the regions where vulnerability to climate change is particularly acute. This briefing focuses on young people living in countries variously categorised as 'developing', the 'Global South', or 'low- and middle-income'. According to the United Nations, of today's 1.8 billion young people aged 10–24 years, almost 90% live in developing countries. As life expectancies increase and the population pyramid's middle and upper sections fill out over time (Figure 1), their knowledge, experience, lifestyles, and any economic scarring from their younger days will be carried into the future, influencing them and future generations.

This briefing connects the structural disadvantage experienced by many young people in low- and middle-income countries, to the upheaval, uncertainty and stress caused by climate change. We start by addressing why it is important to focus on how an age-defined group, young people, experiences climate change. We then review some of the ways in which young people's lives worldwide are being impacted by climate change, focusing upon the themes of disrupted educations, starting families, finding work, migration, and emotional impacts. Lastly, we turn to the ways in which young people can influence responses to climate change. To facilitate the involvement of young people in framing and responding to climate change, we draw upon our study of marginalised young people from the remote Ugandan district of Karamoja, to give a voice to youth experiences, needs, and ideas for change. We hope to amplify and respond directly to calls to climate action from young people in the Global South.

Figure 1. Population change and projected population change in the 47 'least developed countries'



(Source: Amended from United Nations Population Division, 2017, in Barford & Coombe, 2019.)

2.0
Why young people and climate change?

Although young people are a highly diverse group, it makes sense to consider the age-specific impacts of climate change for several reasons. As with childhood, youth is not simply about change, and can be more constructively conceptualised as a time of *being* and *becoming*, as a *life stage* and a *life transition*.[1] In the early 1900s, youth began to be recognised as a distinctive life stage, yet even by 1990 the term was not fully integrated into life stage conceptualisations.[2] Of course the precise demarcations and definitions of youth vary between over time and space,[3] yet for many 'youth' spans the transition from parental home to separate households. While some young people have worked from an early age, for others youth is a time of finishing education and searching for work. Some young people live independently for much of their lives, having their own children when they are very young; others gain greater independence and take on more responsibilities during their youth. Given this diversity of circumstances and trajectories, it is also helpful to use age-based definitions of youth, though these also vary over time and space (e.g. 15–24, 15–29, 15–35).[4] The age of 35 has become an increasingly widespread end point for youth, and this is testament to how young lives are changing as the transitions described above happen later for many young people,[5] due to delays in finding work and housing, and financial independence.[6]

Climate change affects young people particularly for several reasons. Firstly, young people tend to start out with little capital, on relatively low incomes, with minimal work experience and few contacts.[7] This makes it difficult to find work and improve economic security especially given the lack of decent work available.[8] Economic insecurity leaves young people more exposed to both rapid onset climate hazards such as flooding and storms; and slower onset events including desertification, sea level rise, and land degradation.[9] Both rapid and slow onset events impact local economies, and young people *"are particularly sensitive to transformations in the economy as their activities, prospects, and ambitions are dislocated and redirected"*.[10] In fact, joining the labour

1 Uprichard (2008). 'Children as 'Being and Becomings': Children, Childhood and Temporality'. *Children and Society*, 22, 303-313.
2 Keniston (1970). 'Youth: A "new" stage of life'. *The American Scholar*, 631-654; Klein (1990). 'Adolescence, youth, and young adulthood: Rethinking current conceptualizations of life stage'. *Youth & society*, 21(4), 446-471.
3 Durham (2000). 'Youth and the social imagination in Africa: Introduction to parts 1 and 2'. *Anthropological quarterly*, 73(3), 113-120.
4 United Nations Youth. No date. *Definition of youth*. ; Ethiopia. (2012). *Youth Policy Factsheet: Ethiopia*.
5 Jeffrey and Dyson (2008) 'Introduction' in Jeffrey and Dyson (eds) *Telling Young Lives: Portraits in global youth*. (Philadelphia, PA : Temple University Press), pp. 1–15.
6 Stasik, Hänsch & Mains (2020). 'Temporalities of waiting in Africa'. *Critical African Studies*, 12(1), 1-9.
7 Barford, Coombe, and Proefke (2021). 'Against the odds: young people's high aspirations and societal contributions amid a decent work shortage'. *Geoforum*.; Barford, Coombe, and Proefke (2020). 'Youth experiences of the decent work deficit'. *Geography* 105(2), 60-68.
8 Fox, Mader, Sumberg, Flynn, and Oosterom (2020). Africa's 'youth employment' crisis is actually a 'missing jobs' crisis. *Brook Shearer Series, Number 9*.
9 UNFCCC. No date. *Slow onset events*. Accessed on 26.2.2021 from: https://unfccc.int/wim-excom/areas-of-work/slow-onset-events

market at a time of few opportunities can have knock-on effects throughout a career, and climate change related disruptions could lead to young people remaining out of education, employment, or training. Extended periods of apparent inactivity can have scarring effects which persist during adulthood.[11] If the impacts of climate change affect access to a job, or to a good job, life-long repercussions may be felt.

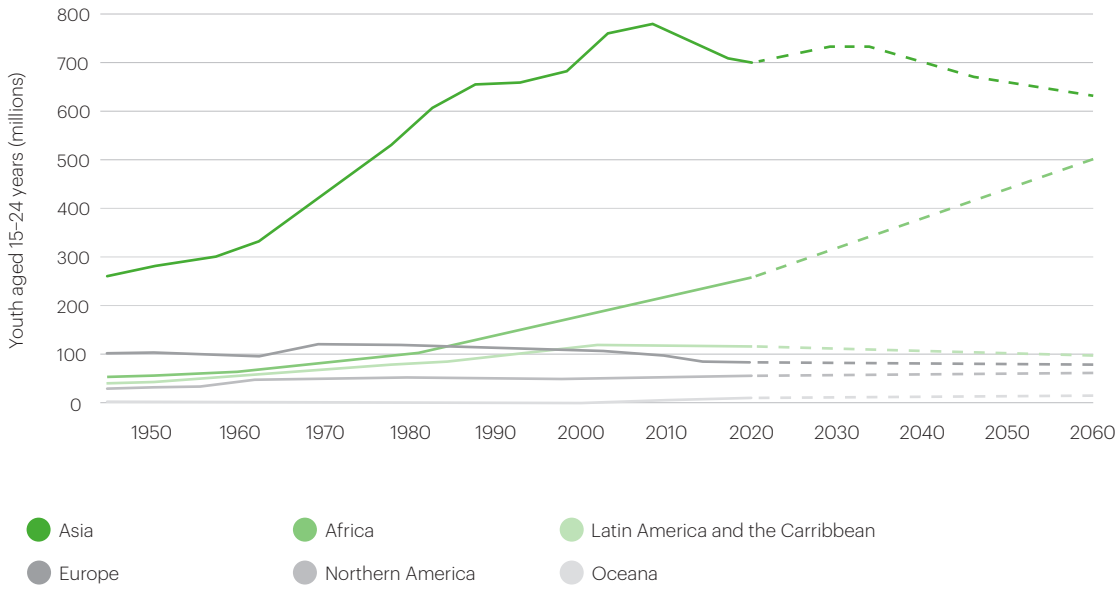
Secondly, young people should outlive today's older adults, thus surviving to observe the more extreme features of climate change. It is well documented that global temperatures and sea level are increasing: the years 2016 and 2020 are tied as the hottest years since records began in 1880; and 19 of the 20 hottest years ever recorded occurred since the year 2000.[12] Average global temperatures have already risen by 1 degree centigrade compared to pre-industrial levels and will very likely increase to 1.5 degrees by 2052, with warmer temperatures persisting for centuries if not millennia.[13] Looking ahead, youth populations are already high (Asia) or set to climb rapidly until at least 2060 (Africa) in the continents prone to the worst climate change induced food insecurity (Figure 2).[14]

Thirdly, although young people from developing countries play a minor role in causing anthropogenic climate change, they may hold some solutions to this problem. Young people are not (alone) responsible for solving the global issues we collectively face, yet they offer knowledge, ideas, dynamism, and political activism to contribute to solutions, and to hold those in formal positions of power to account.[15] As such, this brief calls for deep and equitable engagement with young people to learn from them and with them about how best to tackle this challenge. As the last IPCC report points out, there is consensus on the significance of engaging with indigenous, local and traditional knowledge as a vital resource in climate change adaptation.[16] We argue that young people's knowledge and life experience should be more widely recognised, and should inform our collective responses to climate change.

10 Durham (2000). 'Youth and the social imagination in Africa', p. 114.
11 O'Higgins (2017). *Rising to the Youth Employment Challenge: New evidence on key policy issues* (Geneva: International Labour Organisation). Available at https://www.ilo.org/global/publications/books/WCMS _556949/lang—en/index.htm; *OECD (2017), OECD Economic Surveys: Argentina* (2017: Multi-dimensional Economic Survey, OECD Publishing, Paris), https://doi.org/10.1787/eco_surveys-arg-2017-en.
12 NASA. (2021). *Global temperature*. Accessed on 26.2.2021 from: https://climate.nasa.gov/vital-signs/global-temperature
13 IPCC, (2018). *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis,E].
14 The Met Office and World Food Programme. (2020). *Food insecurity and climate change*. Accessed on 2.3.2021 from: https://www.metoffice.gov.uk/food-insecurity-index/; MFPRD (Ministry of Finance, Planning and Economic Development). (2018). *Uganda's Vulnerability Indices*. Kampala, Uganda.
15 Barford, Coombe, and Proefke, (2021). 'Against the odds'.
16 Adger, et al, 'Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA), pp. 755-791.

Young people are a diverse group – some considerably more vulnerable to the worst impacts of climate change than others. Like all other age bands, young people are exposed to the insecurities posed by climate change. Scientific evidence demonstrates that climate change exacerbates insecurities surrounding livelihoods, culture, migration and conflict, which themselves overlap and intersect.[17] The future usually feels somewhat uncertain for young people,[18] but arguably particularly so right now in the context of the COVID19 pandemic and facing the prospect of rapid environmental change.[19] A palpable sense of injustice, insecurity, and uncertainty surrounding climate change has led young people to be vocal on this issue. The 20th September 2019 saw the world's biggest climate-related protest to date, with millions demonstrating, led by young people and supported by older adults.[20] We now turn to some of the ways that climate change is already impacting young people's lives.

Figure 2. Youth population (15–24 years), by region, 1950–2060



(Source: Amended from United Nations Population Division, 2015, and published in Barford & Coombe, 2019.)

17 Adger, et al, 'Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA), pp. 755-791.

18 Esson, (2013). 'A body and a dream at a vital conjuncture: Ghanaian youth, uncertainty and the allure of football'. *Geoforum*, 47, 84-92; Madsen, & Carney, (2011). 'Education in an age of radical uncertainty: youth and schooling in urban Nepal'. *Globalisation, Societies and Education*, 9(1), 115-133.

19 Yaya, Otu, & Labonté, (2020). 'Globalisation in the time of COVID-19: repositioning Africa to meet the immediate and remote challenges'. *Globalization and Health*, 16(1), 1-7; Bezu, Demissie, Abebaw, Mungai, Samuel, Radeny, Huyer, Solomon. (2020). 'Climate change, agriculture and international migration nexus: African youth perspective'. *CCAFS Working Paper no. 324. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).*

20 Laville, and Watts, (2019). 'Across the globe, millions join biggest climate protest ever'. *The Guardian*. Published 21.9.2019. Accessed on 27.2.2021 from: https://www.theguardian.com/environment/2019/sep/21/across-the-globe-millions-join-biggest-climate-protest-ever.

3.0 Key climate change-related livelihood challenges for young people

3.1 Disrupted educations and early marriages

In 2016, it was estimated that 263 million children and young people were out of school globally: 61 million primary school aged, 60 million lower secondary school, and 142 million aged 15–17 year.[21] Conflict, poverty, and gender bias disrupt education for many, and as children grow up, they experience increasing pressures to work rather than study (ibid.). Climate change intersects with other pressures, further interrupting education. During times of drought in Northern Kenya, girls are the first to be removed from school, valued for their bride price, and married off early to generate an income for their family.[22] Where legislation to prevent early marriages is not enforced and social protection does not prevent the extremes of poverty, climate change-related pressures can exacerbate gendered inequalities.[23] These practices hold young women back, rendering them more vulnerable to future disruptions.[24]

While climate change induced droughts prime populations for food shortages, political and economic circumstances can conspire to exacerbate impacts. It is not drought alone that causes a famine[25] or its associated social impacts. Strengthening economic and social systems could make families and communities more resilient and thus avoid such early marriages and shortened educations. Further, when climate change displaces populations (as we discuss later), most displaced children and young people are unable to access education due to a combination of economic, systemic, social and legal barriers.[26] As climate-induced migration increases, it will likely cause greater numbers of young people and children to have their educations cut short.[27] As such, it is crucial that interventions are developed to counteract this likely trend.

21 UNESCO. (2016). *263 Million Children and Youth Are Out of School*. News report from 15.7.2016, accessed on 27.2.2021 from: http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-school.
22 Wadekar, (2020). 'Kenya Is Trying to End Child Marriage. But Climate Change Is Putting More Young Girls at Risk'. *Time*, August 12, 2020.
23 Ibid.
24 Fox, Senbet, & Simbanegavi, (2016). 'Youth employment in Sub-Saharan Africa: challenges, constraints and opportunities'. *Journal of African Economies*, 25(suppl_1), i3-i15.
25 Sen, (1983). Poverty and Famines: An Essay on Entitlement and Deprivation. (Oxford University Press. Oxford).
26 Nielsen, (2019). 'Climate migration and education: are we making our education systems future-proof?' *UKFIET*.
27 Ibid.

While education can fall victim to climate change, education is also part of the solution. Education is a tool and a resource for addressing climate change, and environmental education has been introduced in many countries offering an opportunity to increase understanding and to teach strategies for mitigation and adaptation. [28] To be successful in this arena, it is important to consider the content being taught. Localised indigenous knowledge is a key asset. Indigenous knowledge connects people to the land, offering vital understandings of subsistence activities – such as fishing and pastoralism – and critical understandings of how to access water.[29] Sharing and co-creating knowledge also contributes to community empowerment.[30] In our own research about young people and climate change in the Karamoja District of North Eastern Uganda, young people wanted to learn more about climate change. In particular, they wanted to learn about how to interpret and predict weather patterns, as well as learn indigenous approaches to adaptation. Drawing on knowledge about long term environmental change from diverse sources improves understandings and will offer more robust solutions.

3.2 Getting by

Youth is a time when many people start earning an income for the first time, though especially when times are hard some start earning a low-waged living as children,[31] and others do unpaid work for most of their lives. For most, this transition to work is not easy. It is widely acknowledged that globally there is insufficient decent work for all, including young people.[32] Furthermore, the global youth population continues to grow, so without large scale job creation this worklessness could worsen. Our earlier research details some obstacles faced by young people seeking work – which includes low availability of opportunities, limited assets, and lack of social networks.[33] Globally, more that 60% of workers, and roughly 80% of enterprises are informal, and therefore lack legal rights or social protection.[34] Climate-related changes present new obstacles for young people's livelihoods as work opportunities shift and shrink, migration disrupts support networks, and multiple climate shocks deplete meagre assets.[35]

28 Giannini, (2020). 'Opening remarks. Education, migration and climate change: how do we act now to deliver the best common future?' A UNICEF and UNESCO Roundtable. 15/5/2020. Chaired by Anja Nielsen, Senior Policy Adviser on Education and Youth at UNICEF UK; Lawler, & Patel, (2012). 'Exploring children's vulnerability to climate change and their role in advancing climate change adaptation in East Asia and the Pacific'. *Environmental Development*, 3, July 2012, 123-136. https://doi.org/10.1016/j.envdev.2012.04.001.

29 Twongyirwea, et al. (2019). 'Perceived effects of drought on household food security in South-western Uganda: Coping responses and determinants'. *Weather and Climate Extremes*, 24, 1-11.

30 Ibid; Haynes & Tanner, (2015) 'Empowering young people and strengthening resilience: youth-centred participatory video as a tool for climate change adaptation and disaster risk reduction', *Children's Geographies*, 13:3, 357-371, DOI: 10.1080/14733285.2013.848599.

31 Lancy, (2015). *The anthropology of childhood: cherubs, chattel, changelings*. (Cambridge University Press; Cambridge).

32 Fox, Mader, Sumberg, Flynn, and Oosterom, (2020). 'Africa's 'youth employment' crisis is actually a 'missing jobs' crisis'

33 Barford, Coombe, and Proefke, (2020). 'Youth experiences of the decent work deficit'.

34 ILO. No date. *Informal economy*. Website accessed on 27.2.2021 from: http://www.ilo.org/global/topics/employment-promotion/informal-economy/lang--en/index.htm

35 Olsson, L., M. et al. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA), pp. 793-832; Barford, and Cieslik,(2019). *Making a life: a youth employment agenda*. (Murray Edwards College, University of Cambridge) https://www.geog.cam.ac.uk/research/projects/decentwork/publications/gettingbyreport.pdf.

In general, young people have fewer assets and live on lower incomes that older adults; and amongst young people the worst off are most exposed to climate shocks (Figure 3). Those with fewer assets or less financial support from family are pushed to find work, without the time to wait for a higher-level opportunity to enter the labour market;[36] whereas waiting is a well-established strategy for some groups, such as well-educated unemployed young men.[37] In contrast, it is the people living on low incomes who cannot wait, amongst whom young people and women are overrepresented, who are worse positioned to prepare, recover and adapt to cope with droughts and erratic rainfall.[38] Climate change shocks, especially flooding, are known to increase poverty levels and substantially reduce food consumption.[39] The ability to meet daily expenditure requirements is a critical factor in preparation for and responses to erratic weather.[40] Other factors which influence capacity to respond are household size, support from relatives, and networks with NGOs.[41] Living in extreme poverty is a predictor of low resilience to climate change and climate shocks can lead to poverty; interventions must account for this.

In 2019, 59% of the workforce of low-income countries worked in agriculture, down from 69% two decades earlier.[42] Climate change is disrupting agricultural livelihoods, heightening food insecurity, and raising food prices.[43] Young people working in agriculture often cannot access land or land rights and are excluded from communal land governance; this is particularly acute for young women.[44] Other barriers to resilience and adaptation include limited access to financial services due to lack of collateral to secure loans as well as low levels of financial literacy, and insufficient access to markets.[45] Farming households headed by older people draw upon the greater wealth of knowledge and experience to respond to food insecurity that younger farmers are yet to gain. [46] The specifics of vulnerability to climate change vary with gender, tribe, income, education, location, wealth, and livelihood source, and being young exacerbates at least some elements of vulnerability. Stronger social protection would offer a safety net, and commitment to supporting young farmers and creating green jobs could contribute to climate change mitigation while reducing vulnerability.

36 O'Higgins (2017). 'Rising to the Youth Employment Challenge: New evidence on key policy issues'.

37 Jeffrey, (2010). *Timepass: youth, class, and the politics of waiting in India*. (California: Stanford University Press); Finn, Oldfield (2015). 'Straining: Young Men Working through Waithood in Freetown, Sierra Leone'. *Africa Spectrum*, 50(3):29-48. doi:10.1177/000203971505000302; Stasik, Hänsch, & Mains, (2020). 'Temporalities of waiting in Africa'. Critical African Studies, 12(1), 1-9. https://doi-org.ezp.lib.cam.ac.uk/10.1080/21681392.2020.1717361.

38 UNICEF. 2014. *Generation 2030: Africa*. UNICEF Division of Data, Research, and Policy. Adger, et al (2014) 'Human security'. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects* pp. 755-791.

39 Azzarri, & Signorelli, (2020). 'Climate and poverty in Africa South of the Sahara'. *World Development*, 125, 104691.

40 Oriangi,, et al (2020). 'Household resilience to climate change hazards in Uganda'. *International Journal of Climate Change Strategies and Management*, Vol. 12 No. 1, pp. 59-73.

41 Ibid.

42 World Bank. (2021). *Employment in agriculture*. Accessed on 2.3.2021 from: https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?contextual=employment-by-sector&locations=XM

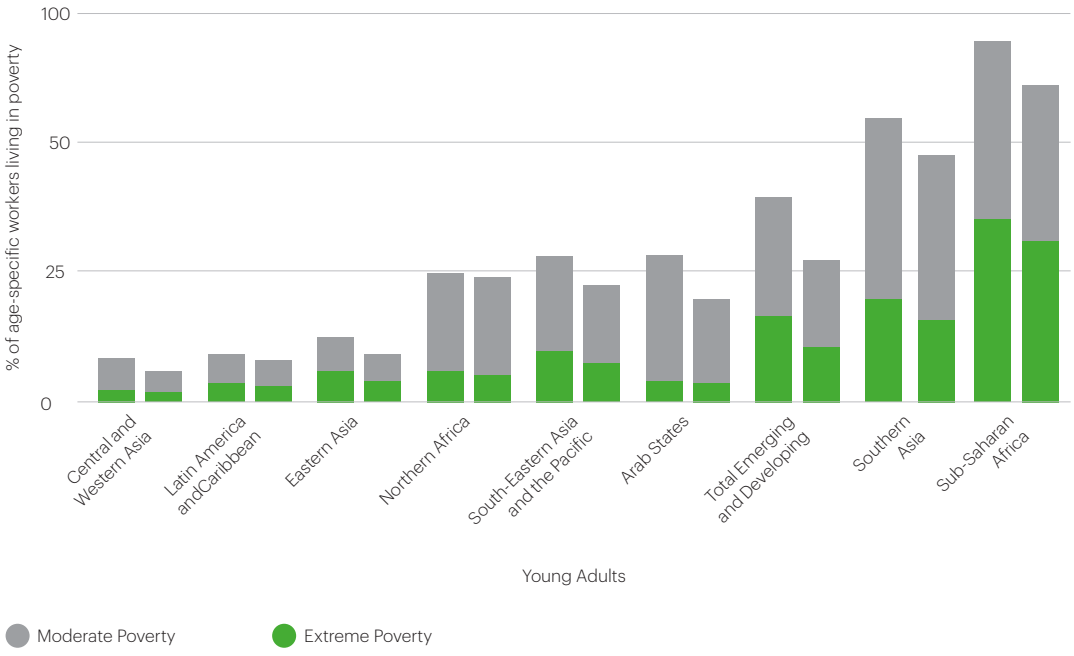
43 Olsson, et. Al (2014) 'Livelihoods and poverty'. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. pp. 793-832.

44 Yngstrom, (2002). 'Women, Wives and Land Rights in Africa: Situating Gender Beyond the Household in the Debate Over Land Policy and Changing Tenure Systems', *Oxford Development Studies*, 30:1, 21-40, DOI: 10.1080/13600810120011488 6; Lemke, & Claeys, (2020). 'Absent Voices: Women and Youth in Communal Land Governance. Reflections on Methods and Process from Exploratory Research in West and East Africa'. *Land*, 9(8), 266.

45 FAO (2014). 'Youth and agriculture: Key challenges and concrete solutions'. (Published by the Food and Agriculture Organization of the United Nations (FAO) in collaboration with the Technical Centre for Agricultural and Rural Cooperation (CTA) and the International Fund for Agricultural Development (IFAD)). Accessed from: http://www.fao.org/3/a-i3947e.pdf.

46 Twongyirwea, et al (2019). 'Perceived effects of drought on household food security in South-western Uganda: Coping responses and determinants'. *Weather and Climate Extremes*, 24, 1-11.

Figure 3. Extreme and moderate working poverty in 2017.



(Source: Amended from ILO, 2017, in Barford & Coombe, 2019)

3.3 Migration

Migration is one response to climate change, with slow onset events such as desertification, and fast onset events caused by extreme weather, either directly displacing people, or leading or forcing them to relocate in search of better circumstances. For fast onset events it is easier to identify the immediate trigger of migration, while slower onset events make it harder to pinpoint cause and effect;[47] it is these slower onset events that stand to cause the majority of climate-induced migration.[48] In both cases, the compulsion or choice to migrate is closely knitted to other aspects of young people's lives. Conflict and minimal employment opportunities are major push factors in causing displacement,[49] and climate change intersects with both, exacerbating strife and disrupting some livelihoods (see above). As such, the burden of climate-related disruptions varies with population, wealth, and vulnerability.[50] Migration offers an adaptation and survival strategy for individuals and families. While sometimes whole families move, other times families sponsor a young

47 Becker, (2020). *Climate change and migration. Education, migration and climate change: how do we act now to deliver the best common future?* A UNICEF and UNESCO Roundtable. 15/5/2020. Chaired by Anja Nielsen, Senior Policy Adviser on Education and Youth at UNICEF UK.

48 Bezu, et al (2020). 'Climate change, agriculture and international migration nexus: African youth perspective'. *CCAFS Working Paper no. 324. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security* (CCAFS).

49 UNHCR. (2021). *The Refugee Brief* – 26 February, 2021. Accessed on 28.2.2021 from: https://www.unhcr.org/refugeebrief/latest-issues.

50 Visser, Petersen, & Ligtvoet, (2014). 'On the relation between weather-related disaster impacts, vulnerability and climate change'. *Climatic Change*, 125(3), 461-477.

family member to travel abroad for work with everyone else remaining in situ.[51] In East Africa, climate change-related migration of young people is increasing in the context of longer, more frequent droughts.[52] The current generation of young East Africans are also more likely to migrate due to being well educated and less weighed down by family responsibilities compared to previous generations, as well as facing high levels of underemployment in their home countries.[53] While migration may bring benefits, for the migrant it is often accompanied by stigmatization and discrimination, sometimes fear of deportation,[54] in addition to the task of building a life in a new place.

From local community responses to government policies, resettlement is repeatedly and increasingly used and prescribed in response to climate change. By 2019, the Internal Displacement Monitoring Centre reported that 72% of all new displacements were weather-related,[55] and scientists are increasingly confident to associate extreme-weather events to climate change, especially extreme temperatures due to the availability of temperature records.[56] Some displacement is due to failing livelihood options, others are displaced by direct damage to settlements.[57] Migratory responses include seasonal adaptive migration (temporary) and planned relocation (permanent). Small island states are recognised as being particularly pressured by climate change. At the sharp end of this, three low-lying coastal villages in Fiji suffering from coastal erosion and flooding are preparing for planned permanent relocation.[58] Less discussed is *trapping*, where some are unable to leave and suffer from worsening conditions and fewer services; poorer people are less able to move either temporarily or permanently so are left behind to confront worsening local conditions and population decline.[59] Migration and trapping can both stall or halt young people's progression, as education is disrupted or terminated, assets may be stranded or lost in transit, services decline, and making a life in a new setting without work experience, qualifications or even the local language is a significant challenge.

51 Adepoju, (2000). 'Issues and Recent Trends in International Migration in Sub-Saharan Africa'. *International Social Science Journal*, 52(165), 383-394. https://doi-org.ezp.lib.cam.ac.uk/10.1111/1468-2451.00267.
52 Bezu et al (2020). 'Climate change, agriculture and international migration nexus: African youth perspective'.
53 Ibid.
54 Douglas, Hulshof, Motus, Naciri, and Nishimoto (2020). 'End stigma and discrimination against migrant workers and their children during COVID-19 pandemic'. *UNICEF article*. 5.6.2020. Accessed on 28.2.2021 from: https://www.unicef.org/eap/press-releases/end-stigma-and-discrimination-against-migrant-workers-and-their-children-during.
55 Adger, et al, (2014) 'Human security'; Cazabat, (2020) 'Internal displacement, climate change and migration. Education, migration and climate change: how do we act now to deliver the best common future?' A UNICEF and UNESCO Roundtable. 15/5/2020. Chaired by Anja Nielsen, Senior Policy Adviser on Education and Youth at UNICEF UK.
56 Stott, (2016). 'How climate change affects extreme weather events'. *Science*, 352(6293), 1517-1518. DOI: 10.1126/science.aaf7271.
57 Olsson, et al (2014) 'Livelihoods and poverty'. pp. 793-832.
58 McMichael, Katonivualiku, Powell, (2019). 'Planned relocation and everyday agency in low-lying coastal villages in Fiji'. *Geographical Journal*, 185: 325– 337. https://doi.org/10.1111/geoj.12312.
59 Black, Bennett, Thomas, et al. (2011). 'Migration as adaptation' *Nature* 478, 447–449. https://doi.org/10.1038/478477a.

3.4 Emotional impacts

A key message arising from our discussions with young people from Sub Saharan Africa is that climate change causes considerable emotional distress. There is increasing recognition of the psychological impacts of climate change, or 'eco-anxiety'.[60] This anxiety is rooted in the uncertainty, unpredictability, and uncontrollability of climate change.[61] To better understand this, young experts recommend considering responses to the enduring uncertainty, bleak predictions, and trauma from rapid onset events. It is also important to consider how hopes and aspirations for the present and future intersect with the uncertainties of climate change. The limited literature on this theme focuses predominantly on psychological and stress responses to climate change in higher income countries.[62] Such work needs to be extended to poorer countries, where often the magnitude of impact and degree of insecurity is greater. Engaging young people on this topic and focusing on constructive, collective actions, could address both climate change and the emotional anxiety which accompanies it. For young people "talking about climate change in a supportive and solutions-oriented way is vital".[63]

60 Ojala, (2020). 'Eco-anxiety', *RSA Journal*, vol. 164, no. 4 (5576), 2018, pp. 10–15. JSTOR, www.jstor.org/stable/26798430. Accessed 5 Oct 2020.

61 Panu, (2020). 'Anxiety and the Ecological Crisis: An Analysis of Eco-Anxiety and Climate Anxiety'. *Sustainability*, 12, 7836.

62 Mkono, (2020), "Eco-anxiety and the flight shaming movement: implications for tourism", *Journal of Tourism Futures*, ahead-of-print, https://doi.org/10.1108/JTF-10-2019-0093; Kelly, (2017) "Eco-Anxiety at University: Student Experiences and Academic Perspectives on Cultivating Healthy Emotional Responses to the *Climate Crisis*".*Independent Study Project (ISP) Collection*. 2642.

63 Ojala, (2020). 'Eco-anxiety.' p. 14.

4.0 Young people's input

Policy approaches to youth engagement in Sub Saharan Africa have been characterised as narratives of marginalisation or mobilisation.[64] In the former, young people are excluded from policy dialogues, leading to disempowerment. The mobilisation narrative refers to the value of young people's voices, their political engagement, and their empowerment.[65] We view mobilisation as an effective response to marginalisation, offering a chance for young people to be heard and empowered. However, it should not spill over into holding young people responsible for solving the problems of climate change. In the following section, we share our own case study of young people in Karamoja, Uganda, which shows their vulnerability to climate change and how youth responses are often hampered by insufficient knowledge and material resources. Much of this response centres around the constraints and problem solving in their own lives, rather than the public demonstrations shared by the media.[66] Nevertheless, mobilisation of young people is a key part of recent youth activism on climate, including climate litigation as a response to institutional failures aimed at forcing stronger action on emissions reduction.[67] Legal cases linking insufficient action on climate change to compromised constitutional and human rights have been filed by or for young people against the governments of Uganda, Pakistan, India, and Colombia, as well as Canada, Norway, New Zealand and the USA – similar future cases are expected.[68]

Recent research has found that young Africans tend to be well-informed about climate change compared to older adults, however they often distrust the political institutions tasked with responding to climate change.[69] Nevertheless, these young people were ready to mobilise, taking the view that 'ordinary citizens' are well placed to bring about change (*ibid.*). The UN Youth Strategy acknowledges the importance of young people's involvement in responding to climate change – through partnerships and their capacity to respond – thus seeking to amplify and reinforce the voices of young people, for example at major UN Summits.[70] However, the structure and culture of global youth conferences limits youth engagement, often leaving young people unable to participate meaningfully. The usual deference to 'high-level' speakers and limited opportunities for young people to discuss issues led one young participant to comment "it is a bunch of officials telling us we matter but not letting us speak".[71] Instead, youth engagement must be done intentionally and thoroughly, which requires time, resources, and a certain amount of restructuring.

64 Anyidoho, et al (2012) 'Young People and Policy Narratives in sub-Saharan Africa', FAC *Working Paper 32*, Brighton: Future Agricultures Consortium. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/2257.
65 Ibid; Restless Development. (2020). *We are Restless: young leaders for a just and sustainable world*.
66 Turns (2019). 'Meet generation Greta: young climate activists around the world'. *The Guardian*. 28.6.2019. Accessed on 28.2.2021 from: https://www.theguardian.com/environment/2019/jun/28/generation-greta-young-climate-activists-around-world.
67 Bouwer and Setzer (2020). 'Climate litigation as climate activism: what works?' *The British Academy COP26 Briefings*.
68 Hewitt and Gubbay (2020). 'The Latest Court Challenge in a Steady Line of Leading Youth-Led Climate Case's. *Lexology*, Published on 22.4.2020. Accessed on 28.2.2021 from: https://www.hausfeld.com/print/1449.
69 McMahon and Kalantaryan, (2020). 'Youth Perspectives in Africa: how young people view politics, society and the environment', EUR 30367 EN, Publications Office of the European Union, Luxembourg, doi:10.2760/619998, JRC121686.
70 UN Youth Strategy. (2018). *Youth 2030: The UN Youth Strategy*.
71 Kwon (2019). 'The politics of global youth participation'. *Journal of Youth Studies*, 22(7), 926-940, p. 932.

An example of our own endeavours to meaningfully engage young people is the 2019 international youth-centred workshop on youth employment, 'Getting By', run by the University of Cambridge and Restless Development.[72] Twelve young people from Africa, the Caribbean, Middle East and Asia were recruited from 1000 applicants, with only eight finally participating mainly due to UK visa restrictions: those with fewer qualifications, without formal work, or without international experience were not granted visas. Funding for travel, visas, accommodation, and subsistence was raised in grants in the UK, enabling one young woman to make a multi-day journey from Palestine to participate. An orientation day before the workshop prepared young participants for their central roles of chairing sessions and presenting. The young participants were often purposefully invited to ask the first question following a presentation, which greatly increased their subsequent involvement in discussions. Following the workshop, we invited feedback on our approach. One young woman commented how the workshop contrasted with other high-level meetings where she had felt merely 'decorative'. To move beyond the superficial, young people's input needs to be designed in, listened to, and followed up. Much is known about what constitutes authentic participation, and of the many pitfalls in attempting to achieve this.[73] Now we move to an overview of the findings from our own youth-engaged research, thus bringing young people's experiences and ideas for responding to climate change into the discussion.

4.1 Insights from young people in Karamoja District, Uganda

In the usually arid pastoralist district of Karamoja in NE Uganda, climate change has had a particularly severe impact, creating difficulties for young people in meeting even their basic needs. Key changes over the past 35 years include changed seasonality, increased temperatures, and increased rainfall yet with greater variability.[74] Pastoralism in this region is rooted in the longer-term low rainfall and a regular pattern of crop failure.[75] The people living in Karamoja district are vulnerable to both endogenous and exogenous shocks including combinations of the immediate and aftereffects of drought, locusts, floods, epidemics and other social, political and economic shocks.[76] The region's vulnerability to disaster accumulates risk from several hazards,[77] compounding exposure to disaster risk and heightening the complexity of managing it. Even the least vulnerable parts of the region experience strong winds, bush fires, cattle theft and drought.

72 Barford and Coombe (2019). *Getting by*; Barford and Cieslik, (2019). *Making a life*.

73 Arnstein, (1969) 'A Ladder Of Citizen Participation', *Journal of the American Institute of Planners*, 35:4, 216-224, DOI: 10.1080/01944366908977225 https://www-tandfonline-com.ezp.lib.cam.ac.uk/doi/pdf/10.1080/01944366908977225?needAccess=true; Cooke and Kothari (2001). *Participation: the new tyranny?* (Zed Books, London).

74 WFP (World Food Programme) & C-ADAPT. (2017). *The Impacts of Climate Change on Food Security and Livelihoods in Karamoja*. Accessed on 2.3.2021 from: https://www.wfp.org/publications/2017-impacts-climate-change-food-security-and-livelihoods-karamoja.

75 Niamir-Fuller (2001) 'Conflict Management and Mobility among Pastoralists in Karamoja, Uganda'. In: Jeffery R., Vira B. (eds) *Conflict and Cooperation in Participatory Natural Resource Management*. (Global Issues Series. Palgrave Macmillan, London). https://doi.org/10.1057/9780230596610_2.

76 MFPRD (Ministry of Finance, Planning and Economic Development). (2018). *Uganda's Vulnerability Indices*. Kampala, Uganda.

77 UNDP (2014). *Karamoja: Hazard, Risk and Vulnerability profile*. Kampala, Uganda; UNESCO. 2016. '263 Million Children and Youth Are Out of School'. News report from 15.7.2016, accessed on 27.2.2021 from: http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-school.

Young people interviewed by Restless Development described rainfall becoming less predictable, and had observed droughts accompanied by high temperatures, as well as flooding. Research participants also reported seasonal differences becoming less clear than they once were, with both drought and excessive rainfall occurring within the same growing season. The most immediate challenges have been shortages of food and water. Food is increasingly scarce, which drives up prices. Water sources often dry up completely in dry seasons, which are becoming more prolonged. Water difficulties are not confined to times of drought, as excess water also poses a challenge. Intense rain damages, or renders inaccessible, water sources such as rivers, streams, and ponds. Beyond their basic needs, young people in Karamoja explained how climate change has led to population displacement, resulting in communities becoming dispersed, to the detriment of community cooperation.

Climate change has diverse impacts on young people's livelihood strategies. Those working on farms identify how inconsistent rain – both too much and too little within the same season - impacts agricultural productivity. Young people further down the agricultural supply chain with off-farm activities are also struggling. As lower volumes of agricultural produce led to higher costs of inputs thus decreasing profits, changing weather conditions affect both product quality and storage options. Even young people working in non-agricultural sectors describe how weather events impact upon product quality, for example rain damage compromising the quality of charcoal that young people hope to sell. Customer demand for other services and products may also decrease. For instance, a common off-farm income activity for young people in rural areas in Uganda is *boda boda* (motorcycle) transport. During the rainy season and times of flooding, customer demand for *boda boda* rides decreases due to rain destroying unpaved roads.

This insecurity has led to a variety of responses amongst young people – with some changing their income-generating activities while others adapt to manage water resources in new ways. Climate change has pushed some young people out of agricultural production, and towards apparently less risk-exposed activities in agricultural processing and retail, and to roles unrelated to agriculture. For those young people who remain focussed on agricultural production, most adaptation involves some form of water resource management, such as installing drip irrigation systems, investing in water harvesting, and intentionally maintaining existing water sources. Many young people explained that they can no longer rely on one water source. Instead, several mentioned that they need access to several water sources to spread the risk. Thus, if one water source fails or is insufficient, then they can shift to another. Identifying, maintaining, and using multiple water sources at the same time is a crucial adaptation. Aside from securing water, young people describe planting trees as windbreaks and starting home gardens to cushion against food shortages. However, some were stalled in their adaptations, especially regarding water access, due to a lack of money to install water systems.

The experiences and responses of young people in Karamoja illustrate how climate change disproportionately affects vulnerable young people. Thus, our recommendations in the next section refer to reducing the insecurity which predisposes young people in lower income settings to climate change vulnerabilities, as well as supporting them in adjusting and adapting.

5.0 Conclusion and recommendations

Youth, a time of *being* and *becoming*,[78] is a time of vulnerability and uncertainty, exacerbated by the much wider uncertainties imposed by human-induced climate change. Anthropogenically driven climate change disproportionately affect younger, poorer nations where youth livelihoods are already generally precarious. Nevertheless, young people are already guiding, informing, and contributing to climate change mitigation, adaptation and resilience. It is crucial that we pay attention to the intersection of today's young people with climate change, now and as they age and witness the worsening effects of climate change. To support some of the worst affected of today's young people in low- and middle-income countries, we draw upon the insights of young people with whom we have worked and the wider literature, to make the following recommendations:

1. **Ensure youth input**
   To support future planning, further research with and by young people is needed to improve understanding. Young people should be meaningfully involved in defining the problem, seeking solutions, implementing change, and ensuring accountability. The youth climate movement, NGOs, governments, and research-focused institutions (academic and non-academic) all have a role to play in equitable youth engagement.

2. **Enable youth livelihoods**
   The structural deficit of decent work must be addressed by governments and the private sector, ideally through creating new green jobs. Migrants need additional state support to complete education and secure work. The worst affected young people should be prioritised for resources, training, and jobs by the state, private and NGO sectors.

3. **Protect young people**
   Greater social and legal protection (either through new laws or enforcing existing laws) are needed. Public and union demands for this state intervention, will support young people to meet their basic needs, protect their human rights, and thus enhance resilience now and in the future.

4. **Share and extend knowledge**
   Young people need better information, including indigenous knowledge, on weather patterns and adaptation. This can be included within school curricula and be offered to people who have already left school. The practical and emotional impacts of climate change on young people in lower income settings require further academic research to support practical interventions to build resilience.

78 Uprichard (2008). 'Children as 'Being and Becomings'.

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