

## **The Debate: Is Global Development Adapting to Climate Change?**

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### **Abstract**

The debate about the relationship between adaptation to climate change and development has been ongoing for over two decades. Adaptation is about risk reduction, the pursuit of opportunity and rethinking investments, planning and behaviour, which is also in many ways what development is about. Yet a distinction between the two is necessary for the existing funding architecture, and to ensure that adaptation is more than just business as usual. We summarise a debate held at the Adaptation Futures 2018 conference to explore whether global development is adapting to climate change, with one side arguing for, the other arguing against. The outcome suggests no obvious winner, in part because there is no clear distinction between what qualifies as exclusively adaptation or development, since some dimensions of each put them in opposition to one another, while other dimensions are mutually reinforcing. Yet, to say that adaptation will take place through development does not sufficiently underscore the need for development to be rethought. Adaptation will require transformative development – that is, development that takes everyone into account and places issues of equity and justice in the centre and adheres to principles of sustainability.

## **1. Adaptation and development**

Adaptation to climate change is the process of changing to avoid being adversely impacted by climate change. Adaptation is about risk reduction, the pursuit of opportunity and rethinking investments, planning and behaviour. Given the wide-ranging factors contributing to the capacity to adapt, many proposed adaptation measures seek, in theory, to do 'better development', by going beyond development as usual to address the causes of vulnerability to climate change (Nightingale et al, 2019; Nagoda, 2015; Tanner and Horn-Phathanothai, 2014). Yet actions, policies and programmes implemented in the name of development can also be major drivers of vulnerability to climate change (Scoville-Simonds et al, 2020; Eriksen et al, 2018; Work et al, 2018; Colette, 2016). The debate about the relationship between adaptation and development has been ongoing for over two decades (Carr, 2019; Webber, 2016; Nagoda, 2015; Ribot, 2009; Schipper, 2007; Kates, 2000), with questions emerging such as whether adaptation is a 'type of development' or something else (Cannon and Müller-Mahn, 2010). More than an academic exercise for the definition-obsessed, comparing the two concepts has also become increasingly important from policy and practice perspectives.

There is wide agreement that the main regions in need of greater adaptation lie in the developing world, particularly the least developed countries (Shackleton et al, 2015). Fundamentally, therefore, we need to ask whether global development is actually reducing vulnerability, adapting to climate change and considering new risks and opportunities. Or, is the global development process failing to adapt, or even itself exacerbating vulnerability and risks? Are development plans, policies and processes taking climate change into account? A session at the Adaptation Futures 2018 conference in Cape Town debated these questions in a motion: 'Global development is not adapting to climate change'. This Viewpoint summarises the arguments and discusses the implications for both adaptation and development.

## 2. Position 1: Global development is *not* adapting to climate change

Climate change and development are inseparable – development is both a driver and a victim of climate change. The first reason why global development is not adapting to climate change relates to the existing *development deficit*, the distance still left to ensure equality and wellbeing for all. This contributes to the existence of an *adaptation deficit*, or the failure of adaptation strategies, policies and measures to manage existing climate variability, without considering the additional impacts of climate change (Burton, 2004). This adaptation deficit is borne out by the large and growing burden of disaster losses compromising economic growth in many parts of the world (CRED/UNISDR, 2018). Both of these pre-existing deficits frustrate adaptation to future climate change. For many of the world's population, the capacity to adapt remains constrained by widespread inequality and shortfalls in wellbeing, prosperity, employment, health, education, justice, governance and ecological health (Matin et al, 2018). Evidence of successful mainstreaming of adaptation into policy remains limited and questioned (Scoville-Simonds et al, 2020), with weak linkages to other policy objectives such as poverty reduction, biodiversity or urban and rural development (Casado-Asensio et al, 2016). In an example from coastal Kenya, Ojwang et al. (2017) show that shortcomings in institutions and capacity constrained local adaptation, which illustrates how a lacking development context creates a mismatch with adaptation efforts.

A second contention is that the dominant capitalist economic system, rather than promoting adaptation, is perpetuating structural vulnerability and risk (Mosberg et al, 2017). Patterns of development are expanding human activity and settlement into places exposed to climate hazards, such as low-lying coastal areas and floodplains (IPCC, 2012), while inequality in wealth is growing globally (Alvaredo et al, 2018). Some root the historical inequality driving unequal adaptive capacity in historic patterns of colonialism and hegemony (Weiss et al, 2018; Mikulewicz, 2019). Unlike

debates around greenhouse gas emissions linked to differential rates of industrialisation, adaptation discourse rarely engages with the historical roots of vulnerability nor the politics around it (Mikulewicz, 2019; Eriksen and Lind, 2009). Climate justice arguments are based around liability for climate change hazards, but there has been far less attention to the historical manifestation of vulnerability as it advanced with the evolution of both climate change and uneven development (Bankoff, 2018). Vulnerability of families of ex-miners in South Africa for example, is linked to loss of breadwinners to silicosis lung disease. This vulnerability is driven by the expansion of South Africa gold and uranium mining activity to supply the western markets as part of the industrialization drive of the 20<sup>th</sup> century (Hecht, 2018).

Third, if we don't consider the development context, the risk is that all adaptation efforts will be ineffective at best, but maladaptive at worst. Maladaptation is when efforts to adapt result in increased vulnerability (Juhola et al, 2016) or – as interpreted by Barnett and O'Neill (2010) – contribute to significantly enhanced greenhouse gases. Evidence of maladaptation is growing (Eriksen et al, 2018), such as through climate change initiatives in Cambodia that have been shown to replicate the same development projects that are contributing to climate change and vulnerability (Work et al, 2018) or in Ghana where adaptation projects favoured more powerful groups pushing tourism but in turn threatened the physical displacement of a local community (Owusu-Daaku, 2018). Maladaptation also results from the poor connections between the policy, science and practice (projects) on adaptation (Swart et al, 2014). For example, development practitioners and national governments are looking to achieve successful adaptation in the context of the Paris Agreement's adaptation goal, while adaptation scientists still debate the idea, suggesting that this might even be a 'flawed concept' (Dilling et al, 2019). As such, development that focuses on climate change without considering the drivers of vulnerability and addressing the development deficit, risks undermining opportunities for adaptation in the future and increasing vulnerability to climate change (Casado-Asensio et al, 2016). Even autonomous adaptation can lead to maladaptation: communities left in

poverty are forced to adjust to survive as they face risk, which can compromise their capacities for achieving both adaptation and development objectives (Antwi-Agyei et al, 2018). Maladaptation is a risk when both adaptation and development objectives are short-sighted, for example when people farming in marginal lands develop irrigation so they can continue to farm, only until there is too much competition for water – or pressure from climate change – for farming to be possible at all, as laid out in discussions on limits to adaptation (Barnett et al, 2015).

Fourth, adaptation policy issues remain dangerously far from their development policy contexts. In addition to the Paris Agreement under the UN Framework Convention on Climate Change (UNFCCC), 2015 saw the international community ratify Agenda 2030, or the Sustainable Development Goals, and the Sendai Framework on Disaster Risk Reduction. While discussions have begun on how best to ensure complementarity between the three global development agendas, these conversations remain in their infancy, and each policy process maintains an interest in continuing along largely separate trajectories, collaborating only when obvious synergies are presented (Peters et al, 2016; UNFCCC, 2017). It is nevertheless encouraging that noticeable changes are emerging: the Intergovernmental Panel on Climate Change (IPCC) special report on climate extremes (SREX) engaged the disaster management community (IPCC, 2012), while the special report on 1.5C global warming was particularly anchored on the Paris Agreement and Sustainable Development Goals, as well as incorporating the Sendai Framework (IPCC, 2018).

Fifth, institutional contexts remain a barrier for the mutual pursuit of adaptation and development. Thinking specifically about climate finance under the UNFCCC regime, there are long-standing political concerns about the 'new and additional' nature of climate finance, to assure that support is not simply re-labelled development assistance, but rather newly mobilised funds specifically for climate purposes (Donner et al, 2016). Indeed, a recent review of 5,200 adaptation projects in the OECD Creditor Reporting System database found that 66% of projects had no discernible adaptation

component, justifying concerns about re-labelling (Weikmans et al., 2017). In view of this issue, discussions are ongoing in several climate funds around practices of 'incremental costing', whereby only the mitigation and adaptation components of projects are supported, and other streams of finance must be leveraged for development activities (Sidner and Amerasinghe 2019; Rive, 2017). This approach emerges from an important policy issue, but in practice necessitates drawing a line in the sand between adaptation and development, posing significant barriers for actors who seek to pursue those goals in tandem – development actors who indeed hope to adapt to climate change (Lahsen et al, 2010; Khan and Roberts, 2003).

Finally, another indication that global development is not adapting to climate change is that global development continues to be market driven, enveloped by inequalities at all levels, as well as fierce competition for resources and uncertainties leading to insecurities that give rise to a strong inclination for material accumulation and protectionist tendencies (Godfrey-Wood and Naess, 2016). Global development maintains the same norm where prosperity is achieved in some regions while others are held back through various market mechanisms and control, which deny them technological advancement and trade in value-added products, leaving these regions to be perpetual suppliers of cheap raw materials, a dumping ground for low-quality goods and services, and with weakened governance systems (Brondizio et al, 2016). The dominance of low-developed regions by the developed world extends to knowledge, culture, values and consumptions patterns. Hence if building adaptive capacity is closely linked to level of development, the odds are stacked against effective adaptation in those vulnerable regions since reducing vulnerability under this development pathway calls for, to some degree, eroding the power and resource base of prospering regions (Gough, 2017). This is difficult in the light of systems characterised by uncertainty, high consumerism and the drive for wealth accumulation as a hope for security. The high uncertainty in a market economy negates prospects for genuine adaptation of vulnerable people in exposed regions. Rather, where regions of prosperity reach out to areas populated by vulnerable people, it is usually with the

underlying aim to open new markets and access more resources under the pretext of assisting with adaptation (Weiss et al, 2018).

It can be concluded that major transformations are required for global development to adapt to climate change, and currently, dominant growth paradigms and hegemonic constructions prevent these from taking place (Godfrey-Wood and Naess, 2016).

### **3. Position 2: Global development *is* adapting to climate change**

More optimistic viewpoints in the debate on climate adaptation in the context of global development were underscored by the acknowledgement that adaptation is best considered as a process, as illustrated by the idea of adaptation pathways (Fazey et al, 2016; Werners et al, 2015). As such, there is much to be optimistic about in terms of the progress made in adapting global development to climate change.

First, adaptation has become an important and indeed urgent global development policy norm. This was not the case even a decade ago, when there was still the lingering belief that mitigating greenhouse gases emissions would largely be sufficient, limiting adaptation to certain sensitive places. As a legacy of early climate policy priorities adaptation was still seen as a potential distraction from the important business of mitigation. Growing understanding of the severity and speed of climate change impacts has now placed adaptation (and its limits) firmly on the agenda (IPCC, 2018; Dow et al, 2013). The international impetus for adaptation is further strengthened by the reports and action tracks of the Global Commission on Adaptation (GCA, 2019), and by the recently-launched the World Climate Adaptation Programme.

Second, adaptation is enshrined in global policy agreements upon which governments are basing their national development planning. That adaptation is essential was cemented by the 185 nations



who have so far ratified the Paris Climate Agreement of 2015, through their commitment to enhance adaptive capacity, strengthen resilience and reduce vulnerability with a view to contributing to sustainable development. In response, adaptation is explicitly addressed in the laws and policies of at least 170 countries, mostly through development plans or sectoral policies (CCLW, 2019). The vast majority of developing countries include adaptation components in the pledges laid out in their Nationally Determined Contributions (NDCs) and have agreed to develop National Adaptation Plans (NAPs), supported by a variety of international capacity and knowledge strengthening processes. Similarly, Sustainable Development Goal 13 on climate action explicitly links the achievement of sustainable development to strengthening the resilience and adaptive capacity to climate-related hazards and disasters in all countries (Target 13.1).

Thirdly, national adaptation planning has been complemented 'from the ground-up' by the huge growth of action and understanding in community-based adaptation (CBA). CBA can be described as *adaptation by development actors* (Reid and Schipper, 2014). CBA builds on the experiences of community-driven and participatory development approaches, and is based on the premise that 'local communities have the skills, experience, local knowledge and networks to undertake locally appropriate activities' (Dodman and Mitlin; 2013: 640). Action and learning are networked globally through initiatives such as annual CBA conferences (now in its 14<sup>th</sup> iteration) and WeAdapt.org platform, and initiatives are increasingly being scaled up (Schipper et al, 2014).

Fourthly, adaptation activities have matured particularly in the development co-operation sphere. In the early 2000s, development agencies were waking up to the importance of adaptation for poverty reduction but few agencies had programmes or projects that mentioned 'climate', let alone 'adaptation' (Abeygunawardena et al, 2003). Nowadays, alongside explicit pilot programmes, adaptation has been mainstreamed into the work of most bilateral and multilateral development agencies, development NGOs and local grassroots groups. This reflects a recognition that climate

change and especially adaptation are part and parcel of the business of supporting human development. The 2015 World Bank report 'Shock Waves' underscored that the 'impacts of climate change on poverty by 2030 mostly depend on development policy choices' (Hallegatte et al, 2015:179), handing the responsibility for action firmly to development actors.

Fifthly, while there are still significant short-comings in the finance available for adaptation (UNEP, 2018), significant flows are emerging. International public finance for climate change is growing. The Green Climate Fund, the largest multilateral climate fund under the UNFCCC, currently has a portfolio of over 100 projects and a total value of \$19bn since 2015. Of these projects, one quarter are specifically dedicated to adaptation, while another 35% include both mitigation and adaptation components (GCF, 2020). It can be difficult in practice to disentangle this sort of adaptation finance from more traditional development assistance. Indeed, a recent assessment of 7,080 climate actions identified across 161 NDCs found that every proposed action was related to at least one SDG, often several SDGs, and that all 17 SDGs were linked in some way to climate adaptation as we approach the project level (Dzebo et al, 2017). There are significant opportunities to further integrate adaptation finance and development assistance, though challenges undoubtedly remain (Betzold and Weiler, 2018; Persson and Klein, 2009).

Beyond the availability of, and access to, international climate finance there has also been notable growth in domestic public finances for climate change and private sector spending. India, Bangladesh, Indonesia, Kenya and Brazil provide examples of countries to have established national funds to boost their adaptation efforts (Prasad and Sud, 2019), while national disaster risk finance to anticipate disasters and promote resilience is rising (Tanner and Wilkinson, 2016). Businesses too are allocating greater resources towards climate risk management, particularly through market systems approaches and greater understanding of risks across value chains (Biagini and Miller, 2013; Surminski and Tanner, 2016; Kuhl, 2018).

Finally, science, knowledge and learning on adaptation has taken off around the world in recent years. Adaptation is now an established field of study and practice, in both developed and developing countries. This is reflected in the growing coverage and literature in the Assessment reports of the IPCC, with two recent IPCC Special Reports on extreme events and the 1.5C threshold having explicit adaptation remits. Government interest in adaptation policy is also growing, reflected in the widespread preparation of National Adaptation Plans under the UNFCCC. Academic and professional interest in adaptation is illustrated by the international conferences such as the CBA series and the Adaptation Futures series from which this paper emerged. There are a growing number of institutions that work on adaptation, ranging from small grassroots development organisations to the high-level Global Commission on Adaptation, whose mission links the development and adaptation challenges.

#### **4. The Outcome: A blurry line**

Although the debate participants voted that global development is not adapting to climate change<sup>1</sup>, the discussion suggests that reality is more likely to be a combination of both perspectives. This is partly because there is not a clear distinction between what qualifies as exclusively adaptation or development, since some dimensions of each put them in opposition to one another, while other dimensions are mutually reinforcing. One participant suggested that the global development industry had been quick to pick up and adapt to new job opportunities on climate change. The issue of 'cannibalisation' of funding – ie. using funding earmarked for adaptation for 'regular' development instead – is relevant, and this leads to questions about prioritisation and chronology of action: does addressing adaptation needs now risk undermining future development opportunities?

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<sup>1</sup> There were approximately 60 participants, including adaptation researchers, students and practitioners from around the world. Voting results: For: 22; Against 13; the rest abstained.

To say that adaptation will take place through development does not sufficiently underscore the need for development to be rethought. A recent UK parliament committee examining how UK aid money was being used for combating climate change suggested that the UK's aid spending 'would be more laudable if it were not for the magnitude of the climate change crisis' (IDC, 2019: 65), yet it also acknowledged evidence of continued support for fossil fuels as part of the official development assistance. Adaptation will require transformative development – that is, development that takes everyone into account and places issues of equity and justice in the centre and is founded on sustainability as the ultimate goal. If development is also supporting processes that exacerbate greenhouse gas emissions or create conditions of inequity, this will negate any positive effects of adaptation. Equity and justice are driving forces of vulnerability, with lingering roots in the unequal power dynamics of the past, which remain healthy and damaging in the present.

## References

- Abeygunawardena, P., Vyas, Y., Knill, P., Foy, T., Harrold, M., Steele, P., Tanner, T., Hirsch, D., Oosterman, M., Rooimans, J. and Debois, M., (2003). *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation*. World Bank, Washington, D.C.
- Antwi-Agyei, P. Dougill, A.J., Stringer, L.C., Codjoe, S.N.A. (2018). Adaptation opportunities and maladaptive outcomes in climate vulnerability hotspots of northern Ghana. *Climate Risk Management*. 19: 83-93
- Alvaredo, F., Chancel, L., Piketty, T., Saez, E. and Zucman, G. (Eds.) (2018) *World inequality report 2018*. Belknap Press.
- Bankoff, G. (2018) 'Remaking the world in our own image: vulnerability, resilience and adaptation as historical discourses' *Disasters*, 43(2): 221-239.
- Barnett, J., & O'Neill, S. (2010). Maladaptation. *Global environmental change*, 2(20), 211-213.
- Barnett, J. L. S. Evans, C. Gross, A.S. Kiem, R.T. Kingsford, J.P. Palutikof, C. M. Pickering, S.G. Smithers (2015) 'From barriers to limits to climate change adaptation: path dependency and the speed of change' *Ecology and Society* 20(3): 5.
- Bennett, N.J., Blythe, J., Tyler, S. and Ban, N.C. (2016) Communities and change in the anthropocene: understanding social-ecological vulnerability and planning adaptations to multiple interacting exposures. *Regional Environmental Change*. 16(4): 907–926

Betzold, C., F. Weilder (2018) *Development Aid and Adaptation to Climate Change in Developing Countries*, Palgrave Macmillan: London.

Biagini, B., & Miller, A. (2013). Engaging the private sector in adaptation to climate change in developing countries: importance, status, and challenges. *Climate and Development*, 5(3), 242-252.

Brondizio, E.S., L. O'Brien, X. Bai, F. Bierman, W. Steffen, F. Berkhout, C. Cudennec, M.C. Lemos, A. Wolfe, Jose Palma-Oliveira, Chen-Tung Arthur Chen. (2016). Re-conceptualizing the Anthropocene: A call for collaboration. *Global Environmental Change*. 39:318-327. <https://doi.org/10.1016/j.gloenvcha.2016.02.006>

Burton, I. (2004). 'Climate change and the Adaptation Deficit' Adaptation and Impacts Research Group, Meteorological Service of Canada, Occasional Paper No. 1.

Cannon, T., D. Müller-Mahn (2010) 'Vulnerability, resilience and development discourses in context of climate change' *Natural Hazards* 55(3): 621-635.

Carr, E.R. (2019) 'Properties and projects: Reconciling resilience and transformation for adaptation and development' *World Development* 122: 70–84.

Casado-Asensio, L., Drutschinin, A., Corfee-Morlot, J. and Campillo, G. (2016) Mainstreaming Adaptation in National Development Planning. OECD Development Co-Operation Working Paper 29.

CCLW (2019) *Climate Change Laws of the World database*. London: Grantham Research Institute on Climate Change and the environment. Available at: <http://www.lse.ac.uk/GranthamInstitute/legislation>

Colette, A.L. (2016) The politics of framing risk: Minding the vulnerability gap in climate change research, *World Development Perspectives*, 1: 43-48  
<http://dx.doi.org/10.1016/j.wdp.2016.06.003>

CRED/UNISDR (2018). *Economic Losses, Poverty & Disasters: 1998-2017*. United Nations Office for Disaster Risk Reduction, Geneva.

Dilling, L., Prakash, A., Zommers, Z. et al. (2019) Is adaptation success a flawed concept?. *Nature Climate Change* 9: 572–574 (2019). <https://doi.org/10.1038/s41558-019-0539-0>

Dodman, D., & Mitlin, D. (2013). Challenges for community-based adaptation: discovering the potential for transformation. *Journal of International Development*, 25(5), 640-659.

Donner, S. D., Kandlikar, M., & Webber, S. (2016). Measuring and tracking the flow of climate change adaptation aid to the developing world. *Environmental Research Letters*, 11(5), 054006.

Dow, K., Berkhout, F., Preston, B. L., Klein, R. J. T., Midgley, G., & Shaw, M. R. (2013). Limits to adaptation. *Nature Climate Change*, 3(4), 305.

Dzebo, A., Brandi, C., Janetschek, H., Savvidou, G., Adams, K. M., Chan, S. (2017). Exploring connections between the Paris Agreement and the 2030 Agenda for Sustainable Development. SEI Policy Brief.

Eriksen, S., E.L.F. Schipper, L. Lenaerts, M. Scoville-Simonds, H. Adam, N. Brooks, B. Harding, D. Khatri, D. Liverman, M. Mills-Novoa, M. Mosberg, B. Mouk, A. Nightingale, H. Ojha, L. Sygna, M. Taylor, K. Vincent, C. Vogel, J.J. West (2018) 'Climate change interventions and vulnerability reduction in developing countries: challenges and leverage points for transformation' Background paper for the Norwegian Ministry of Foreign Affairs by the Department for International Environment and Development Studies (Noragric), Norwegian University of Life Sciences.

Eriksen S. H., A.J. Nightingale, H. Eakin (2015). Reframing adaptation: The political nature of climate change adaptation. *Global Environmental Change*. 35: 523-533

Eriksen, S., J. Lind (2009) 'Adaptation as a political process: adjusting to drought and conflict in Kenya's drylands' *Environmental Management* 43(5): 817-835.

Fazey, I., Wise, R.M., Lyon, C., Câmpeanu, C., Moug, P., Davies, T.E. (2016) Past and future adaptation pathways, *Climate and Development*, 8:1, 26-44  
DOI: [10.1080/17565529.2014.989192](https://doi.org/10.1080/17565529.2014.989192)

GCA [Global Commission on Adaptation] (2019). Adapt now: a global call for leadership on climate resilience.

[https://cdn.gca.org/assets/2019-09/GlobalCommission\\_Report\\_FINAL.pdf](https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf)

GCF [Green Climate Fund] (2020) Green Climate Fund Portfolio Dashboard. <https://www.greenclimate.fund/projects/dashboard>. Accessed 29 February 2020.

Godfrey-Wood R. and Naess, L. O. (2016). Adapting to Climate Change: Transforming Development? *IDS Bulletin*. 47(2): 49-62.

Gough, I. (2017) Heat, Greed and Human Need. Climate Change, Capitalism and Sustainable Wellbeing. Chapter 9: Conclusion: a three-stage transition Climate Change, Capitalism and Sustainable Wellbeing. Elgaronline

DOI: <https://doi.org/10.4337/9781785365119.00018>. pp:194-209.

Hallegatte, S., Bangalore, M., Bonzanigo, L., Fay, M., Kane, T., Narloch, U., Rozenberg, J., David Treguer, D. and Vogt-Schilb, A. (2015). *Shock waves: managing the impacts of climate change on poverty*. The World Bank.

Hecht, G. (2018) The African Anthropocene. Aeon. 6<sup>th</sup> February 2018. <https://aeon.co/essays/if-we-talk-about-hurting-our-planet-who-exactly-is-the-we> [Accessed 14 May 2019]

IDC [International Development Committee] of the House of Commons (2019) 'UK aid for combating climate change', published 8 May 2019.

IPCC [Intergovernmental Panel on Climate Change] (2018). Summary for Policymakers. In: 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, H. O. Pörtner, D. Roberts, P.R. Shukla, J. Skea, P. Zhai, Y. Chen, S. Connors, M. Gomis, E. Lonnoy, R. Matthews, W. Moufouma-Okia, C. Péan, R. Pidcock, A. Pirani, N. Reay, M. Tignor, T. Waterfield, Z. Xiao (eds.)]. World Meteorological Organisation, Geneva, Switzerland.

IPCC (2012). Summary for policymakers. In: CB Field, VR Barros, TF Stocker, D Qin, DJ Dokken, KL Ebi, DL Mastrandrea, KL Mach, G-K Plattner, SK Allen, N Tignor, PM Midgley, eds. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge; New York, NY: Cambridge University Press; 2012, 1– 19.

Juhola, S., E. Glaas, B-O. Linner, T-S. Neset (2016) 'Redefining maladaptation' *Environmental Science and Policy*, 55(1): 135-140

Kates, R., (2000) Cautionary Tales: Adaptation and the Global Poor ,*Climatic Change*, 45: 5-17.

Khan, M. R. and J. Roberts, J. T. (2003). Adaptation and international climate policy. *WIREs Climate Change* 4(3): 171-189, <https://doi.org/10.1002/wcc.212>

Kuhl, L. (2018). Potential contributions of market-systems development initiatives for building climate resilience. *World Development*, 108, 131-144.

Lahsen, M. Sanchez-Rodriguez, Lankao, P. R., Dube,P., Leemans, R., Gaffney, O., Mirza, M., Pinho,P., Osman-Elasha, B. and Stafford-Smith, M. (2010). Impacts, adaptation and vulnerability to global environmental change: challenges and pathways for an action-oriented research agenda for middle-income and low-income countries. *Current Opinion in Environmental Sustainability*. 2:364–374.

Matin, N., Forrester, J., Ensor, J. (2018) What is equitable resilience? *World Development*, 109: 197-205.

Mikulewicz, M. (2019) Thwarting adaptation's potential? A critique of resilience and climate-resilient development, *Geoforum*, 104: 267-282.  
<https://doi.org/10.1016/j.geoforum.2019.05.010>

Mosberg, M., Nyukuri, E., and Næss, L.O. (2017). The power of 'know-who': Adaptation to climate change in a changing humanitarian landscape in Isiolo, Kenya, *IDS Bulletin*, 48(4):79-92, DOI: 10.19088/1968-2017.154

Nagoda, S. (2015) New discourses but same old development approaches? Climate change adaptation policies, chronic food insecurity and development interventions in northwestern Nepal; *Global Environmental Change*, 35:570-579.

Nightingale, A.J., Eriksen, S., Taylor, M., Forsyth, T., Pelling, M., Newsham, A., Boyd, E., Brown, K., Harvey, B., Jones, L., Bezner Kerr, R., Mehta, L., Naess, L-O., Ockwell, D., Scoones, I., Tanner, T., Whitfield, S. (2019) Beyond Technical Fixes: climate solutions and the great derangement, *Climate and Development*, DOI: [10.1080/17565529.2019.1624495](https://doi.org/10.1080/17565529.2019.1624495)

Ojwang, L., Rosendo, S., Celliers, L., Obura, D., Muiti, A., Kamula, J., and Mwangi, M. (2017). Assessment of coastal governance for climate change adaptation in Kenya, *Earth's Future*, 5(11):1119–1132, <https://doi.org/10.1002/2017EF000595>

Owusu-Daaku, K. N. (2018). (Mal) Adaptation opportunism: when other interests take over stated or intended climate change adaptation objectives (and their unintended effects). *Local Environment*, 23(9), 934-951.

Persson, Å.; Klein, R.J.T. (2009). Mainstreaming adaptation to climate change into official development assistance: challenges to foreign policy integration, in P. Harris (ed.) *Climate Change and Foreign Policy: Case Studies from East to West*. London: Routledge. ISBN: 9780415483452. Pp. 162–177.

Peters, K., Langston, L., Tanner, T., and Bahadur, A. (2016). 'Resilience' across the post-2015 frameworks: towards coherence? ODI Working Paper. Overseas Development Institute, London.

Prasad, R. S., & Sud, R. (2019). Implementing climate change adaptation: lessons from India's national adaptation fund on climate change (NAFCC). *Climate Policy*, 19(3), 354-366.

Reid, H., Schipper, E.L.F. (2014) Upscaling community-based adaptation, pp. 3-21 in Schipper, E. L. F., Ayers, J., Reid, H., Huq, S., & Rahman, A. (eds). *Community-based adaptation to climate change: Scaling it up*. Routledge.

Ribot, J. C. (2009) 'Vulnerability does not just Fall from the Sky: Toward Multi-scale Pro-poor Climate Policy', in R. Mearns, A. Norton (eds.), *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. Washington, DC: The World Bank.

Rive, N. (2017). Climate finance or development finance? *Asian Development Blog*. <https://blogs.adb.org/blog/climate-finance-or-development-finance>, Accessed 29 February 2020.

Roy, J., P. Tschakert, H. Waisman, S. Abdul Halim, P. Antwi-Agyei, P. Dasgupta, B. Hayward, M. Kanninen, D. Liverman, C. Okereke, P.F. Pinho, K. Riahi, and A.G. Suarez Rodriguez (2018). Sustainable Development, Poverty Eradication and Reducing Inequalities. In: *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* [Masson-Delmotte, V., 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. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)].

Shackleton, S. Ziervogel, G., Sallu, S., Gill, T. and Tschakert, P. (2015) Why is socially-just climate change adaptation in sub-Saharan Africa so challenging? A review of barriers identified from empirical cases. *WIREs Climate Change*, 6:321–344. doi: 10.1002/wcc.33

Schipper, E.L.F. (2007) 'Climate Change Adaptation and Development: Exploring the Linkages' Tyndall Working Paper No. 107.

Schipper, E. L. F., Ayers, J., Reid, H., Huq, S., & Rahman, A. (2014). *Community-based adaptation to climate change: Scaling it up*. Routledge.

Sidner, L., and Amerasinghe, N. M. (2019). The Green Climate Fund's Proposed Approach to Costs: Not Fit for Adaptation. World Resource Institute Blog. <https://www.wri.org/blog/2019/07/insider-green-climate-fund-s-proposed-approach-costs-not-fit-adaptation>, Accessed 29 February 2020.

Scoville-Simonds, M., Jamali, H., Hufty, M. (2020) The Hazards of Mainstreaming: Climate change adaptation politics in three dimensions, *World Development* 125 <https://doi.org/10.1016/j.worlddev.2019.104683>



Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O. and Ludwig, C (2015). The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene*, (1): 81-98  
<https://doi.org/10.1177/2053019614564785>.

Surminski, S., & Tanner, T. (Eds.) (2016). *Realising the 'triple dividend of resilience': a new business case for disaster risk management*. Dordrecht: Springer.

Swart, R., Biesbroek, R. and Lourenço, T.C. (2014) Science of adaptation to climate change and science for adaptation. *Frontiers in Environmental Science, Interdisciplinary Climate Studies*.  
<https://doi.org/10.3389/fenvs.2014.00029>

Tanner, T. and Horn-Phathanothai, L. (2014) *Climate Change and Development*, Routledge: London.

Tanner, T. and Wilkinson, E. (2016) [Time to act: investing in resilience](#), Chapter 3 in *World Disasters Report 2016: Resilience: saving lives today, investing for tomorrow*. IFRC, Geneva. Available at: <https://media.ifrc.org/ifrc/publications/world-disasters-report-2016/chapter-3/>

UNEP (2018). The Adaptation Gap Report 2018. United Nations Environment Programme (UNEP), Nairobi, Kenya.

UNFCCC [UN Framework Convention on Climate Change] (2017). 'Opportunities and options for integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015–2030', Technical Paper by the UNFCCC Secretariat.

Vanhala, L. and Hestbaek, C. (2016). Framing Climate Change Loss and Damage in UNFCCC Negotiations. *Global Environmental Politics*, 16 (4): 111-129  
[https://doi.org/10.1162/GLEP\\_a\\_00379](https://doi.org/10.1162/GLEP_a_00379)

Weiss, L., Lebrón, M. and Chase, M. (2018). Eye of the Storm: Capitalism, Colonialism, and Climate Change in the Caribbean. *NACLA Report on the Americas*, 50:2, 109-111, DOI: 10.1080/10714839.2018.1479417.

Webber, S. (2016). Climate Change Adaptation as a Growing Development Priority: Towards Critical Adaptation Scholarship. *Geography Compass* 10 (10): 401–413.

Weikmans, R., Roberts, J. T., Baum, J., Bustos, M. C., Durand, A. (2017) Assessing the credibility of how climate adaptation aid projects are categorised, *Development in Practice* 27(4): 458-471.

Werners SE, van Slobbe E, Bölscher T, Oost A, Pfenninger S, Trombi G, Bindi M, Moriondo M (2015) Turning points in climate change adaptation. *Ecology and Society* 20:3. doi: [10.5751/ES-07403-200403](https://doi.org/10.5751/ES-07403-200403).

Work, C., Rong, V., Song, D., Scheidel, A. (2018) Maladaptation and development as usual? Investigating climate change mitigation and adaptation projects in Cambodia, *Climate Policy*, <https://doi.org/10.1080/14693062/2018.1527677>