A working paper of the Equity Working Group of the independent Global Stocktake (iGST)





A working paper of the Equity Working Group of the independent Global Stocktake (iGST)



May 2022

© iGST 2022

Cite as: iGST Equity Working Group. (2022) *The Equity Landscape*. Equity Working Group of the independent Global Stocktake.

Download the report



As of the date of publication, the iGST Equity Working Group consists of Mohamed Adow, Tom Athanasiou, Navroz Dubash, Tasneem Essop, Joyeeta Gupta, FEI Teng, Christian Holz, Fatuma Hussain, Sivan Kartha, Sonja Klinsky, Andrew Marquard, Yacob Mulugetta, Xolisa Ngwadla, PAN Jiahua, Harpreet Paul, Lavanya Rajamani, Ambuj Sagar, Harjeet Singh, and Vicente Paolo Yu.

#### About the independent Global Stocktake (iGST) and Equity Working Group

**The Independent Global Stocktake** (iGST) is a consortium of civil society actors working together to support the Global Stocktake (GST), the formal process established under the Paris Agreement to periodically take stock of collective progress toward its long term goals.

The iGST aligns the independent community — from modelers and analysts, to campaigners and advocates — so we can push together for a robust GST that empowers countries to take greater climate action.



#### www.independentgst.org

**The Equity Working Group** is bringing together thinkers and practitioners, mainly from the Global South, working on equity in the UN climate regime. We aim to help concretize the Paris Agreement's mandate to conduct the GST "in the light of equity." In 2021, the group will create and release new thinking on how to consider equity in the GST across the themes of adaptation, finance and support, loss and damage, mitigation, etc.

# Contents

Contents	4
	5
+ Introduction	5
+ 1. The Stocktake we actually need, now and in the long term	12
+ 2. An initial survey of critical issues	16
I. Mitigation	16
II. Adaptation	17
III. Loss and Damage	19
IV. Support and Finance	20
How much and what kind of support is needed – key elements of a real Stocktake	21
How could adequate support be facilitated by the GST?	23
What "outside" strategies could help generate momentum on support?	24
V. Capacity Building	26
VI. Extraction or "Supply-side" equity	28
VII. Unequal development in a climate constrained world	31
+ 4. Towards Conclusions	34
I. Crosscutting points	34
II. Specific points	35
III. Concluding points	38
+ References	40

 $\Phi^{(1)}$ 



The Global Stocktake (GST), which is to be conducted "in the light of equity", could substantively advance global climate negotiations. But the GST is constrained by the same realities as the larger negotiations. The Independent Global Stocktake (iGST) is similarly constrained, though its independence allows it to look past the formal process to the larger world, which is after all the real source of the paralysis that now threatens us all. This brief paper takes advantage of this independence to do just that. It does not pretend to map the overall position in anything like a comprehensive manner, but it is, we hope, a helpful reflection. Its goal is not to paint the equity challenge in strokes so broad that practical steps seem useless and insignificant, but rather to inform such steps, that they might actually move us forward.

# + Introduction



Equity is a cross-cutting theme in the Global Stocktake (GST). This was agreed at the 24<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (COP) in Katowice, Poland. Here, Parties elaborated on the stipulation in Article 14 of the Paris Agreement (the Agreement) that the GST is to be conducted "in the light of equity." This phrase was not immediately defined further, though it remains clear that the Paris Agreement is markedly comprehensive in its overall acknowledgment of equity and justice concerns. In addition to asserting that it is guided by the principles of the Convention<sup>1</sup>, the Agreement explicitly highlights "the principle of equity". It also notably acknowledges the basic "right to development", and specific priorities such as "ending hunger", the "imperatives of a just transition", "obligations on human rights", "the rights of indigenous peoples", "gender equality", "intergenerational equity", and even "climate justice". There are further references as well, and while each requires further elaboration, negotiation, and action, it can be assumed that "in the light of equity" implies a recognition that these diverse and related

<sup>&</sup>lt;sup>1</sup> The Paris Agreement specifically notes that this guidance by Convention principles should be taken as "including the principle of equity and common but differentiated responsibilities and respective capabilities."

dimensions of equity are indeed relevant when striving toward the long-term goals of the Paris Agreement.<sup>2</sup>

The other way in which equity challenge remains on the formal negotiating agenda is through the invitation, which all countries have received, to show how their nationally determined contributions (NDCs) are fair and ambitious.

Yet the overall trend is in just the opposite direction: to ignore equity, or to constrain it within a regime that largely neglects principle-based differentiation in favor of "self-differentiation," and focuses almost exclusively on mitigation while ignoring adaptation and loss and damage, and their funding. This trend must be countervailed if the GST is to succeed, for it is, again, mandated to consider equity as well as the best available science, in order to raise ambition.

There are other very specific reasons why the GST is crucially important. Key among them is the seldom noted fact that equity assessment is essential to a well-functioning "ambition ratchet" that is actually capable of doing its part to achieve the Paris objectives. The critical point here is not that a global climate response *should* be fair, or that formal agreement on exactly what this means is necessary to the success of the ambition ratchet. It is rather that, unless the ratcheting process is widely accepted as being fair, or at least fair enough, it is unlikely to happen at the necessary speed. That is, instead of a widespread embrace of the necessary transformation – and a broad and sweeping transformation it would indeed need to be – there will be endless backlash and resistance, and ultimately a failure to sustain a sufficiently robust working consensus among the disparate actors that must be committed to a global transformation if it is to have any plausible chance of success.

Given this, it is extremely unfortunate that the formal terms of reference of the GST, as laid out in the Paris Agreement's Article 14, are generally interpreted to constrain the Stocktake to the 'collective' level, instead of considering individual countries' climate actions. Still, the

<sup>&</sup>lt;sup>2</sup> As noted in Article 2.1 of the Paris Agreement, the three long-term goals are: "(a) Holding the increase in the global average temperature to well below 2 °C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and (c). Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development." Further, as noted in Article 2, "This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances."

GST is understood to be thus constrained, and this raises questions. How—given that there must be an overall sense of fairness if we are to achieve the rapid, all-hands-on-deck mobilization we need, *and* given that this sense has to turn on judgments about the fairness or unfairness of individual contributions to climate action—can we possibly avoid such judgments? And insofar as the GST is constrained in ways that prevent it from leading negotiated agreement on such judgments, can informal exercises like the iGST take up at least part of the slack? And how, really, are we to judge if an NDC is equitable? This is not merely an academic question, for our ability to keep 1.5°C alive depends on the answer.

The presumption here is that this question can be approached, at least in the immediate future, only by way of independent efforts that can fill gaps left by the official process, and simultaneously inform it. Such efforts would, at least in principle, have terms of reference broad enough to support assessment with respect to all the dimensions of equity mentioned above. That said, we must also say that, given the gravity of the situation, the overarching goal of such exercises must be to be helpful. In practice, this means casting wider nets than the formal process can manage, with the express goal of identifying the key obstacles to mobilization, and the most promising intervention points, where properly framed initiatives might make a real difference. Importantly, not all of these intervention points will be within the formal process.

Other points are also obvious. While significant attention has been focused on equity, its treatment is still very limited, with most attention going to equity in mitigation, and very little going to equity in adaptation, or in loss and damage, or in the provision of means of implementation. 2021's COP26 in Glasgow only exacerbated the problem. In fact, in the discussion of whether to phase out coal, developed countries absolutely refused to include the terms "equity" or "common but differentiated responsibilities," even when modified by the text "in the light of different national circumstances", despite this being agreed Paris Agreement language. There is, to be sure, a recognition of "the need for support towards a just transition", but no progress was made towards actually providing such support, or indeed any finance for loss and damage. Obviously, much more change is necessary. Themes of very high interest to many developing countries need much more consideration. Yet participation in both formal and informal processes tends to be dominated by experts from the global North, and this is true when it comes to equity, as it is in most other areas.

The climate equity dream – that equity can be an *enabler* of ambition – is an old one. So far, it must be said, the record is ambiguous. Equity opens doors, but it also raises the stakes, calling into clear relief the scale of the necessary transformation, and its disruptive potential. Not surprisingly, this can temper near-term ambition, at least in some countries (Cunliffe et al. 2019), and the truth is that equity-adjacent negotiations have sometimes become startlingly toxic. The dynamics here must absolutely be reformed in favor of greater cooperation and trust, which will be best achieved by major Parties shifting their positions on keystone issues including finance and principle-based differentiation. Ultimately, honest

attempts to address equity in all GST themes will be necessary if it is to move matters forward. The simple truth here is that no real breakthroughs are possible unless Parties see other Parties to be making good-faith efforts to address their concerns, for this is a precondition of trust and therefore of cooperation toward resolving this common global crisis.

It is especially true in the situation now emerging, wherein the focus on national net-zero 2050 goals makes substantive progress on support visibly imperative. The key word here is "visibly". In 1991, Anil Agarwal and Sunita Narain framed the challenge as *Global warming in an unequal world: A case on environmental colonialism,* and soon thereafter Kirk Smith and Peter Hayes published a book with the even more explicit name of *The Global Greenhouse Regime: Who Pays?* Obviously, the support issue is not a new one, and it's easy to argue that this is a perennial issue in which nothing really changes. This does not however appear to be true. Indeed, COP26 may well be remembered as the point where the finance questions finally took their proper place on the main stage.<sup>3</sup>

The iGST, for its part, is a multi-faceted initiative located on the boundaries between the formal GST (which it attempts to influence) and the larger challenges of emergency climate stabilization. These boundaries are particularly important for any *Equity* Working Group (EWG) because the equity challenges of the climate reckon sprawl in all directions. Given this, and particularly when stepping back and reflecting on what kind of analysis would actually be needed to do a proper stocktake, one that is truly "in the light of equity," the question is just how capacious such an analysis should be.

More specifically, the members of the EWG have explicitly charged themselves with centering the concerns of the developing countries, or in any case taking an open and balanced approach (Holz et al. 2019) that does not deprecate these concerns, relative to the imperatives of climate stabilization. To that end, we have taken deep dives into a series of key issues (e.g., adaptation, supply-side equity, loss and damage finance, capacity building, unequal development in a climate-constrained world), with the goal of identifying the underlying equity challenges raised in each area. Importantly, these dives were not formally constrained by the terms of reference of the GST itself, which we found too constricting to allow a clear view of the underlying equity challenges.

Consider the net-zero 2050 strategy, which has moved front and center in the formal negotiations and various adjacent initiatives. One simple and rather obvious observation will

<sup>&</sup>lt;sup>3</sup> We will largely limit our considerations of "climate finance" to support. Partly, this is due to the explicit mentioning of "support" (but not "climate finance") in the text of Article 14, and due to the long-standing imbalance of equity considerations in mitigation vis-à-vis those in adaptation and support. Clearly, the issue of "climate finance" is broader than international financial support.

serve to illustrate the point – if one wishes to evaluate the NDCs' mitigation aspirations *as a group* to see if they are consistent with a global NZ2050 goal, then the GST is of obvious utility. But if, instead, the intention is to evaluate the fairness of the individual NDCs, and specifically of the relationship between domestic action and internationally cooperative action in those NDCs, it is not. Thus, at least for the moment, any equity evaluation of the national pledges of action and support must instead be conducted by independent processes outside the GST.

Individual Parties, even within the formal GST process, could of course unilaterally elaborate the principles on which they have judged their own NDC "fair and ambitious", and they could do so in a useful – not merely self-congratulatory – way by providing enough detail to enable one to understand clearly what the implications would be for other countries if the same principles were applied to all. And, though this is more than the Parties have been willing to negotiate so far, the COP could in a subsequent step build on this progress by agreeing and articulating the principles that are to guide Parties statements regarding the "fair and ambitious" nature of their NDCs.

In the meantime, it remains up to civil society actors to evaluate the fairness of the individual NDCs. Many such NDC assessment initiatives have already been undertaken, and have usefully informed civil society strategy. The key point here is that, rather than being stymied by the inherently value-based and hence contested nature of the issue – as have the Parties to the UNFCCC – the civil society organizations or coalitions involved in these initiatives have explicitly embraced their normative nature, using it to foreground the ethical issues that are key to equitably sharing the global climate effort. This has enabled them to move beyond general expressions about climate equity, which were inadequate bases for explicit quantitative conclusions with respect to national fair shares of mitigation and international support. In so doing, it provided grounds for a coherent expression of climate equity, and for a program of communications, outreach, and policy advocacy that was consistent with it.

Equity in adaptation is another exemplary case. Evaluating the Global Goal on Adaptation (GGA) will require methodologies designed specifically for this purpose. These methodologies will need to be dynamic in light of the relationships between adaptation and mitigation, and may extend beyond existing quantifications to include process-oriented assessments as well as snapshot metrics intended to identify if actions are in line with the desired direction of travel. Looking back at indicators of equity in the early "intended" nationally determined contributions (INDCs), it was found that only one of the 11 indicators used was related to adaptation – whether vulnerability is used as an equity argument (Winkler et al. 2018), and so far, the balance here has not appreciably improved.

The challenge here is great, and it is not restricted to the assessment of adaptation pledges. The unfolding climate crisis raises difficult issues in all sorts of other areas as well (e.g., fossil fuel supply-side equity, loss and damage finance, climate-driven displacement), as is now obvious. That said, the challenges raised by the necessity of effective adaptation are well

# +

#### The Equity Landscape

known, and the *Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation* is an opportunity to develop a broad, shared understanding of the specific challenges of assessing pledges in a wholistic manner. How, for example, can the adaptation needs of very poor countries and communities best be understood, and how can local efforts be properly recognized and supported? Here, it's absolutely clear that civil society could play an important role in developing coherent approaches.

And, of course, when adaptation fails, there is the loss and damage which is already taking place, but for which virtually no recognition – let alone compensation – is being provided. This is a deep injustice. Despite an almost single-minded call for finance for loss and damage in the second week in Glasgow, the only agreement reached was to talk about the money in a *Glasgow Dialogue*. Equity requires that funding for loss and damage be treated with the same sense of urgency that can now be seen in the move towards (if not actually to) annual turns of the mitigation ambition ratchet.

In this context, we have decided to proceed by:

- Defining the core equity issues posed in a variety of key areas. These issues are typically very challenging and often avoided, but they must nonetheless be articulated, if only to allow clarity of thought and action.
- Identifying the issues in each key area that are, or may be, strategically and structurally decisive. The issues that, in effect, define the points where political attention should be concentrated.
- Working to draw attention to these leverage points, in the context of an equity evaluation of the climate transition challenge as a whole, one that is not constrained in advance to the formal terms of reference of the GST, or indeed the UNFCCC negotiations.

Note that there are quite a number of "key areas" to look at here. Of the issues that the working group discussed during 2021, we have selected five to explore in this paper: Adaptation, Loss and Damage, Support and Finance, Capacity Building, and Extraction or "Supply-side" Equity. We have also made some preliminary comments on the overarching challenge of unequal development in a climate-constrained world, a topic which we have explored in some detail, but not yet characterized in a satisfying manner.

Note that mitigation is nowhere on this list. Or, rather, it is everywhere on this list. How could it not be when 1.5°C is very broadly accepted as the proper goal of climate mobilization? The issue here, bluntly, is that the current pledges put us on track to peak globally by 2030, rather than achieving a 50% emissions cut by 2030, which is what, according to the IPCC, we would actually need to do to "keep 1.5°C alive." Thus, mitigation concerns are woven into all the topics you'll encounter in the next section.

Note also that finance and support play a central role in our analysis. Mitigation finance is of course a key issue here, but finance in relation to adaptation, loss and damage, and avoided emissions is also critical and always at stake, even if only implicitly, whenever these topics are discussed. This is important, because while the challenges of mitigation finance are fairly well understood, with respect to both international public climate finance and private mechanisms like carbon markets, such clarity does not always maintain in other areas. There are many issues here, and much to do. In particular, there has been no public finance breakthrough, which will inevitably be a major challenge for the GST, as it is for the larger negotiations.

Finally, there are plenty of complications beyond finance, some of which will be discussed in the following sections. For example, the global distribution of sinks and "mitigation potential" (relative to capacity to act) is an important and quite possibly decisive problem that has received far too little attention. And beyond this challenge there are many others.

# + 1. The Stocktake we actually need, now and in the long term

The Stocktake we actually need has much in common with the new and better forms of international cooperation on climate and development overall that we actually need. And, critically, these have to be forms that prioritize the needs of the poor and the vulnerable, in the developing world but not just in the developing world.

More specifically, our ideal Stocktake would have a number of concrete features. Here is a very preliminary and non-comprehensive list:

- It would provide generative, equity-focused assessment across the full suite of climate actions, including mitigation, adaptation, loss and damage, support and finance, and capacity building, so that the very process of conducting the Stocktake increases the global understanding of equity norms. Who is doing their fair share, and who is free-riding? These are key questions, and while there will never be complete agreement, there must be some, and it must be substantive.
- It must be capable of guiding our just transitions to sustainable, post-carbon societies around the world, of supporting an NDC-based long-term planning process that can serve such transformation, which it should be said inevitably implies systemic economic change. This would, among other things, include:
  - Being focused on 2030, not 2050 or the long term. The importance of this point cannot be overstated, so do note that the Glasgow Climate Pact "Notes the importance of aligning nationally determined contributions with long-term low greenhouse gas emission development strategies." This is a beginning, and if elaborated by similar text that added a long-term perspective on near-term action on adaptation, loss and damage, and finance, it would be an even better beginning.
  - Being focused on critical real-world issues, including the global fossil fuel phase-out. Note here that meaningful phase-outs must come with dates, before which the process is a phase-down. There's no need to fight about these words, and we should strain to concentrate instead on the date, and on the very limited scope we have for varying it between countries (at different levels of development) if we are seriously attempting to achieve 1.5°C.
  - Being capable of supporting the overall effort to end deforestation and, in fact, to reforest the planet. It is only reasonable to assume that the formal progress that has been made on this issue will be very difficult to redeem in practice. What does

this imply, politically and institutionally? What kind of monitoring and stocktaking will it require? What, finally, shall be done with rogue actors that simply refuse to comply?

- Being capable of managing the inevitable drive for geoengineering, by factoring it into assessments in a coherent manner. It is not enough to simply declare all such efforts to be off-limits, nor is it enough to take "the promise" of geoengineering at face value.
- It would be capable of foregrounding the protection of the poor and most vulnerable during the challenging transition ahead. This is an overarching prime imperative, and must be understood to include not only protection from climate pacts but also protection from the potentially negative impacts of mobilization-related disruption. To be capable of doing this, a Stocktake must:
  - Support an ethically defensible Global Goal on Adaptation (GGA) and a similar ethically defensible global loss and damage regime. What is the "adaptation need", without which the mitigation project cannot succeed? How do we understand it relative to different degrees of warming? How do we understand the disaster and recovery challenges that will come with the now inevitable destruction? There are many questions the analysis here must address.
  - Be adequate, as well, to the challenges of loss and damage, which ultimately extend beyond the political and institutional capacities of the existing world system. What would be necessary to protect people and ecosystems in a 1.5°C world? A 2°C world? A 2.5°C world? What if justice, or even survival, in the face of such warming demands large-scale international climate migration?
- It would refrain from strategies that shift responsibilities and burdens to the poor, and to developing countries. Such shifts can and do occur in all sorts of ways, both between and within countries, as societies struggle to both adapt and decarbonize, even absent proper cost-sharing and social protection mechanisms. This includes:
  - Factoring economic inequality into assessments and Stocktakes in a coherent manner. We know that sustainability will remain beyond reach unless we achieve much greater economic inequality, but what does this tell us about the short term? How, in particular, will the effort to comprehensively achieve the Sustainable Development Goals be melded with the climate mobilization? Examples of strategies that fail on this point could include the following:
    - An international regime in which both rich and poor countries are mandated to achieve domestic net zero emissions pathways by essentially the same deadline year, even without adequate international cost-sharing.



- A mitigation-focused international regime in which technological transition is the only real focus on international cooperation, and countries are left more or less on their own with respect to both adaptation and loss and damage costs.
- International fossil phase-out/down strategies that focus only on coal (upon which developing countries are differentially more dependent than wealthy countries) rather than taking a comprehensive approach that includes oil and gas as well.
- Domestic strategies, within either wealthy or developing countries, that do not require the wealthy to pay their proper shares of national transition costs, thus resulting in a "regressive" system that burdens poor populations in a variety of different ways.
- It would honestly face the challenges of international support, including by supporting the transparent evaluation of progress made, and not made, toward the long-term goal on finance, and against the actual mitigation, adaptation, and loss and damage need, and by establishing pathways for generating adequate finance and diverse forms of international support. This includes:
  - Being capable of evaluating international support commitments and institutions, relative to the demands of an honest and equitable net-zero strategy. This strategy would need to include explicit 2030 waymarks and, of course, support arrangements. Finance is critical here, but it's not the whole of the story. The real issue is equitable differentiation, and it cannot be allowed to fall off the table.
  - Engaging the kinds of financial devices and forms of international support we actually need to finance the transition which likely goes far beyond the climate regime proper. What elements of the existing structure of trade, competition, WTO barriers, diffusion, etc. are consistent with ensuring the deployment of technology and other MOI to address the climate emergency? Additional financial devices may need to be explored and a number of innovative forms are possible. Global progressive taxation, Special Drawing Rights, and the Sustainable Development Goals, all will have to be part of the conversation.
  - Establishing robust, comprehensive needs assessments, which must be done in democratic ways that respect the preferences of communities around the world. This would build on the first 'determination of needs' report published by the Standing Committee on Finance

Not all of this will be possible in the short term, of course. But an effort to imagine the fiveyear stocktaking cycle as one that continues past 2030, and past 2050, is a productive one. It helps us to imagine a technological and institutional landscape within which the stabilization of the climate system is actually possible.

The first Stocktake will, even in the best case, be a pale shadow of the Stocktake we actually need, but it must at least point us in the right direction. The critical issues cannot be located relative to today's political realism. They exist within the larger landscape.

# + 2. An initial survey of critical issues

The technical assessment component of the formal GST is being defined by guiding questions<sup>4</sup> laid out by the chairs of the UNFCCC Subsidiary Bodies (SBs), but we did not take these questions to define our approach to the equity challenge. Rather, we have chosen a set of key issues and let their logic define our discussion. Obviously, in so doing, we have kept the purposes of the GST, which are ultimately the purposes of the Paris Agreement, in mind. These purposes, which are most clearly stated in Article 2, are often invisible in discussions of the GST, but they should not be. We believe that they are very visible indeed in the following areas.

# I. Mitigation

As noted above, we will in this paper spend very little time on the problem of mitigation. However, we all know that no real justice will be possible if we do not avoid the "tipping cascades" that are now visible on the horizon, or indeed if we fail to achieve the Paris temperature goals. In this context, an emergency planetary mobilization is clearly in order, one that requires that all the key points in this section are taken very seriously indeed.

What we have, so far, in place of an emergency global mitigation program, is a half-baked net-zero strategy that has been widely and often justly criticized, including by members of the EWG (Dubash et al. 2021, Athanasiou, 2021, CAT 2021). One key point here is that there is nothing inherent about a global push for near-universal national net-zero 2050 targets that requires such targets to be excuses for short-term inaction. Indeed, it may be (we shall see) that, having presented new 2050 targets, nations and corporates will be more effectively pressured to adopt the short-term policies and targets that would make them meaningful.

In any case, any serious mitigation program requires breakthroughs on other fronts as well, from adaptation to just and sustainable development. In particular, such a program would require a substantive breakthrough on finance and support, which is hard to imagine without a working solution to the problem of differentiation. In this context, it is essential to further develop our understanding of equity as a driver of ambition, both in general (Al-Zahrani et al. 2019) and with respect to the specific dynamics of the net-zero strategy.

<sup>&</sup>lt;sup>4</sup> See here: https://unfccc.int/sites/default/files/resource/Draft%20GST1\_TA%20Guiding%20Questions.pdf

The challenges specific to this strategy would be better framed as "just transitions to net zero emissions". This phrase is already in common usage, and it should absolutely be mainstreamed. Nuanced differentiation can be achieved not only by the net-zero date (China has already taken 2060, while India has taken 2070), by short-term waymarks (and associated pathways), and of course by conditionalities and support contributions. There will of course be lots and lots of issues. Does it make sense, for example, for some countries to express their targets in terms of CO<sub>2</sub>, while others refer to a larger basket of gases? And how are fossil fuel emissions balanced against removals, especially land-based removals? We will all depend more and more on "global sinks", yet forests and fields are in specific countries – how can we deal with that fairly? Who will protect the best way of removing CO<sub>2</sub> from the atmosphere – trees? And, importantly, what do net-zero commitments actually mean in terms of the rapidly depleting carbon budget? Do they offer opportunities to continue to delay effort and greatly overshoot the budget, or do they imply rapid, stringent action that reduces emissions in the near-term, not only several decades hence?

There are of course a thousand different ideas in play in the mitigation domain, and they have everything to do with increasing mitigation ambition. The relevant point, already noted above, is that mitigation ratchets or mitigation accelerators (the latest jargon) cannot be expected to succeed unless they take proper account of the equity challenges of very rapid change in a starkly inequitable world. The problem of mitigation cannot be solved on its own.

# **II. Adaptation**

The core of the adaptation challenge is protecting the vulnerable. Yet this challenge cannot be simplified by focusing exclusively on extremely vulnerable nations (e.g., SIDS, LDCs). It is of course absolutely essential to ensure that these countries receive an equitable share of adaptation support, but the larger truth is that there are vulnerable people everywhere. The most difficult case, an inconvenient one from the point of view of international negotiations, is that there are very poor people living within the rich countries, and they are often left to fend for themselves. Any proper adaptation needs analysis would have to take this into account.

Mitigation, obviously, is ultimately a global challenge, not only a national one. Adaptation, perhaps less obviously, is also a global challenge. A future in which the wealthy countries are left to pursue adaptation within their own borders, while providing inadequate levels of adaptation support to poor countries, is not a future in which effective adaptation strategies can be expected to evolve. Wealthy and high responsibility countries, in particular, have obligations to provide substantial levels of support outside their own borders.

To really assess progress toward a global goal on adaptation, we have discarded the fiction that adaptation can be conceived as a specific response to a well-bounded "environmental

problem". Vulnerability and adaptation are so intrinsically linked with development itself that any Global Goal for Adaptation is also a Global Goal for Development. Some proposed adaptation projects have actually been criticized for this, as if adaptation were only a problem of shock-proofing big infrastructure – this indicates a profound lack of understanding.

All of this helps to explain why adaptation is so contested. Clearly, as a practical matter, we need a well-resourced multilateral effort to develop national-level capacity to assess unfolding adaptation needs and to communicate these back into the multilateral process. That said, we already know that developing nations' adaptation needs are already five to ten times greater than the amount currently available as international public adaptation finance (Adaptation Gap Report 2021, page XV) and that an even balance of adaptation and mitigation funding has been extremely difficult to achieve. In any case, much more money is needed, and, in general, it's not going to come via the private sector, which by its nature prioritizes profitability.

#### Some Key Questions:

- How to understand and manage the diversity of adaptation needs? These vary so greatly that it's challenging to do anything like a comprehensive needs analysis, let alone an organized synthetic accounting of distinct needs that is designed to enable the relatively rapid identification of common patterns and/or areas of highest concern.
- How to deal with domestic matters in a global forum? Adaptation is ultimately local or regional and will inevitably be shaped by local and regional actions, in widely varying contexts that often operate within very small scales – down to households, villages, and cities. This is widely recognized, even at the multilateral level, where the need for "direct access" to adaptation finance by local actors is widely understood. But the deeper challenge is that while domestic actions will contribute to more equitable adaptation, there is an inherent tension in requiring Parties to pursue or report on these in international fora. Indeed, national determination and sovereignty are real and pressing issues here.
- How to bound such sprawling problems? Adaptation needs are shaped by a wide range of drivers. Local needs are often rooted in historical disenfranchisements that pre-date and extend beyond climate-specific pressures. Cleanly separating climate impacts from ongoing development needs is inherently difficult, and clumsy attempts are not likely to resonate with the lived experiences of those on the frontlines. Transformative actions at the depth likely needed to actually move towards adequate adaptation are likely to extend far beyond the mandates of the UNFCCC or even of most nation states. How best can UNFCCC-bound processes leverage these broader changes? Where are the most strategic opportunities to build hooks that facilitate broader changes without derailing the progress possible within the bounds of the UNFCCC?

### **III. Loss and Damage**

It should be noted here that loss and damage is not mentioned in Article 14, though the Katowice decisions allow that it (along with response measures) can be taken into account by the Global Stocktake. It had better be, because COP26 made clear that needs assessments and financial strategies that do not explicitly include loss and damage will not be accepted by the global community, or even the Parties, as legitimate.

The point here is ultimately a very simple one. Serious decarbonization efforts have now been so long delayed that, even in the best case, disaster risk reduction and management are inevitably going to be crucial to any serious climate mobilization. This is why the international Climate Action Network has decided to make loss and damage, and loss and damage finance in particular, a "litmus test" issue, a keystone by which it will judge the success or failure – or indeed the seriousness – of the formal negotiations.

The list of catastrophes goes on and on, and it is not necessary to give examples here. What is necessary is to note that no sum of money can possibly "make up for" the coming devastation, which is of course visited disproportionately on poor and developing countries that have had little to do with causing the climate crisis. That said, loss and damage need is now on the agenda, and methodologies for quantifying it are gradually improving. The New York Times just recently summed them up as "from roughly \$300 to \$600 billion a year by 2030." <sup>5</sup>

The costs here are impossible to establish with any precision, and cannot in any case be separated from political judgment about what kinds of "rehabilitation" are called for. But it should be noted that \$600 billion is more than the combined GDP of the world's 80 poorest countries. And of course, there is a great deal that is not accounted for in even such a figure as this, a great deal (e.g. forced displacement) that entirely eludes quantification. And the damage will only increase with every additional increment of emissions.

How will the issues here make their way to the formal negotiations? We shall see. If this is indeed the path forward, it's worth noting that the associated debate will co-evolve with the GST debate, and perhaps even overshadow it. In any case, by what mechanisms would a loss and damage fund be provisioned? This is the key question, and it immediately takes us

<sup>&</sup>lt;sup>5</sup> <u>https://www.nytimes.com/2021/11/11/climate/climate-glasgow-cop26-loss-damage.html</u>. The citation goes through to a recent report from HBF US



beyond loss and damage, for it is very strongly related to the challenges of mitigation and adaptation finance.

Several points are clear here. One is that our response can't be in the form of a specified figure or a specified series of mechanisms, but has to rather come as commitments to do "whatever is necessary" to support the vulnerable communities that will otherwise be irreparably harmed. Another is that a very large variety of projects and initiatives will be necessary, and many of them will be projects and initiatives that private capital **cannot** be honestly expected to provide. A good deal of public finance will be necessary.

#### Some Key Questions:

- The finance costs associated with loss and damage are different in kind from those associated with mitigation, and even adaptation. For one thing, they carry resonances that cannot be easily contained – conversations about loss and damage finance easily pass into talk of historical responsibility, not to mention "liability" and compensation, and even into reparations? And yet it's also clear that adaptation and just transition costs cannot be clearly separated from those associated with disaster risk reduction and management. How can the challenges here be best faced, and turned towards action rather than deadlock?
- It is widely (but quietly) believed that a proper solution to the loss and damage funding challenge must involve some sort of "automatic replenishment", which does not depend on repeated, explicit, national appropriation decisions. But what would "automatic replenishment" even look like? This is a difficult question, but it is becoming difficult to ignore, in part because it is closely tied to the larger, and rapidly approaching, debate over post-2025 finance. Various ideas are floating around, some of them "fair shares" ideas that emphasize historical responsibility, some of them ideas that imply broader roles for the International Monetary Fund and the multilateral development banks, and some of them proposals for carbon emissions taxes or taxes on fossil fuel extraction (a "Climate Damages Tax"). The question here, an overarching one that takes us beyond loss and damage, is how to proceed?

# **IV.** Support and Finance

How could the GST facilitate the provision and distribution of adequate finance and support? This is in many ways the keystone question, and this very preliminary discussion will not attempt a comprehensive answer. However, such attempts should be made, and are a priority for independent initiatives like the iGST.

#### Some Key Questions:

- How much and what kind of support is needed? For what? How, in particular, could additional support accelerate the drive for adequacy?
- How could adequate support be facilitated by the GST and other assessment processes? What are the big issues that need to be explored?
- Given the limitations of the GST, what "outside" strategies could help to generate momentum on finance and support?

# How much and what kind of support is needed – key elements of a real Stocktake:

The \$100 billion finance goal is and always has been political. It is not supported by any kind of defensible needs analysis, not even one restricted to mitigation. Moreover, as Oxfam has repeatedly shown (for example Oxfam International, 2021) the figures that are generally used to indicate that the developing countries have almost met this target are rife with questionable assumptions. Moreover, only a small and diminishing fraction of delivered/pledged finance has been earmarked for adaptation, and none has been earmarked for loss and damage.

The long-standing failure to achieve the \$100 billion finance goal has been a major obstacle to success in the negotiations. It has been a constant source of discord and mistrust, and – unfortunately – this overall dynamic does not promise to change as the negotiations approach the year 2025, when a new finance goal is slated to be adopted. That goal, crucially, must support mitigation, adaptation, and loss and damage, in a comprehensive manner that includes both capacity building and just transitions. History must not repeat itself.

**National support needs must be articulated as clearly and concretely as possible**. To that end, it is extremely important that countries be supported to develop detailed transition plans and to articulate specific finance and support requirements connected to achieving those plans. By doing so, they would help to make their support needs concrete and thus make it more likely that adequate support will materialize.

**Fossil-extraction-dependent and fossil-import-dependent economies pose key challenges**. These dependencies must be broken far more quickly than will occur in the absence of real assistance. As the costs of phasing out fossil fuels are incurred for the (global) common good, they should be shared fairly, rather than falling on those unfortunate enough to bear them directly. It is unlikely that poorer fossil fuel-producing countries will be able to quickly limit extraction, or that fossil fuel-import dependent poor countries will be able to



quickly reduce their dependence, without substantial financial, institutional and technological support.

Adaptation cannot be treated as being subsidiary to mitigation. Avoiding 'dangerous' anthropogenic climate change necessarily includes protecting human wellbeing from climate impacts and building resiliency to these impacts. Multiple elements of the Paris Agreement point to the need to increase adaptation finance, including Article 2 (2.1b and 2.1c), and Articles 7-10. The GST, of course, must clearly and transparently assess the adaptation need, and the adaptation need shortfall.

#### Loss and Damage cannot be treated as an aspect of adaptation

- Finance commitments to loss and damage have thus far been negligible, a matter that is clearly related to the Paris compromise (para 51 of the Paris decision text) in relation to loss and damage under Article 8 of the Paris Agreement. It should be noted that this compromise, which stipulated that loss and damage would not lead to liability-based compensation, has been the focus of an acrimonious discussion within the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (WIM).
- Any adequate finance package must mitigate the human harm of loss and damage—for example, damage to infrastructure both public and private—and protect from further harm (for instance including early warning systems). This effort must go beyond market mechanisms such as insurance, which evidence suggests will not enable effective action and, specifically, not protect the most vulnerable.
- Loss and damage finance must respond to the full spectrum of impacts, both immediate and slow-onset, and link to broader sustainable development and poverty eradication strategies that cannot be addressed through adaptation alone. This means a variety of forms of financial support will be required – for instance insurance may not be well suited as a response to sea-level rise or other widespread, long-term, slow-onset damages.
- Many forms of action (e.g., changes in migration policies, support for public health and education systems, changes in access to fishing zones) will be needed, and these should be explicitly tracked within the GST. Perhaps the most challenging issue here is climatedriven population displacement, which is politically existential in its implications. There is clearly an "effort sharing" challenge to be faced in determining where refugees will go. Most of the current burden of supporting/hosting refugees is currently being placed on developing countries.

**International financial support for capacity building is essential.** The need here can vary tremendously, but generally includes skill-building, institutional support, and support for interactions amongst key actors. Importantly, financial support for capacity building does *not* 

include actual implementation – e.g., the support intended to facilitate the creation of locally appropriate adaptation plans is additional to the concrete support needed to implement those plans).

**There must be proper rules of access.** We will not achieve society-specific, country-led transformation unless we make finance and support accessible at the most basic levels – how it is provided and what rules control access. A consistent challenge within the climate finance arena has been that some funds have remained inaccessible to those who need them due to fund structure and the rules of access. The key elements of an equitable approach to finance might include:

- Focusing finance on grants, and limiting the use of loans, including those provided by multilateral institutions like the GEF and GCF
- Emphasizing direct access, in the plain meaning of the words; e.g., women in rural communities should be able to get hold of climate finance
- Limiting the use of conditionality for access to funds: Climate finance needs to be as country-driven as possible while also facilitating economic change.

### How could adequate support be facilitated by the GST?

It is extremely important, both within the formal GST and in broader activist and research communities, to develop comprehensive and differentiated plans for the provision of support, across all aspects of the transformation. These plans should attend to the following imperatives:

**Encourage concrete requests for support across ALL categories**: Countries should be as specific as possible about the amount and kind of support they need. The GST can then collate and track these requests (made for example in NDCs) so that assessments can be generated and improved over time. The underlying principle here is that the more concrete demands for support are, the more easy they will be to track (domestically and internationally) and assess for both adequacy and equity. Also, crucially, it is far more difficult to discount *specific* demands as 'arbitrary' or 'non-climate related'.

**Treat (unsupported) domestic action and international support (or supported action) as tightly bound aspects of a single national action**. Particularly in the context of the netzero 2050 strategy, in which all countries are being encouraged to pursue the same or very similar decarbonization targets, it is essential to shift the framework of assessment, particularly for wealthy countries, from one that spotlights only their domestic action to one that includes their support of international action. Such a shift has been common in civil society assessment for years (e.g., the Climate Equity Reference framework, the Civil Society



Equity Review) but it could very usefully go mainstream. It is in any case important that it be properly considered in the GST, or at least in the iGST.

**Include both public and private finance in global accounting:** The lack of sufficient public climate finance is now an existential danger. Many observers have strained to gloss it over by arguing that the main focus of the finance discussion should be investments and their redirection. However, this isn't enough. The larger finance challenge – support for transformational resilience building and disaster management – cannot be focused on private financing for techno-economic and infrastructural change, which is not even an adequate lens for the consideration of the mitigation challenge. Public finance, and international public climate finance in particular, must get real attention in the GST process.

**Establish transparent and comparable reporting of public finance for climate action**. The long years that passed trying to establish clarity on the \$100 billion goal offer a fine example, not least because the confusion was not accidental. Studies and their methodologies vary, and some are obviously bogus, such that "indeterminacy and questionable claims make it impossible to know if developed nations have delivered" (Roberts et al. 2021). This situation can be remedied, but only if transparent and comparable processes for tracking support are used.

**Explore innovative finance pathways in a serious manner.** The climate community must quickly internalize the key economic lesson of the pandemic mobilization – governments can and should create money when emergencies require that they do so. An integrated approach to a post-pandemic, climate-adapted global economic recovery could include providing additional liquidity in the form of (reformed) Special Drawing Rights (SDRs) or even "Carbon Quantitative Easing". There are all sorts of possibilities here, extending far beyond the traditional remit of the UNFCCC. At the very least it's necessary to immediately explore measures designed to increase the capital available to developing country governments by controlling flows of capital or regulating illicit financial flows; providing debt relief, and so on.

**Establish equity and human-rights safeguards for market-based mechanisms** to be used for mitigation, adaptation, and loss and damage. These would include guidelines for all Article 6 activities, including carbon trading (including REDD+), all adaptation investments, and all insurance mechanisms. Such safeguards would include guidelines for the reporting of all finance released and received.

### What "outside" strategies could help generate momentum on support?

While some of the necessary international support can be secured through the UNFCCC process, many aspects of the support challenge extend beyond the confines of the UNFCCC both in terms of the types of activities and the range of actors involved. That said, there is a crucial need to establish links between a GST process and outside efforts, and to allow these efforts to push the UNFCCC process towards greater ambition.

The precise language of the Paris Agreement is relevant here, because it is difficult to imagine any successful path forward in which we do not achieve a new finance narrative, and that narrative, inescapably, is going to be based on interpretations of Paris. In particular, the tension between Article 9.3 and Article 2.1(c) deserves real and focused attention. In Article 9.3, developed countries, by way of a process that "should represent progression beyond previous efforts" are to "take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels". In Article 2.1(c), it is declared that one of the overall objectives of the Paris Agreement is "making financial flows consistent" with the demands of the larger climate transition, notably including "climate-resilient development".

These are very different views, and the tension between them must be alleviated without deprecating the importance of public finance. More precisely, those with a 2.1(c) world view of consistent finance flows think and talk in largely domestic terms, and often advocate loan-based instruments, while those with a 9.3 worldview tend to think and talk in international terms, and often advocate grant-based public finance (Zamarioli et al., 2021).

What's the way forward? There must be many. Once immediately pressing equity issue is that loans, even highly concessional ones, must by their nature be repaid, and this, for a very great variety of reasons, is simply not going to work. There must be debt holidays, and debt forgiveness, and there will not be large-scale climate action without them.

With respect to the GST itself, and the narratives that spring up around it, some very specific points must be stressed. One is that Article 2.1(c) should not be read in isolation, but rather in the context of the Article 2.1 chapeau, which very clearly states that the Article 2.1(c) reference to financial flows must be understood in the context of the Paris Agreement's purpose of enhancing the implementation of the UNFCCC "in the context of sustainable development and eradication of poverty". Additionally, and this is a point of enduring importance, Article 2.1 is not stand-alone, but must be read together with Article 2.2 in that its implementation (and hence its interpretation) reflects equity in general and, specifically, the challenges of "common but differentiated responsibilities and respective capabilities".

In this context, the climate regime must also be understood as a key aspect of the larger global political economy. Some key ways that 'outside' strategies could help generate momentum on support:

**Identify Opportunities for Systemic and Structural Change:** Global disparities are rooted in systemic and structural divisions, often excluded from the sphere of climate negotiations. These are in many ways the residues in historical power imbalances (e.g., colonization, post-World War II reconstruction, the hyper-globalization of the past three decades) that must be examined and addressed as part of any meaningful equity and development discussion. Systems and regimes for global trade, taxation, debt, illicit financial flows, speculative asset-driven investment, intellectual property, capital flows, monetary policy, intellectual property,



and development cooperation/financing all have impacts that can either increase or decrease the ability of developing countries to undertake climate actions.

**Define non-state actor obligations and needs:** Non-state actors have been increasingly important for climate action; they also have a key role to play in terms of equity. It would be helpful to articulate the obligations of non-state actors (e.g., sub-national governments, corporations, philanthropies, member organizations), such that their actions are made transparent and trackable. This could be particularly important when it comes to assessing the roles of major corporations. As matters currently stand, the actions of non-state actors are likely to be missed in country-level submissions and in the GST. In addition, many non-state actors play a central role in domestic transformation, they may also have concrete needs (i.e., civil society organizations, universities, etc.).

**Request all actors to identify and document needs in comparable ways**: In recognition that needs assessment, particularly for adaptation and loss and damage, are likely essential if support requests are to be made concrete, the research community must be encouraged to conduct in-depth and comprehensive needs assessments that can be integrated to develop solid requests for support. In light of uneven access to the human and financial resources needed to do these assessments, there is a role for a range of actors (including universities, academics, civil society, philanthropies) to play in ensuring such work is conducted and accounted for in forums such as the IPCC so that it can be utilized by countries in demanding support moving forward.

# V. Capacity Building

Capacity building is hardly a new concept. People have been talking about it for decades. But in truth this has often been lip service, mentioned along with technology and finance, but always as a poorer cousin. The centrality of its role is not always appreciated. In particular, it's necessary to stress that capacity is necessary for equity. This is true in two ways:

- If we do not have the capacity to achieve effective climate action, we will fail. This
  failure will be unjust, for it will impose enormous burdens, particularly on those people
  who are already suffering development deficits. Insufficient capacity, and insufficient
  capacity mobilization, are central to continued inequalities across multiple dimensions
  including access to decision-making power and material benefits from resources.
- 2. We also need a great deal of capacity to engage effectively in both global and national discourses, processes, negotiations, and actions—the very ones that are essential to

act effectively in response to the climate crisis. The issue here is not just the capacity to engage in effective climate action, but also the capacity to think through the challenges and refrain from ineffective climate action. The road to equity really does go through capacity. You cannot ignore the issues here and expect an equitable climate transition.

But what kind of capacity are we talking about? It has, arguably, three dimensions:

- The capacity to **understand the nature of the climate challenge**, in all its essential and necessary details, across sectors and across groups.
- The capacity to **think through possible responses**, and to then act effectively and **well**, in ways that do not perpetuate or intensify existing inequalities. Neither the effectiveness nor the equity of the regime can be improved without sustained capacity mobilization and capacity building.
- The capacity to **learn**, and to make necessary course corrections. When we talk about climate transition, we really mean a set of interlinked and simultaneous transitions, whether in the energy sector or the agricultural sector, and we really don't know the optimal path in advance. The dynamic context, and the capacity to understand it, becomes absolutely important.

Capacity, in other words, is not the ability to implement someone else's agenda but **the ability to set and pursue your own agenda** and, in that sense, it should be a core element of any development narrative.

Capacity building, sometimes referred to as capacity development, should start first with assessing and mobilizing existing capacities, as a minimum level of capacity may be available in any existing context. Ubels et al. (2010) argued that capacity development is literally enhancement in capacity over time and in that sense is an indigenous and continuous/spontaneous process." (Sokona 2021)

Capacity building has long been a domain of loose talk and loose thinking, but there is nothing vague or unimportant about identifying critical needs, and ensuring that they can be met in complex, evolving contexts where the challenges sometimes intersect in surprising and unanticipated ways.

The question is how to engender this whole set of competencies. All sorts of activities are required, from skill-building in education and training programs, to financial and knowledge resource provision, to the cultivation of whole social sectors – civil society groups or academic institutions or even competent state actors – and also ensuring that they can work together in ways that allow for effective knowledge transfer, effective kinds of coordination and



cooperation, and successful outcomes. None of this is simple, yet no effective climate transition is possible without it.

All of this is relevant to the GST, for it is exactly these sorts of capacities that allow us to take thoughtful and insightful approaches to planning, and then to assessment processes. This is true in at least two ways. They allow countries to form clear plans, and once they understand their own capacity gaps and needs, it allows them to clearly and precisely articulate thematic demands for support. This is key to "making support concrete," which is crucial in all sorts of ways. In particular, once these clear articulations have been made, support becomes much more trackable in terms of both relevance and adequacy, and much less likely to be co-opted and bent to donor agendas.

This kind of capacity allows developing countries, in processes like the GST, to clearly state their needs and desires, and to see how far they have or have not been met. Being able to request and track specific forms of support will highlight developing countries as the central participants in the capacity-building process rather than mere recipients, and will increase their ability to hold those providing support accountable. It also will allow developing countries to understand better how to utilize their own resources also for capacity-building, which will contribute further to the effectiveness of international support on this front.

# VI. Extraction or "Supply-side" equity

A major point reiterated throughout this report is that the politically- and practicallyconstrained scope of the GST neglects many issues that are central to the feasibility of making timely progress toward the objectives of the Paris Agreement. One fundamental area in which this is true is the management of the supply side of the global decarbonization transition – that is, the ultimate phasing out of fossil fuels as an energy source, part and parcel of which is addressing the multiple equity-related challenges associated with this phase-out.

As the 2021 Production Gap Report made clear, the global fossil-fuel supply pathway is even further off course than the global emissions pathway suggested by the NDCs. Globally, we are on track to expand oil, gas, and coal production to a level twice what is required for a 1.5°C pathway. The curve needs to be sharply shifted. In its ground-breaking *Net Zero by 2050: A Roadmap for the Global Energy Sector*, the IEA states "Beyond projects already committed as of 2021, there are *no new oil and gas fields approved* for development in our pathway, and *no new coal mines or mine extensions are required*." This is as unequivocal a statement of the importance and urgency of rapid, wholesale transformation of the fossil fuel supply sector.

The equity concerns of this transformation will be experienced to varying degrees by a wide range of people, including both the positive and negative consequences, and a rapid phase-down will create both winners and losers. The consequences include impacts to:

- Provision of domestic energy resources both to meet basic energy needs and fuel industrialization
- Availability of employment employing a significant share of workers in some countries or regions
- Sufficient public revenue for social services often minor, but an overwhelmingly dominant portion of public spending in some countries
- Ecological resources and affected communities often including environmental degradation that can undermine livelihoods, or oppressive and violent systems of extraction.
- Broader macroeconomic activity economic drivers of upstream and downstream economic activity, but also Dutch disease and other dimensions of a "resource course".

While fossil fuel producing countries differ in important ways along countless dimensions, we propose two general characteristics – *dependence on extraction* and *capacity to transition* – as useful for distinguishing different groups of countries:

Dependence on fossil fuel extraction, and vulnerability to transitional disruption: Fossil fuel producing countries vary considerably in the extent to which they depend on fossil fuel production, and in the degree of disruption they could face during a very rapid phase down. Even if a low-carbon economy might ultimately generate many benefits (such as a net job increase, cleaner air, or a more diverse economy), the transitional challenges can and sometimes will be enormous. The extraction - or the consumption, for that matter – of a ton of fossil fuel has very different welfare implications depending on where it takes place. Notably, the least marginal cost definition of "efficiency" that is nominally the gold standard for interpreting benefit-cost ratios, including those which purport to assess the transition away from fossil fuels, may not be a proper guide for maximizing social benefits. In particular, it largely ignores the social costs arising from a rapid transition away from fossil fuel production, such as the loss of a large portion of livelihoods in a fossil fuel-producing region with few immediately available near-term alternative livelihoods. These costs can be extremely high in poor nations already facing underemployment and fiscal constraints that make it difficult to provide a basic social safety net.



*Capacity to manage the challenges and support smooth transitions*: Countries also vary considerably in the extent to which they can bear the challenges of a transition, absorb the impacts, and support adjustment, diversification, retraining, reinvestment, etc.

These fundamental differences among countries (and regions within them) imply that the equity challenges for transition vary tremendously among countries, from those that are extremely dependent on fossil fuel production to those that could much more readily transition rapidly away. A fossil fuel phase-out that is consistent with the Paris temperature goals, and also with the broader Paris imperative that those goals be equitably met, would need to be grounded in some basic principles, which we summarize as follows.

- Phase down global extraction at a pace consistent with limiting warming to **1.5°C**... by limiting further production to less than ten years' worth of current annual fossil fuel production, which implies decreasing fossil fuel production by 6% per year between 2020 and 2030.
- Enable a just transition for workers and communities . . . by creating decent new jobs by investing in alternative sectors; retraining transition-affected workers; protecting the rights and income of workers and communities; and democratically engaging those stakeholders in the process of transition.
- **Curb extraction consistent with environmental justice...** by prioritizing extraction phase-outs where communities disproportionately experience the harms of extraction and not the benefits, such as where pollution undermines development. In cases where extraction violates people's rights, immediately reform or stop production.
- Reduce extraction fastest where doing so will have the least social costs... by accounting for countries' dramatically different levels of dependence on extraction and capacity to adapt and avoid disruption, and allowing countries at risk of greater disruption a longer period to phase out (within the overall constraints of the global carbon budget), and correspondingly less time for those most able to avoid socially costly disruption.
- Share transition costs fairly, according to the ability to bear those costs . . . by recognizing that a differentiated pace of phasing out extraction will not be enough to fully address equity concerns, and ensuring wealthier countries provide support to poorer countries to enable poorer countries to rapidly phase down fossil fuel extraction.

While a fully-fledged fossil fuel phase-out regime along the lines of this framework is not in the immediate offing, several initial indications of an appetite, or perhaps even an urgent

demand, for embracing fossil fuel controls into the broader climate regime are emerging. A few are the following:

- Countries are starting to announce and enact fossil fuel supply-side policies, and in some cases include them in their NDCs.
- There is now a <u>Global Registry of Fossil Fuels</u> being created, to fill the gap left by the absence of national fossil fuel supply data in submissions to the UNFCCC.
- The relevance and importance of international climate finance to support Just Transition actions has been recognized officially, most visibly in the <u>International Just</u> <u>Energy Transition Partnership</u> announced in Glasgow, which provides \$8.5 billion in support to South Africa to support a Just transition, although the details are as yet unspecified.

The latter, in particular, provides encouragement that the imperative of a fossil fuel phase-out is now not only being taken seriously, but in a way that acknowledges from the start the need for equity considerations to be a main driver of their form and content.

# VII. Unequal development in a climate constrained world

An astute observer will at this point perhaps notice that one equity challenge has, in all the above, been left entirely unremarked, and it is an enormous one indeed. In fact, the challenge of unequal development in a climate-constrained world is, arguably, *the* central challenge of the climate transition, the one that must be at least partially addressed by any climate transition regime that has at least a possibility of success.

We are, in this paper, going to say very little about this challenge, save to note its overarching definitional nature. In this regard, the key point is and has to be that the depth of global inequality really is quite staggering. One illustrative fact: Over the last 30 years, the years of the climate regime, during which global emissions grew by almost 60 percent, nearly half of that growth went towards supporting the growing consumption of the wealthiest ten percent of the global population, while about six percent of that growth went to supporting the growing consumption of the poorest 50% of the global population. More than anything, this goes to show that the rapidly accelerating growth in total emissions – and the attendant rise in climate crisis risks and damage – has categorically *not* been devoted to poverty alleviation. Again, nearly half of the emissions growth that has occurred since the signing of the Framework Convention on Climate Change has merely allowed the already wealthy to augment their consumption and enlarge their carbon footprints.

The point of this statistic is not just to illustrate the depth of global inequality, but also to argue that it reveals something fundamental about the very structure of the global economy. We often pretend that global economic growth (and resource use) can be justified in order to overcome poverty, when the actual activity of the global economy is overwhelmingly dedicated to the expansion of the consumption of the relatively wealthy.

What this tells us is that unequal development in a climate constrained world must – or, rather, overcoming the challenges of unequal development in a climate constrained world, as part of a climate transition that is fair enough to actually succeed, must – of necessity mean reforming the basic political-economic structures, such that they are no longer geared toward a planet in which development is structurally unequal.

And as the adaptation and loss and damage challenges painfully underscore, this structural inequality is only exacerbated by the changing climate, which only increases the obstacles facing poor communities and countries. This spotlights the point upon which we would like to end this survey – the real question must be what global development would actually look like if it were in fact structured to enable the substantive reduction of global poverty as part and parcel of the climate transition.

What does this imply for the Global Stocktake, and for independent stocktakes that seek to illuminate paths forward? Paths that must, of necessity, be both pragmatic and incremental and, at the same time, support large and catalytic changes in emissions rates? The answers are many and various, but all of them, to be useful, must at least nod to the fundamental matters that we have tried to spotlight here. Most importantly, and most challengingly, we must find ways forward that, implicitly if not explicitly, acknowledge the fundamental challenge of global inequality, which is expressed within the negotiations as the problem of differentiation in its broadest sense.

It is helpful, in the face of such overwhelming problems as these, to note that the great challenge of effort sharing is, in reality, a challenge of cooperation. Progress on differentiation would radically improve the prospects for cooperation and ambition, but it is similarly true that progress on cooperation for ambition would radically improve the prospects for a broader cooperation. The magic word here, if there is one, is trust, and here, as the Equity Working Group, we must very explicitly note that trust will not come from a realism that seeks to sweep aside the fundamental equity principle upon which the Framework Convention is founded, which are of course the principles of common but differentiated responsibility and respective capability.

Given the current weakening of both multilateralism and liberal democracy, it is easy to see why desperate men and women would want to dilute such challenging principles in favor of anodyne formulations like "shared responsibility", but it's not going to work, and continued efforts of this kind can only serve to undermine the fragile international trust that still remains. Our goal, as we move into the Stocktake years, has to be to solve the keystone problems of finance, without which no other solutions are possible. In this regard, we should not ask how to shunt aside the challenges of differentiation and inequality, as if we could, but rather if independent and informal approaches to those challenges can someone be made to supplement the limited stock takes that are possible within the formal process. To ask if informal processes can tread where the negotiations themselves cannot go.

# + 4. Towards Conclusions

The above discussion is hardly comprehensive. The equity challenges posed by the need to manage a very rapid and difficult transition in an extremely unjust world sprawl in all directions, and they sprawl, in particular, far beyond the terms of reference of the formal GST. Nevertheless, some points, if not actual conclusions, are now clear enough to highlight.

# I. Crosscutting points

- Inequity begets inequity, and absent explicit efforts to the contrary, *inequity cascades* could define the climate transition. This point cannot be overstated in a world as unjust as ours, it is only reasonable to fear disruptive transitions. Such fear will not always be justified, but the major socio-technical transition implied by rapid global decarbonization could easily hurt many people, if such hurt is not explicitly avoided. Nor is this an unfortunate second-order issue. As we face the emergency, a very high level of cooperation will be essential to success. Such cooperation will not be possible if the overall sense is one of a transition that is deepening, and even cementing, the inequities of the past.
- The Paris Agreement is an instrument of the UNFCCC, and the UNFCCC's conception of "common but differentiated responsibilities and respective capabilities" continues to characterize at least at the highest level the multilateral equity landscape. There are moves afoot to reframe the equity challenge in undifferentiated "shared responsibilities" terms (such moves were distressingly common in Glasgow) but this will not do, not if we actually intend to shape international equity into an instrument of global ambition. The proper terms of reference for the equity challenge are well established and well known, and they are embodied not only in the Paris Agreement's Article 14, but also in Article 2, which lays out Paris' ultimate goals, and indeed they are scattered throughout the Agreement, as they are rooted in the UNFCCC.
- The UNFCCC recognizes many dimensions of inequity as potential sources of worsening inequity in a disruptive transition – e.g., disparate levels of development, climate vulnerability, high indebtedness, gender disparities, etc. Further, the UNFCCC highlights specific principles aimed at avoiding inequitable disruption. These include not only "common but differentiated responsibilities" and the requirement that Parties act "on the basis of equity", but also explicit provisions aimed at operationalizing highlevel equity commitments, such as the obligation that developed countries "take the lead in combating climate change", provide financial and technological support, capacity building, etc. All this is key to the GST, for it has inherited these recognitions,

and not only by way of the requirement that progress toward the Paris goals be assessed "in the light of equity".

 Also, and importantly, there are many aspects of international climate equity that are not explicitly or adequately encompassed within the UNFCCC's principles and provisions, but which are nevertheless essential to the success of the climate transition. This sprawl, which has been noted above, is the nature of the case. And in its context, trust is very low. As low as inequality is high.

# **II. Specific points**

#### Mitigation

- Rapid decarbonization is a defining equity issue for two reasons. First, there can be no real justice if we allow the crisis to escalate into planetary catastrophe. Second, the impacts of climate destabilization are sharply inequitable in their distribution.
- Rapid decarbonization will be impossible unless the effort to achieve it is shared fairly, and seen as being shared fairly. This means that nations (and actors within nations) must undertake efforts at a scale at least plausibly consistent with the demands of justice, which can and will be debated in terms of equity principles and their quantitative implications. This means many things. One of them is that high capacity, high responsibility countries must act very strongly in the short term – universal, longterm (e.g., 2050) net-zero targets will only be achievable if such countries translate them into immediate (e.g., 2030) targets.
- Mitigation entails much more than technological transition. It encompasses skillbuilding, institutional development, human and financial resource investment, policy development and implementation, industrial policy, and the deliberate politicaleconomic realignments needed to prevail against obstructionism and achieve these outcomes, including within the relevant multilateral and international regimes like WTO, bilateral trade agreements, and so on. The challenges here demand, but don't reduce only to, the redirection of private investment flows.
- The climate equity challenge is inherently global, and while the climate negotiations are of necessity negotiations between states, the global challenge cannot be forgotten. Fair shares of mitigation effort, like fair shares of adaptation and loss and damage effort (see below), cannot be taken to refer simply to the amount of domestic mitigation a country undertakes. They inherently demand that the amount of transition support a country provides to other countries also be taken into account. (Support further discussed below.)



#### Adaptation

- Poor and vulnerable people are everywhere, and a proper approach to adaptation must take this into account. To meaningfully assess progress toward a global goal on adaptation, we must discard the fictions that tell us that adaptation can be conceived as a specific response to a well-bounded "environmental problem", or that adaptation can or should be conceived of as entirely domestic. Vulnerability and adaptation are so intrinsically linked with development itself that effective adaptation for a vulnerable community in essence *requires* effective development. Similarly, any Global Goal for Adaptation is also a Global Goal for Development.
- These simple truths have huge implications for adaptation in practice. First and foremost, effective adaptation is virtually unimaginable in a world as materially and socially unequal as ours, with poor households and communities struggling against climate impacts even while they continue to fight for food security, health care, reliable livelihoods, and other basic needs, and to secure basic human rights. Again, this sprawl is the nature of the case.

#### Loss and Damage

- Loss and damage are not explicitly referenced in Paris' Article 14, but after COP26 it is obvious that it cannot and will not be ignored by the GST. It is also obvious that the loss and damage challenge is unbounded, and that it spotlights the potentially unbounded nature of historical responsibility (witness the liability issue). Even very practical and pragmatic estimates of the global loss and damage need, as noted above, are denominated in terms of hundreds of billions of dollars a year.
- How will these issues make their way into the formal negotiations? We shall see, but it's worth noting that the associated debate will co-evolve in time with the GST, and perhaps even overshadow it. Meanwhile, it's important to consider the mechanisms by which a loss and damage fund could be provisioned, and how they could be made to "automatically" replenish such a fund. This is a decisive question, and it immediately takes us beyond loss and damage, for it is also strongly relevant when it comes to the challenges of (just) mitigation and adaptation finance.

#### Support and Finance

 The tendency to reduce debates about international cooperation and effort sharing to debates about money is an unfortunate one, but the fact remains that financial resources are by far the most salient form of support that arises in climate discussions. Here, any studiously brief summary is glaringly inadequate, and we advise readers who wish to understand our view to review the more detailed discussion above, which is structured around three key questions:

- How much and what kind of support is needed? For what? How, in particular, could additional support accelerate the drive for adequacy?
- How could adequate support be facilitated by the GST and other assessment processes? What are the big issues that need to be explored?
- Given the limitations of the GST, what "outside" strategies could help to generate momentum on finance and support?
- Structurally and politically, the key to a breakthrough on international support may lie in resisting numerical reductionism. Hundreds of billions in public funds, and trillions in private funds, are going to have to be annually mobilized if we are to achieve a successful climate transition, but the key to this mobilization does not lie in repetition of ever-larger numbers. A better strategy would be to face the reality of the effort before us, and then to move on to concrete discussions about the specific political and institutional innovations that will be necessary if we are to move, in time, and on the necessary scale.
- Who should pay, and how? And for what? And by way of which institutions? And how can adequate support be facilitated by the assessment we hope to receive from the GST? These have long been the questions, but it is time now to make them more concrete, which can be done by *making the practices of support more concrete*. Countries should be as specific as possible about the amount and kind of support they need. If they are, the GST can then collate and track these requests (made for example in NDCs) so that assessments can be generated and improved over time. The underlying principle here is that the more concrete support needs can be made, the harder they will be to deny, and the easier they will be to track, and to assess for both adequacy and equity.

#### Capacity Building

- Capacity building is hardly a new concept. People have been talking about it for decades. But in truth this has often been lip service, mentioned along with technology and finance, but always as a poorer cousin. The centrality of its role is not always appreciated, yet it is absolutely if reasonably equitable forms of mobilization (the only ones that can succeed) are to be possible.
- In particular, nations need the capacity to engage effectively in both global and national discourses, processes, negotiations, and actions, the very ones that are essential to act effectively in response to the climate crisis. The need here includes the capacity to think through challenges, to refrain from ineffective climate action, and to take thoughtful and insightful approaches to planning and assessment processes, which are of course clearly relevant to stock takes like that envisioned by the GST.

 Nations need the ability to form clear plans, for it is only when they understand their own capacity gaps and needs that they clearly and precisely articulate thematic demands for support. This is key to "making support concrete," which is crucial in all sorts of ways. In particular, once clear articulations have been made, support not only becomes more trackable and assessable, but it also becomes much less likely to be co-opted and bent to donor agendas.

#### Extraction or "Supply Side" Equity

- As the 2021 Production Gap Report made clear, the global fossil-fuel supply pathway is even further off course than the global emissions pathway suggested by the NDCs. In its ground-breaking Net Zero by 2050: A Roadmap for the Global Energy Sector, the IEA states "Beyond projects already committed as of 2021, there are no new oil and gas fields approved for development in our pathway, and no new coal mines or mine extensions are required."
- Taken together, and joined with a growing avalanche of case studies and analysis, these two reports have erected an unequivocal case for the importance and urgency of rapid, wholesale transformation of the fossil fuel supply sector. Here the equity challenges become altogether undeniable, a point that *A Fair Shares Phase Out*, the 2021 report of the Civil Society Equity Review, has made a great effort to stress.
- These challenges, too, are difficult to briefly summarize, and again we refer the reader to the above discussion. We also note that the "phase-out" vs. "phase-down" standoff that occurred in COP26's closing plenary placed the difficulties of supply-side equity firmly onto the political agenda. There is much to say here, but one point in particular must be emphasized our nations have widely varying *dependence* on fossil energy, and in particular the revenues that flow from fossil energy; this combines with their unequal development to create a tremendous and highly differentiated extrication problem, one that will not be solved unless differential national capacity it put front and center.

# **III. Concluding points**

We noted above that inequity begets inequity, and that, absent explicit efforts to the contrary, such inequity cascades will define – and undermine – the climate transition. The problem is that the specific structure of our civilization, one we've summed up (see the above discussion) under the heading "Unequal development in a climate constrained world", makes such inequality cascades extremely threatening.

The reality here is usually taken as too obvious to mention, but at a certain point, this becomes a mistake. For our world is fundamentally defined by unequal development, by rich and poor

and North and South, and it is precisely because of this that the very rapid and disruptive transition that is now so necessary threatens us with seemingly impossible deadlocks. A very rapid phaseout of coal would seem, to many powerful Indians, to promise only catastrophe, and yet it must happen. And the same can be said about oil and powerful Americans. And so on. The challenges abound.

It is a cliché to compare the international climate challenge to a Gordian Knot, but this does not necessarily mean we should stop doing so. Clichés often reference essential truths; indeed this is the source of their popularity, and of their endurance.

The question behind this paper, a question we believe we have clarified but not answered, is what the GST, and independent processes designed to shadow and buttress the GST, can do to unravel the climate tangle. It's an incredibly important question, though at the same time the image of the Gordian Knot – which could not be unraveled, but only cut – cautions against too high a confidence in any incremental unraveling.

That said, we cannot stop trying. Multilateralism proceeds by negotiation, one step at a time, and does not expect to cut across an intractable problem in one fell swoop. That said, there are moments when major moves are necessary. This is, clearly, one of those moments, and the moves in question clearly have a great deal to do with equity.

In any case, some sort of bold stroke is clearly in order.

# + References



Al-Zahrani, H., Q.-M. Chai, F. Sha, Y. Osafo, A. S. de Oliveira, A. Tripathi, H. Winkler, and V. P. Yu (2019). *Ensuring an operational equity-based global stocktake under the Paris Agreement.* South Centre. ISSN 1819-6926. Available at: <u>https://tinyurl.com/y2vm4ga6</u>

Agarwal, A. & Narain, S. (1991). *Global Warming in an Unequal World: A Case of Environmental Colonialism*. Centre for Science and Environment.

Athanasiou, T. (2021a). Biden's Climate Agenda—What's Missing? *Foreign Policy in Focus*. May 10, 2021. Available at: <u>https://fpif.org/bidens-climate-agenda-whats-missing</u>

Athanasiou, T. (2021b). Equity and fair shares in a net-zero world. *Yale Climate Communications*. July 14 2021. Available at: <u>https://yaleclimateconnections.org/2021/07/equity-and-fair-shares-in-a-net-zero-world</u>

Civil Society Equity Review. (2021). A Fair Shares Phase Out: A Civil Society Equity Review on an Equitable Global Phase Out of Fossil Fuels. CSO Equity Review Coalition. Available at: <a href="https://www.civilsocietyreview.org/report2021">www.civilsocietyreview.org/report2021</a>

Coninck, H. & Sagar, A. (2015). *Technology in the 2015 Paris Climate Agreement and beyond. Innovation and IP: Issue Paper No. 42.* International Centre for Trade and Sustainable Development <a href="https://www.tralac.org/images/docs/9128/technology-in-the-2015-paris-climate-agreement-and-beyond-ictsd-october-2015.pdf">https://www.tralac.org/images/docs/9128/technology-in-the-2015-paris-climate-agreement-and-beyond-ictsd-october-2015.pdf</a>

Dubash, N., Pillai, A. V., & Bathia, P. (2021). *Building a Climate-Ready Indian State: Institutions and Governance for Transformative Low Carbon Development*. Initiative for Climate, Energy, and Environment at the Centre for Policy Research. Available at: <u>https://cprindia.org/briefsreports/building-a-climate-ready-indian-state-institutions-and-governance-for-transformative-low-carbon-development</u>

Dubash, N., Winkler, H., & Rajamani, L. (2021). Developing countries need to chart their own course to net zero emissions. *The Conversation*, May 4, 2021, Available at: <a href="https://theconversation.com/developing-countries-need-to-chart-their-own-course-to-net-zero-emissions-159655">https://theconversation.com/developing-countries-need-to-chart-their-own-course-to-net-zero-emissions-159655</a>

Fleurbaey, M., Kartha, S., et al. (2014). Chapter 4: Sustainable development and equity. In: *Climate Change 2014: Mitigation of Climate Change*. Contribution of IPCC Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Available at: <a href="http://www.ipcc.ch/report/ar5/wg3">http://www.ipcc.ch/report/ar5/wg3</a>

Friedrich, J. (2017). Global stocktake (Article 14). In Daniel Klein et al. (Ed.), *The Paris Climate Agreement: Analysis and Commentary*. Oxford University Press.

Gupta, J. & Arts, K. (2017). Achieving the 1.5°C objective: Just implementation through a right to (sustainable) development approach. *International Environmental Agreements,* vol. 18: 11–28. Available at: <u>https://link.springer.com/article/10.1007/s10784-017-9376-7</u>

Holz, C. & Ngwadla, X. (2016). *The Global Stocktake under the Paris Agreement: Opportunities and Challenges*. European Capacity Building Initiative. https://ecbi.org/sites/default/files/GST\_2016%5B1%5D.pdf Holz, C., Athanasiou, T., & Kartha, S. (2019). *Equity in the Global Stocktake and Independent Global Stocktake*. Climate Equity Reference Project. Available at: <u>https://www.climateworks.org/wp-content/uploads/2020/05/Equity-in-the-Global-Stockate-and-Independent-Global-Stocktake iGST\_CERP.pdf</u>

International Energy Agency. (2021). *Net Zero by 2050: A Roadmap for the Global Energy Sector*. International Energy Agency. Available at: <u>https://www.iea.org/reports/net-zero-by-2050</u>

Klinsky, S., Timmons Roberts, J., Huq, S., Okereke, C., & others (2017). "Why equity is fundamental in climate change policy research". *Global Environmental Change*, vol. 44:170-173. Available at: <u>https://doi.org/10.1016/j.gloenvcha.2016.08.002</u>

Oxfam International. (2021). Poorer nations expected to face up to \$75 billion six-year shortfall in climate finance. September 20, 2021. Available at: <u>https://www.oxfam.org/en/press-releases/poorer-nations-expected-face-75-billion-six-year-shortfall-climate-finance-oxfam</u>

SEI, IISD, ODI, E3G, & UNEP. (2021). *The Production Gap Report 2021*. http://productiongap.org/2021report

Rajamani, L. (2017). Guiding Principles and General Obligation (Article 2.2. and 3). In Daniel Klein et al. (Ed.), *The Paris Climate Agreement: Analysis and Commentary*. Oxford University Press.

Smith, K. & Hayes, P. (1993). The Global Greenhouse Regime: Who Pays? Routledge.

Sokona, Y. (2021). Building capacity for 'energy for development' in Africa: four decades and counting. *Climate Policy*. 2021 Jan 25;1–9. Available at: <u>https://doi.org/10.1080/14693062.2020.1870915</u>

Standing Committee on Finance. (2021). *First report on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement*. UNFCCC Standing Committee on Finance. Available at: <u>https://unfccc.int/sites/default/files/resource/54307\_2%20-%20UNFCCC%20First%20NDR%20technical%20report%20-%20web%20%28004%29.pdf</u>

Ubels, J., Acquaye-Baddoo, N., & Fowler, A. (2010). Capacity Development in Practice. Routledge.

Winkler, H., et al (2018). Countries start to explain how their climate contributions are fair: more rigor needed. *International Environmental Agreements: Politics, Law and Economics,* vol. 18(1): No. 7, 99-115. https://econpapers.repec.org/article/sprieaple/v\_3a18\_3ay\_3a2018\_3ai\_3a1\_3ad\_3a10.1007\_5fs10784-017-9381-x.htm

Winkler, H. (2020). Putting equity into practice in the global stocktake under the Paris Agreement. *Climate Policy*, vol. 20(1):124-132 <u>https://doi.org/10.1080/14693062.2019.1680337</u>.

United Nations Environment Program (2021). *Adaptation Gap Report 2021*. Available at: <u>https://www.unep.org/resources/adaptation-gap-report-2021</u>

Zamarioli, L.H., Pauw, P., König, M., & Chenet, H. (2021). The climate consistency goal and the transformation of global finance. *Nature Climate Change*, vol. 11(7):578–583. Available from: <u>http://www.nature.com/articles/s41558-021-01083-w</u>



