

CHAPTER 11

Inclusive green finance

149

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1 INTRODUCTION

Against the backdrop of the impending climate and biodiversity crises, a growing number of central banks and financial supervisors have recognised the need to address environmental risks through their prudential policies, and to scale up green finance to support the transition to a sustainable and resilient economy. Environmental risks, and climate risks in particular, have been recognised by central banks and financial supervisors as a material risk to the stability of individual financial institutions and the financial system at large (NGFS 2019, Bolton et al. 2020).² Green finance comprises two key areas: (1) the financing of adaptation investment and insurance solutions that enhance resilience to environmental change; and (2) investment in mitigation action, including investment in renewable energy, low-carbon infrastructure and energy efficiency.

For a much longer time, central banks and supervisors have worked on promoting inclusive finance. Inclusive finance policies aim to promote access to affordable financial products and services to households and businesses that otherwise would be excluded. These are usually poorer households at the base of the economic pyramid and micro, small and medium-sized enterprises (MSMEs), as well as underprivileged groups such as women and youth.

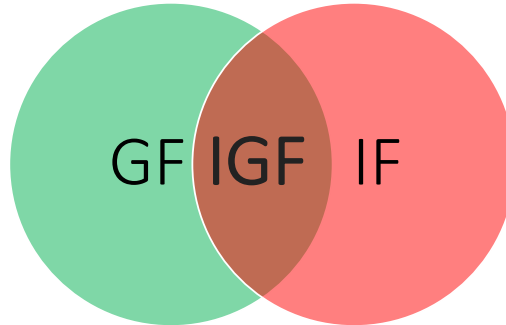
To date, green finance and inclusive finance have been treated in the academic and policy literatures mostly as two distinct, largely unrelated concepts. Likewise, in practice, central banks and financial supervisors have mostly handled green finance and inclusive finance as two separate agendas, often with different teams working on these issues. However, as will be shown in this chapter, there are meaningful overlaps between the two, as the key target groups for inclusive finance tend to be disproportionately exposed to the risks and impacts of local and global environmental change, while also playing

1 This chapter originated from a joint project with the Alliance for Financial Inclusion (AFI) that led to a policy report on Inclusive Green Finance (Volz et al. 2020). The authors would like to acknowledge financial support from AFI, and would like to thank Johanna Nyman, Laura Ramos and Jeanette Moling for excellent cooperation and very helpful comments. Any errors or shortcomings of this chapter are those of the authors alone.

2 The NGFS (2020: 9) defines climate-related risks as “financial risks posed by the exposure of financial institutions to physical or transition risks caused by or related to climate change, for example, damage caused by extreme weather events or a decline in asset value in carbon-intensive sectors.” Environmental risks are defined by the NGFS (2020: 9) as “financial risks posed by the exposure of financial institutions and/or the financial sector to activities that may potentially cause or be affected by environmental degradation (such as air pollution, water pollution and scarcity of fresh water, land contamination and desertification, biodiversity loss, and deforestation) and the loss of ecosystem services.”

an important role in mitigating environmental change.³ This chapter hence calls for a holistic approach that links green and inclusive finance policies into an integrated inclusive green finance (IGF) approach (Figure 1).

FIGURE 1 OVERLAPS BETWEEN GREEN FINANCE (GF) AND INCLUSIVE FINANCE (IF)



This chapter discusses challenges and opportunities related to developing IGF approaches. It highlights the importance of social risk and equity concerns in devising green policies and outlines how IGF can be instrumental for a just transition to a sustainable economy. Moreover, the paper draws on Volz et al. (2020) and Volz and Knaack (2022) to present a framework for policy approaches on how to leverage IGF for climate change adaptation and mitigation. It also reflects on how IGF-related policies could contribute to a sustainable recovery after the global pandemic and help countries meet commitments made under the Paris Agreement and the Sustainable Development Agenda.

The remainder of the chapter is structured as follows. Section 2 surveys the literature to examine the theoretical and empirical linkages between environmental sustainability, poverty alleviation and social inclusion, and the role of finance in addressing these goals. Section 3 presents a policy framework for IGF and corresponding policy efforts by regulatory authorities in emerging markets and developing economies (EMDEs). The chapter concludes with a discussion of policy options for incorporating IGF in a sustainable post-Covid recovery.

3 Global environmental change comprises climate change, stratospheric ozone depletion, changes in ecosystems due to loss of biodiversity, changes in hydrological systems and the supplies of freshwater, and land degradation, among others.

2 CONCEPTUALISING INCLUSIVE GREEN FINANCE

There are multiple ways in which environmental sustainability and the reduction of environment-related financial systemic risk – the main goals of green finance – and poverty alleviation and social inclusion – the main goals of inclusive finance – are connected. In the following, we distinguish three main linkages:

1. Environmental degradation and climate change place a higher burden on poorer, more vulnerable groups – the role of inclusive finance in enabling **adaptation**.
2. Reducing environmental degradation and mitigating climate change requires the involvement of all parts of the economy – the role of inclusive finance in enabling **mitigation**.
3. Social risks threaten a successful transformation to a low-carbon, environmentally sustainable economy – the role of IGF in facilitating a **‘just transition’**.

While climate change affects humanity as a whole, it is expected to have significantly negative impacts on people at the base of the economic pyramid. A significant proportion of low-income households live in less-favoured agricultural areas and low-elevation coastal zones at greater risk from climate change and its effects (Barbier and Hochard 2018). At the same time, households at the base of the pyramid have fewer resources available to protect themselves against adverse shocks (Hallegatte et al. 2016). Unequal exposure to environmental risks threatens to fuel a vicious cycle, whereby vulnerable parts of the population suffer disproportionately from the adverse effects of climate change, thus further exacerbating social inequalities (Islam and Winkel 2017). Climate change has deleterious consequences not only for households but also for firms, especially for MSMEs and for firms in EMDEs (Kling et al. 2021).

Financial services can play a key role in empowering vulnerable parts of the population to adapt to climate change, but only if they are accessible, useful and well-designed. Traditional financial services have often failed to meet those standards (Collins et al. 2009). The track record of traditional inclusive finance efforts is mixed, but the digital financial revolution of the 2010s promises to upend the old economics of financial inclusion. In particular, mobile network operators and BigTech firms have extended digital financial services through extensive agent networks and affordable mobile phones, exploiting platform economics, artificial intelligence and big data analytics in ways that traditional providers cannot (Osafo-Kwaako et al. 2018, Frost et al. 2019).

Digital person-to-person payments have shown previously unexpected benefits in increasing climate resilience, especially for low-income households and MSMEs. Field research in Kenya and elsewhere has revealed that mobile money lowers transaction costs for domestic remittances and thus allows households to weave a wider net of informal insurance and risk sharing (Jack and Suri 2013, 2014, 2016, Bharadwaj et al. 2021). When faced with droughts, flooding or other extreme weather events, for example,

households in need of financial support can reach out to friends and family near and far for emergency transfers, rather than having to decrease consumption or sell assets (Jones and Gong 2019, Wakadha et al. 2013).

This interpersonal safety net of diffuse reciprocity is complemented by that provided by governments. Here too, digital financial technology can increase efficiency and facilitate access to hard-to-reach parts of the population. In India, replacing indirect or in-kind social transfers with direct payments to bank accounts and associated debit cards was key in reducing leakage from imprecise beneficiary targeting and corruption, saving the government an estimated \$7 billion over 2.5 years alone (Pazarbasioglu et al. 2020). In Fiji, the government has leveraged digital financial services in the aftermath of Tropical Cyclone Winston, sending transfers directly to the mobile phones of recipients in the disaster zone (AFI 2020).

Financial policymakers have recently turned to digital finance to enhance resilience of the population to a non-environmental shock, namely, Covid-19 and the economic fallout it caused. As early as April 2020, regulators in Kenya and 13 other EMDEs ordered firms to waive transaction fees for low-value mobile money transactions and increased transaction caps and storage limits on e-wallets (GSMA 2020, Njogore 2020). The Bangladeshi government harnessed digital finance for its Covid-19 relief efforts by channelling unconditional cash transfers in April 2020 through mobile financial services, reaching millions of workers in the informal sector that would be hard to reach with traditional policy tools (Islam and Divadkar 2020).

Beyond payments, digital financial services providers can promote climate resilience by offering better savings products, insurance and credit. Traditionally, low-income households would invest a part of their savings in livestock or crops, which are vulnerable to environmental disasters. Financially included households can access savings more safely and conveniently to enhance their resilience vis-à-vis economic shocks caused by climate change or other forces. Digitally powered microinsurance can incorporate meteorological information and geospatial data to facilitate premium payments and disbursements at low cost, allowing vulnerable populations to better manage climate risk (Microinsurance Network 2017). Low-income households and MSMEs can leverage microcredit to reduce their sensitivity to natural disasters, better cope in their aftermath (Pantoja 2002, Dowla 2018), and invest in adaptation options such as climate proofing crops, arable land and buildings (Fenton et al. 2017). Nevertheless, responsible financial access remains a concern (Izaguirre and Mazer 2018, Kaffenberger et al. 2018, Bharadwaj et al. 2019, Gwer et al. 2019).

While digital financial services promise to alleviate financial exclusion and reduce vulnerability to climate risks, policymakers must remain aware of inequities in access. Even though the widest observed gender gaps are beginning to close, climate finance needs to be gender-inclusive in order to deliver on its promise to enhance resilience and facilitate adaptation for those who need it most.

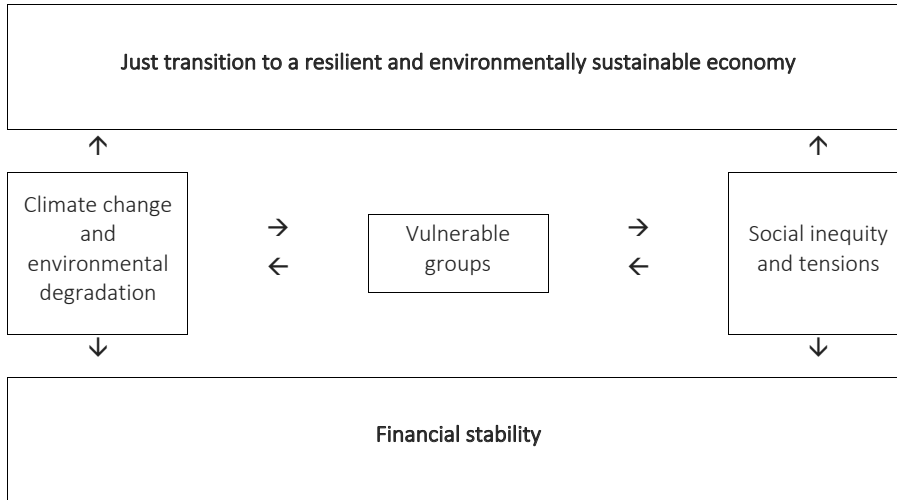
While adaptation is a key priority to increase the resilience of vulnerable populations vis-à-vis climate change, it needs to go hand in hand with mitigation measures that reduce global warming and environmental degradation. Even though the bulk of greenhouse gas emissions are not coming from MSMEs, they tend to operate in sectors that are energy-intensive and in need of technological change for climate change mitigation (UNDESA 2020).

Even when technological change is cost-saving for MSMEs in the medium or long run, many businesses do not have the financial tools at their disposal to stomach the significant upfront investment in low-carbon technology. Here, financial inclusion can make a clear difference. For example, in Kenya, the pay-as-you-go product M-Kopa harnesses mobile money transaction data to allow qualifying business owners to lease and eventually own solar panels to power their shops (Costa and Ehrbeck 2015, Omwansa and Sullivan 2013). Similar pay-as-you-go financing schemes have helped MSMEs transition to more climate-friendly technologies of energy and water provision across sub-Saharan Africa and beyond (IRENA 2020, Sharma 2019).

Inequality and social tensions may be exacerbated both by the economic and social effects of climate change and the transition to a low-carbon, environmentally sustainable economy (Semieniuk et al. 2021). For example, the forced decline of carbon-intensive parts of the economy can cause transitional unemployment and ‘stranded workers’ who may not be easily re-employed (Heim 1984). The 2018 ‘*gilets jaunes*’ (yellow vests) protests in France in response to climate policies that were felt as placing an unfair burden on lower income groups have highlighted the importance of placing greater emphasis in climate policies on equitable and inclusive policies. Here, inclusive finance can help to empower the base of the economic pyramid to be a driver of transition, thus making it ‘just’. This specifically relates to MSMEs and the business opportunities arising from a transition.

The links between climate change and environmental degradation, vulnerable groups, social inequity and tensions, and financial stability are further elaborated in Volz et al. (2020) and Volz and Knaack (2022) and summarised in Figure 2. As discussed, climate change and environmental degradation can have immediate impact on vulnerable groups and vice versa. By threatening the livelihoods and assets of vulnerable groups, climate change and environmental degradation can have adverse impacts on social equity and contribute to intra-society conflicts and tensions. Social inequity and exclusion from economic opportunities limit the capacity of vulnerable groups to protect themselves from the effects of environmental change. Although not a panacea, IGF can play an important role in supporting vulnerable groups in adapting to global environmental change and strengthening their resilience. Likewise, IGF can facilitate mitigation action of vulnerable groups while supporting their economic opportunities. Moreover, the physical impacts of (unmitigated) climate change, as well as disruptions caused by a disorderly transition, pose material risks to financial stability. Central banks and supervisors therefore need to address both environmental and social risks to the stability and functioning of the financial system through prudential policy and by supporting IGF.

FIGURE 2 THE LINKS BETWEEN CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION, VULNERABLE GROUPS, SOCIAL INEQUITY AND TENSIONS, AND FINANCIAL STABILITY



Source: Volz et al (2020).

3 A POLICY FRAMEWORK FOR INCLUSIVE GREEN FINANCE

Financial regulators, supervisors and government finance executives have various tools at their disposal to turn the concept of IGF into actionable policies. In harnessing the synergies between green finance and financial inclusion, they can help improve the livelihood of low-income households and the business prospects of MSMEs, while simultaneously contributing to climate change adaptation and mitigation. This section lays out the key elements of a policy framework for IGF. A more encompassing development of this framework along with a wealth of policy examples can be found in Volz et al. (2020).

Scaling up IGF has two main policy purposes as discussed in Section 2: adaptation and mitigation. When approaching the spectrum of financial inclusion policies that serve green purposes, it is useful to distinguish between direct and indirect measures. The latter are designed to shape the market in ways that let private actors develop and offer services that increase financial inclusion. Rather than intervening directly, the state lays out market rules and incentive structures that guide business operations in a desirable direction. In contrast, direct interventions encompass all policies where the state is the protagonist, dedicating its own capacities and budgetary resources towards fostering financial inclusion, or requiring financial institutions to support specific activities. Implementing effective IGF policies along these lines reveals a 2x2 matrix (Figure 3) that can help policymakers to structure and sharpen their thinking about this important new policy area.

FIGURE 3 A POLICY FRAMEWORK FOR INCLUSIVE GREEN FINANCE

		Inclusive finance	
		Market-shaping policies	Direct interventions
Green finance	Adaptation to environmental change & enhancing resilience	Implement regulatory enablers for mobile money, microinsurance and other resilience-supporting (digital) financial services. Enact ESRM guidelines that incorporate environmental and social risks. Awareness-raising and capacity building measures for financial institutions. Green finance taxonomies for MSMEs and smallholder farming. Consumer protection, awareness-raising and capacity-building measures for vulnerable end-users.	(Digital) cash transfers to disaster affected. Subsidies or guarantees for credit to invest in adaptation / resilience-enhancing activities. Directed credit / sectoral credit targets.
	Mitigation of environmental change	Regulatory enablers for Pay-as-you-go solar and water. Prudential rules that incentivise credit to green MSMEs or sustainable agriculture. Enact ESRM guidelines that incorporate environmental and social risks. Awareness-raising and capacity-building measures for financial institutions. Guidance and incentives for inclusive green FinTech innovation.	Subsidies or guarantees for credit to invest in new resource-efficient / low-carbon practices / technologies. Directed credit / sectoral credit targets.

Note: ESRM = environmental and social risk management.

Source: Volz et al. (2020).

Market-shaping policies for IGF are designed not just to prepare the private sector to offer financial services for green projects that also support vulnerable groups, but to also create the right incentive structures as businesses compete in delivering those services. Financial inclusion can enhance resilience and adaptation in the ways outlined in Section 2, but only if and when policymakers implement regulatory enablers to a thriving market in digital payments, mobile money, and the second- and third-generation services that build on this infrastructure. Financial inclusion experts have distilled years of policy research to identify four regulatory enablers that are key for digital financial services to thrive: non-bank e-money issuance, use of agents, risk-based customer due diligence, and consumer protection (Staschen and Meagher 2018). The latter is particularly important

for vulnerable populations: unfettered growth of a poorly regulated digital financial services market can leave economic agents exposed to monopoly pricing and predatory lending on top of environmental degradation, rather than increasing their resilience and adaptive capacity.

Similarly, policymakers can harness market forces to overcome the financing bottlenecks that prevent many economic agents from investing in climate change mitigation. For example, they can provide an enabling environment for the market entry of pay-as-you-go providers of climate-friendly technologies, which low-income households or MSMEs would not otherwise be able to afford. Moreover, regulators can adjust prudential risk weights in ways that incentivise lenders to provide credit for green products and services. Along the same lines, regulators in Nepal, Paraguay and elsewhere have enacted environmental and social risk management (ESRM) guidelines to proactively assess and address the environmental and social risks of financing decisions, steering them away from environmental degradation and towards greener, socially beneficial economic activities. Since 2014, Bangladesh Bank, for example, requires commercial banks to dedicate at least 5% of their loan portfolio to green projects.

There is a thin but conceptually relevant line between this kind of regulatory treatment and *direct intervention* in the market. In many jurisdictions, the executive branch of government provides the authority (and budget) for such direct interventions, whereas central banks and regulatory authorities tend to focus on market-shaping policies under their prudential supervisory mandate.

The primary government policy to enhance the resilience of populations vulnerable to the impacts of environmental change is to weave a social safety net that can encompass a variety of transfer schemes. Governments can also foster IGF by providing subsidies or guarantees for credit to activities that help vulnerable populations adapt and enhance their resilience to environmental change. Credit guarantees in Nigeria and Ghana, for example, are designed to secure credit to smallholder farmers subject to climate risks. The State Bank of Pakistan, among others, offers concessional loans for solar and wind energy projects through its refinancing facility. Regulators in Sri Lanka, Vanuatu, Fiji and the Philippines have established special credit facilities for post-disaster recovery (Volz et al. 2020). Policymakers have the opportunity to explore a self-reinforcing cycle here: state support and preferential rates for green financing make financial access attractive for hitherto excluded populations, and growing financial inclusion can help the government cast a wider net to steer the economy towards environmentally sustainable activities.

4 THE ROLE OF INCLUSIVE GREEN FINANCE IN SUPPORTING SUSTAINABLE RECOVERIES

The Covid-19 crisis has highlighted how vulnerable the global economy is to natural disasters. At the same time, it has shown that people can harness financial services, especially in digital form, to better deal with adversity and economic hardship. Mobile money payments surged across sub-Saharan Africa as friends and families supported each other during the lockdowns caused by the pandemic (Carboni and Bester 2020, Njogore 2020). Governments around the world took advantage of previous financial inclusion efforts as they channelled emergency support transfer to vulnerable populations using branchless agent banking networks and digital channels. These financial networks between individuals and between people and the government can be expected to be as useful in enhancing resilience and supporting recovery after future natural disasters as they have been during the pandemic.

While the global pandemic has helped to spur financial inclusion, it has also provided an urgent reminder that much more work remains to be done. Financial networks can only be leveraged meaningfully for recoveries if all vulnerable populations have access. There is a risk that policymakers, in the wake of a climate-related crisis, become reticent to reach the financially excluded, because directing emergency funds through digital financial networks can be so much more cost-effective than alternative channels. Such behaviour would exacerbate existing inequalities along the lines of income, education, gender and location because financially excluded parts of the population are also likely to be those most in need of state support in the wake of a natural disaster.

By exploring the synergies between green finance and financial inclusion, policymakers have the opportunity to direct financial flows in ways that (1) address equity concerns and (2) facilitate a transition to a low-carbon economy, all while (3) safeguarding financial stability. Only when financial policy reflects and incorporates all three of the above goals can economic recovery become a catalyst in a larger process of a just transition to an environmentally sustainable economy.

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