ADAPTATION GOVERNANCE: CHALLENGES IN INTERNATIONAL TRADE AND FINANCE

V

A. Introduction

In recent *Trade and Development Reports*, UNCTAD has outlined the case for a Global Green New Deal to tackle the multiple challenges facing the international community. At its heart is the call for a massive and coordinated investment and jobs push for a cleaner and more efficient global energy system. But as with its erstwhile namesake, this recovery strategy for the planet is linked to regulatory and redistributional measures which should also assume a global dimension. These include measures (and related institutional reforms) aimed at curbing the undue power and predatory practices of large financial and non-financial corporations, reducing the wealth and income inequalities that have created fragmented societies and distorted economies, and ensuring that resilience to unforeseen shocks is guaranteed for the many, not just the privileged few.

The previous chapters of this *Report* explained that at the national level, pursuing a Green New Deal requires recovering policy options (and the space to implement them) lost to the undue reliance on market forces. During the last forty years, two key assumptions have guided economic policy in many countries: first, that the private sector is uniquely placed, and should be left alone, to boost national incomes through its focus on cost competitiveness, guided by market efficiency, and second, that fiscal austerity is the best tool available to policymakers to correct macroeconomic imbalances that might alter market outcomes.

As a result, the global economy has been fundamentally transformed, shrinking the public space while unleashing the forces of financialization and rentierism. It has not, however, delivered the promise of a more vibrant, inclusive and stable economic system. This failure has been particularly evident with respect to investment, both public and private, where the trend, in many countries, has been stagnation or decline over this period, while a prolonged disconnect between wage and productivity growth in most countries, along with the degradation of public services, has produced widening socio-economic gaps (*TDR* 2017, 2020).

The unprecedented government response to the pandemic is an implicit recognition that both the need and the room for a policy shift is greater than previously acknowledged. Chapter II offered a series of lessons that should guide policy forces, beyond the context of the current crisis and recovery. Among these, the recognition that "no one is safe until everyone is safe" speaks directly to the extension of the resilience challenge to climate adaptation.

But there are significant differences across countries in their capacity to respond to that challenge. In particular, the pandemic has exposed the gulf between developed and developing countries when it comes to the space they have to mobilize the resources needed to respond to unforeseen shocks. This has unavoidable implications not only for a big investment push into new sources of energy, but also for their capacity to respond to the growing threat from rising global temperatures.

The intensification of climate threats facing developing countries is not of their own making. Given this history, as well as the tight external constraints

on their efforts to mobilize resources, they cannot be expected to put their own house in order without significant financial and technological support from the international community. As noted in Chapter III, the principle of common but differentiated responsibilities is intended to ensure that advanced countries provide that support, commensurate with the economic benefits they have reaped from pumping two centuries' worth of greenhouse gases into the atmosphere. The best vehicle for mobilizing and coordinating that support remains the multilateral system.

Previous *Reports* have stressed that the current multilateral architecture will need to undergo reforms to be able to address the multiple crises facing developing countries, in the time frame, and with the ambition, that has been set by the international community. In part, this means getting the institutions established in the years between 1944 and 1947 back to what their original designers intended (Gallagher and Kozul-Wright, 2021). Yet even assuming we are in "a Bretton Woods moment" (Georgieva, 2020), this cannot be an exercise in simply winding the clock back, given the weaknesses and asymmetries in the original design (particularly on matters of economic development). In 2021-22, creating a new multilateralism for shared prosperity is just as, and arguably even more, demanding a task than it was at the end of the Second World War. The global economy is now larger, more complex and fragile; the competing demands for resources are greater; and the voices that have to be listened to, in particular from the developing world, are more diverse.

Building back better will require a rethinking of public policy at the national level, along with a renewal of public institutions and a revitalization of the social contract, combined with new principles of cooperation and leadership at the global level. Strengthening the ambition and capacities of the developmental state is, as discussed in the preceding chapter, a necessary condition for developing economies when undertaking the structural changes needed to build resilience, without exacerbating the climate crisis and causing further environmental damage. But developing countries need collective support at the international levels to complement and bolster their domestic efforts at resource mobilization. Progress on both fronts, can, if effectively coordinated, advance an agenda that works for all people and the planet.

This chapter analyses two major multilateral areas of the climate adaptation challenge: international trade rules and the financial system. As explained earlier in this *Report*, climate adaptation has been overshadowed by commitments to climate mitigation and reduction targets for greenhouse gas emissions. This asymmetry has been replicated in the wider trade and financial architecture, which have not delivered the opportunities and funding needed for a resilient, and climate conscious growth in developing economies. Existing rules and principles do not accommodate the technological, economic and financing needs of developing economies facing the adaptation challenge. Below we review these challenges and mechanisms in detail, and outline proposals for policy changes.

B. Climate adaptation and the international trading system

With a shrinking timeline to stabilize the climate and advance the SDGs, all countries should find ways to both promote and discipline trade and investment in line with their Paris Agreement commitments and with the principle of common but differentiated responsibilities. But many of the initiatives that are gaining momentum in the reform of the international trading system continue to adhere to a lopsided liberalization agenda. This agenda has thus far neither delivered on the promise of development nor been associated with reduced emissions. Pursuing it further is likely to undermine any notion of a just transition by disadvantaging developing countries that have least responsibility for climate-related damages.

1. Trade and environment in the WTO and other trade agreements

Issues around trade and environment have again gained momentum in the World Trade Organization (WTO) since November 2020, when a group of 23 members (EU as one of them) initiated 'trade and environmental sustainability structured discussions' (TESSD) with an intention to report concrete deliverables, initiatives and next steps to the ministers at the 12th Ministerial Conference.[1] Since then, in various meetings, proposals have been tabled on liberalizing trade in environmental goods and services; reforming environmentally harmful subsidies; carbon border adjustment mechanism

and climate actions; and circular economy and biodiversity.[2]

The Preamble to the Marrakesh Agreement emphasizes the need for "…expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development."[3]

In line with this objective, paragraph 31 (iii) of the Doha Ministerial Declaration called for negotiations on "the reduction or, as appropriate, elimination of tariffs and non-tariff barriers to environmental goods and services"[4] and paragraph 32 called for particular attention to be given to the effect of environmental measures on market access of developing and least-developed countries, aiming at a triple win situation beneficial to trade, environment, and development.

Formal negotiations on a plurilateral Environmental Goods Agreement were launched at WTO in July 2014 but only two developing countries joined these negotiations, which stalled in 2016. Some of the reasons for developing countries not joining the negotiations included a missing development dimension, the inclusion in the lists of goods with multiple non-environmental uses that primarily supported the export interests of developed countries, and the fear that trade liberalization discriminates against their products based on non-environmental and social concerns (Khor et al., 2017; de Melo and Solleder, 2020).

Outside of the WTO, climate concerns have been reflected in the trading system primarily as non-binding sustainability chapters in bilateral or plurilateral trade agreements. These chapters have arguably had limited impact on encouraging climate action (Lowe, 2019) but mainly helped to secure the regulatory advantage of wealthy regions as global standard-setters (Goldberg 2019). The 2021 G7 Trade Ministers' communiqué also included the commitment to "make trade part of the solution" to climate change, in particular highlighting environmentally destructive agricultural practices and the issue of carbon leakage whereby high-emitting industries move operations from regions with stricter regulation to those with lower standards, undermining the goal of reducing global greenhouse gas emissions (G7 Trade Ministers' Communiqué, 2021). Preventing carbon leakage has been high on the agenda of advanced economies, due to concerns that their higher environmental standards provide an unfair trade advantage for countries with less strict environmental regulation, and they have been demanding to 'level-the-playing-field' (United States Congress, 1992). One such measure is the proposed carbon tariff or Carbon Border Adjustment Mechanism (CBAM), which has been under consideration in the United Kingdom, the United States, and Canada, and is already part of the European Union's flagship policy in aligning trade and climate, i.e., the Green Deal (European Commission, 2021).

The G7-communiqué also highlighted the trade ministers' united position against 'unfair trade' and 'non-market policies and practices' including industrial subsidies and forced technology transfer, even though these same countries have used these policies in their own successful development process. The G7 has also called for an overhaul of the principle of special and differential treatment (SDT), essentially calling for a contraction in privileges with more targeted and specific measures. SDT was adopted to allow developing countries to benefit from non-reciprocal tariff reductions and granted some special rights and privileges to them to mitigate the disadvantages they face in the international trading system and to help them with implementing multilateral trade agreements (Kozul-Wright et al., 2019). With developing countries standing on the edge of another lost decade in the aftermath of the pandemic, it is a clear contradiction for the world's most advanced economies to restrict what policy space is available to them through SDT or industrial policy tools while expecting them to meet increasingly demanding climate goals.

These more recent unilateral proposals were preceded by the beginning of negotiations of a plurilateral Agreement on Climate Change, Trade and Sustainability (ACCTS) which has brought together six 'first-mover' countries (Costa Rica, Fiji, Iceland, New Zealand, Norway, and Switzerland) to build momentum around aligning trade and climate issues. While these negotiations are ongoing and have not yet resulted in a formal trade agreement with enforceable rules and regulations, they signal the approach that these countries plan to take on trade and climate, namely reducing tariffs on environmental goods and services, eliminating fossil fuel subsidies, and

developing guidelines on voluntary eco-labelling schemes.[5]

2. Carbon border adjustment mechanism in the era of global value chains

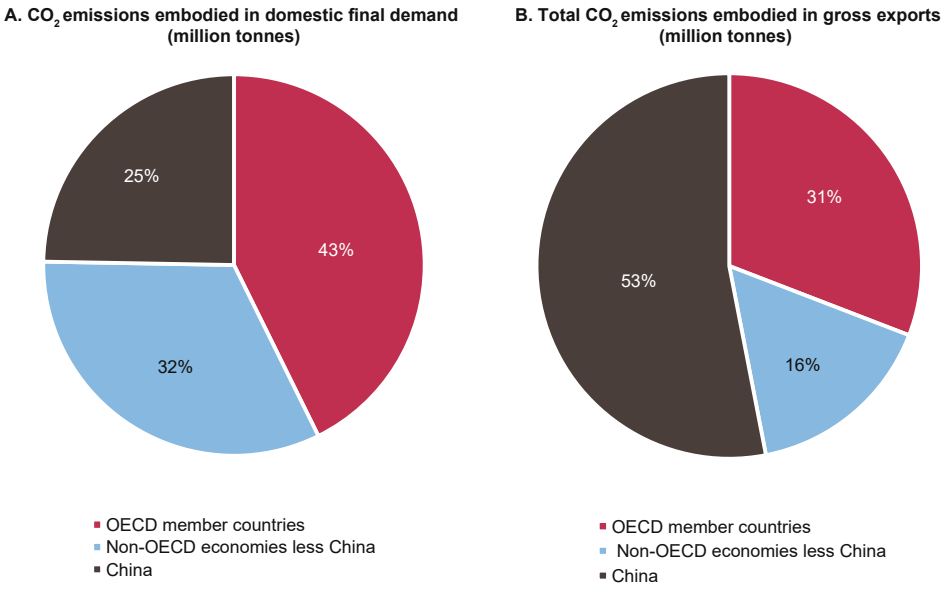
The interconnectedness of the global economy and the fragmentation of production process make it difficult to gauge any specific country's carbon footprint accurately because a sizable share of CO_2 emissions in developing countries are generated in the production of consumer goods for developed countries. The organization of global production through global value chains (GVCs) has led to many carbon emitting production activities to be shifted to developing countries, while associated low-carbon pre-production and post-production activities have been retained in developed countries (*TDR 2018*). The comparative energy efficiency in the North is therefore closely linked to the energy inefficiency in the South.

According to data on the amount of carbon emissions embodied in final demand and international gross trade published in Yamano and Guilhoto (2020) for 65 countries and the period 2005–2015, of the total global CO_2 emitted in 2015, around 27 per cent is linked to international trade and concentrated in seven industries (mining and extraction of energy producing products; textiles, wearing apparel, leather and related products; chemicals and non-metallic mineral products; basic metals and fabricated metal products; computers, electronic and electrical equipment; machinery and equipment; and motor vehicles, trailers and semi-trailers). These are also the industries with a higher proportion of trade through GVCs. An analysis of these data reveals three additional features.

First, the share of non-OECD countries in global CO_2 emissions embodied in global domestic final demand and in global gross exports is 57 per cent and 69 per cent, respectively. However, removing China's share (25 per cent) from non-OECD aggregates makes the share of non-OECD decline to 32 per cent in CO_2 emissions embodied in global final demand, i.e., below that in the OECD countries (43 per cent). Similarly, the share of non-OECD countries less China in CO_2 emissions embodied in global gross exports is almost half of that in the OECD countries, i.e., only 16 per cent as compared to 31 per cent (Figure 5.1).

Second, average per capita CO_2 emissions based on production declined over the period 2005–2015 in OECD countries, but remained much higher than those in the non-OECD countries in 2015. Most of the developed economies like Australia, Canada, European Union, Germany, Japan, and the United States, have higher CO_2 emissions per capita

FIGURE 5.1 **CO_2 emissions in domestic final demand and gross exports, OECD and non-OECD countries, 2015**

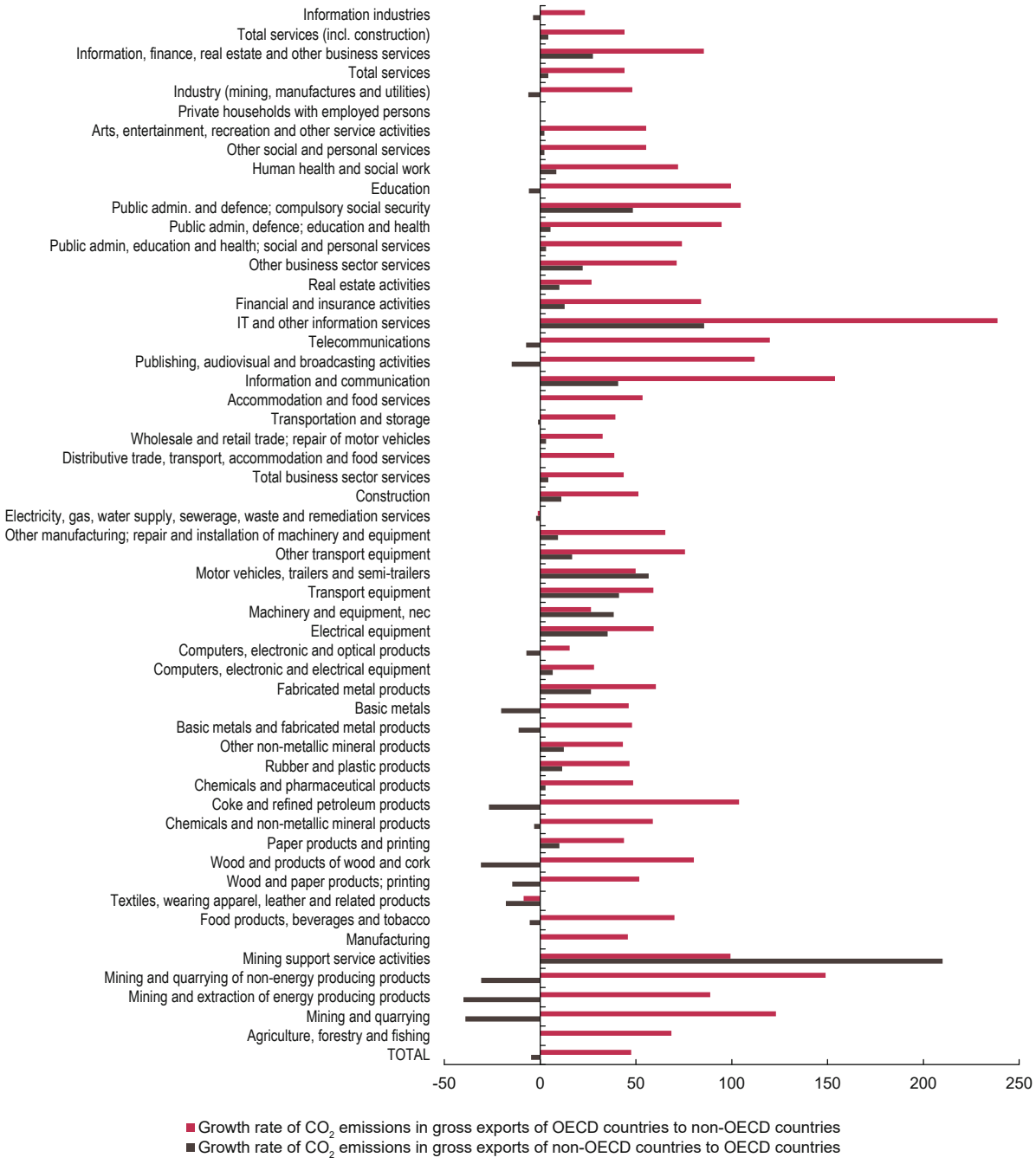


Source: UNCTAD secretariat calculations, based on OECD, https://www.oecd.org/sti/ind/carbondioxideemissionsembodiedininternationaltrade.htm.

compared to developing countries like China, India, Indonesia, and Malaysia.

Third, CO_2 emissions in gross exports of OECD countries to non-OECD countries have grown much faster than the CO_2 emissions in their imports from non-OECD countries in the period 2005–2015. This trend is consistent across almost all industries and services (Figure 5.2). The fact that despite their lower emission levels, CO_2 emissions in the gross exports of OECD countries have grown faster than CO_2 emissions in their gross imports, is indicative of the growing inter-connectedness in the global economy which makes it impossible to disentangle high-carbon and low-carbon emitters in global value chains.

FIGURE 5.2 Growth in CO_2 emissions in gross exports and gross imports of OECD-countries from non-OECD countries, 2005–2015
(tonnes, millions)



Source: See Figure 5.1.

At the same time, should carbon border adjustment mechanisms actually be implemented, much of their impact on structural transformation in developing countries will depend on their detailed technical specifications, with one of the major legal challenges being to make these mechanisms compatible with WTO rules. Yet, independent of these details, the principle on which these mechanisms are based is to impose on developing countries the environmental standards that developed countries are choosing. This goes against the principle of common but differentiated responsibility enshrined in the Paris Agreement. Moreover, should the revenues from these mechanisms be used in developed countries, rather than invested in climate adaption in developing countries, they would turn basic principles of climate finance on their head.[6]

In this context, it is notable that "[s]ince 1995, carbon emissions embodied in trade have been increasing both in absolute value and as a share of global emissions. However, the volume of global trade has grown more rapidly than carbon emissions embodied in it" (OECDb, 2019: 10).

In 2015, CO_2 emissions embodied in international trade (8.8 Gt) as a share of total global emissions was only 27.2 per cent (Yamano and Guilhoto 2020). This indicates that carbon emissions generated to produce goods and services consumed domestically comprise a much higher share in global carbon emissions than those that are internationally traded. National policies for climate adaptation can therefore play a much greater role than international trade policies. Nevertheless, proposals have been advanced by some of the developed countries to liberalize trade in environmental goods and services (e.g. WTO, 2021).

3. Push to liberalize environmental goods and services

The Combined List of Environmental Goods (CLEG) that was elaborated by OECD (2019b) provides the Harmonized System 6-digit level codes of 248 environmentally related goods. In 2019, the top ten exporters of these goods were the European Union followed by China, the United States, Japan, the Republic of Korea, the United Kingdom, China Hong Kong SAR, Singapore, Canada and Switzerland with a combined share of 88 per cent of global exports (Table 5.1), most developing countries were net importers of these products.

Tariffs on these environmentally related goods are on average 5 to 6 per cent in developing countries with maximum tariffs exceeding 100 per cent on some products, while they are below 1 per cent in most developed countries (OECD, 2019). For example, passenger motor vehicles (HS code 8703.90) are also listed in CLEG as an environmental good, which is levied a tariff of 125 per cent in India, 100 per cent in Pakistan, 80 per cent in Nepal and 51 per cent in Egypt.

TABLE 5.1 Top exporters of environmentally related goods

	Exports (mn $)	*Share in total exports (percentage)*
European Union (EU27)	510 210	38.8
China	279 877	21.3
United States	106 252	8.1
Japan	85 738	6.5
Republic of Korea	46 524	3.5
United Kingdom	36 760	2.8
China Hong Kong SAR	27 282	2.1
Singapore	26 360	2.0
Canada	20 440	1.6
Switzerland	17 847	1.4
Memo item: Total of the above	1 157 290	87.9

Source: UNCTAD secretariat calculations, based on World Bank *World Integrated Trade Solution (WITS)* database, and United Nations *Comtrade* database.

In 2019, tariff revenue collected on these goods by developing countries amounted to $15 billion (using applied duties). Trade liberalization in these products will therefore entail a substantial loss of tariff revenue for developing countries. This may have substantial adverse effects especially now when domestic sources of finance are urgently needed both to fight the Covid-19 pandemic and address climate change. Table 5.2 presents estimated annual tariff revenues in these products for 99 developing countries.

While there is no consensus on what goods should be included in the list of environmental goods, environmental services were already classified for the negotiations on the General Agreement on Trade in Services (GATS). Negotiations on environmental services have traditionally taken place under the Council for Trade in Services focusing on sewage services, refuse disposal services and sanitation services, which are listed in the environmental services sector of the Services Sectoral Classification List (GATT, 1991). However, there are attempts to widen the scope of environmental services to include services like engineering, architecture, design, general management, construction (OECD, 2017). Any

TABLE 5.2 Tariff revenue from environmental goods, developing economies, 2019

	Weighted average tariff rate	*Maximum tariff rate*	*Imports of environmental goods ('000 $)*	*Tariff revenue ('000 $)*		*Weighted average tariff rate*	*Maximum tariff rate*	*Imports of environmental goods ('000 $)*	*Tariff revenue ('000 $)*
Algeria	10.2	60	5 936 180	606 678	Lao PDR	0.3	20	651 445	2 150
Angola	3.3	50	1 680 473	55 120	Lebanon	3.4	20	693 714	23 517
Anguila	14.7	20	8 979	1 323	Lesotho	0.2	30	283 544	482
Antigua and Barbuda	10.9	35	55 488	6 065	Macao	0.0	0	187 547	0
Argentina	9.8	35	6 292 625	619 194	Madagascar	5.7	20	191 376	10 889
Armenia	2.9	15	301 507	8 804	Malawi	4.6	25	82 154	3 763
Aruba	11.6	50	70 954	8 195	Maldives	20.9	400	312 341	65 217
Azerbaijan	5.3	15	1 569 400	83 649	Mali	8.2	20	168 101	13 734
Bahrain	3.2	5	1 407 649	44 341	Mauritania	8.8	20	184 151	16 224
Bangladesh	8.0	25	2 349 383	187 246	Mauritius	0.5	30	348 394	1 881
Belize	7.3	45	59 056	4 287	Mongolia	5.0	20	493 144	24 559
Benin	7.6	20	100 845	7 614	Montserrat	10.5	35	3 859	403
Bhutan	1.1	100	63 192	695	Morocco	2.1	25	3 199 868	68 157
Bolivia	2.9	20	1 624 712	46 629	Myanmar	1.3	30	995 940	12 648
Botswana	1.4	30	266 854	3 816	Namibia	0.7	30	373 416	2 689
Brazil	10.5	35	15 557 060	1 630 380	Nauru	10.5	30	5 024	529
Brunei	0.0	5	900 181	270	Nepal	9.6	80	465 351	44 813
Burkina Faso	8.1	20	179 222	14 535	Nicaragua	1.5	15	311 005	4 789
Burundi	8.9	35	16 597	1 472	Niger	9.2	20	86 909	7 987
Cameroon	13.9	30	316 419	44 014	Oman	2.1	5	3 522 949	73 982
Cape Verde	6.1	40	58 834	3 589	Pakistan	11.5	100	4 220 456	483 664
Chile	0.4	6	4 604 802	20 261	Palau	3.0	3	10 470	314
China	3.7	15	151 613 712	5 655 191	Papua New Guinea	1.9	25	409 901	7 870
Colombia	1.6	35	3 404 373	55 491	Paraguay	4.2	20	541 667	22 642
Comoros	12.2	20	2 706	329	Peru	0.1	11	3 055 895	2 139
Congo, Dem. Rep.	9.3	20	393 356	36 543	Philippines	1.2	30	8 667 970	104 016
Cook Islands	0.0	0	8 580	0	Qatar	3.4	5	3 184 188	107 307
Costa Rica	0.8	14	993 988	8 151	Rwanda	6.4	35	306 986	19 524
Cote d'Ivoire	8.6	20	787 451	67 721	Sao Tome and Principe	8.8	20	4 248	372
Cuba	10.0	30	475 653	47 660	Senegal	8.5	20	680 144	57 948
Ecuador	6.8	35	1 419 910	96 128	Seychelles	0.0	25	105 682	0
Egypt, Arab Rep.	2.4	135	3 659 071	88 915	Singapore	0.0	0	25 144 184	0
El Salvador	1.4	30	509 218	7 180	Solomon Islands	8.1	15	26 787	2 156
Eswatini	0.4	30	9 9071	406	South Africa	2.1	30	5 633 598	118 869
Fiji	7.9	32	149 789	11 848	Sri Lanka	5.7	30	1 072 420	60 806
French Polynesia	5.0	13	99 797	4 990	St. Kitts and Nevis	11.9	45	19 830	2 354
Gabon	12.5	30	249 306	31 039	St. Lucia	5.5	50	50 521	2 784
Ghana	8.3	20	938 607	78 280	St. Vincent & Grenadines	8.7	35	21 893	1 900
Grenada	7.1	35	16 788	1 195	Suriname	6.3	30	155 882	9 852
Guinea	8.1	20	216 794	17 539	Taiwan, Prov. of China	2.0	18	17 070 441	334 581
Guinea-Bissau	8.8	20	12 872	1 134	United Republic of Tanzania	6.2	35	724 055	44 819
Guyana	6.1	45	220 345	13 529	Togo	12.6	20	136 060	17 184
Hong Kong, China SAR	0.0	0	30 341 851	0	Turkey	0.6	16	13 607 372	84 366
India	6.4	125	25 710 053	1 645 443	Uganda	6.1	35	426 025	26 158
Indonesia	1.6	50	15 567 797	244 414	United Arab Emirates	4.0	5	15 153 056	612 183
Iran, Islamic Rep.	12.4	55	5 207 631	643 142	Uruguay	6.3	23	496 472	31 178
Kazakhstan	1.4	15	7 748 942	106 935	Venezuela	11.4	26	282 817	32 241
Kenya	8.0	35	539 190	42 973	Vietnam	1.0	70	21 151 174	217 857
Kuwait	3.9	5	4 971 529	191 901	Wallis and Futura Isl.	0.4	10	2355	10
Kyrgyz Republic	2.6	20	237 716	6 157					

Source: UNCTAD secretariat calculations, based on World Bank World Integrated Trade Solution (WITS) database, and UN-TRAINS. Tariff revenue calculated on basis of applied duties.

resulting commitments in these services will take away the flexibility that the positive list approach in the GATS offered to the developing countries in terms of liberalizing their services trade. Furthermore, there is a risk that forcing liberalization of vital public utilities and bringing it under private sector can lead to negative development outcomes, because this creates an environment of conflicted interests, because public goods are delivered for profit. This will further restrict developing countries' ability to use public procurement as a policy tool to achieve social objectives.

4. Can international trading rules promote the circular economy?

Recently in the WTO, developed countries have been pursuing the narrative on 'circular economy' to gain market access into the developing countries. It has sometimes been argued that trade liberalization is indispensable to move towards a circular economy, particularly because trade restrictions in the form of export bans may hinder circular economy activities related to reuse, repair, refurbishment, remanufacturing and recycling (OECD, 2018).

Calls for the liberalization of trade in remanufactured or recycled goods and waste date back to 2004 when the issues of non-tariff barriers affecting trade in remanufactured goods such as medical and heavy equipment and motor vehicles and parts were first raised (WTO, 2004). Some of the non-tariff barriers identified at the time with respect to remanufactured goods were: requirements to provide a "refurbished certificate" signed by the consulate in the country of origin guaranteeing that the imported product is "like new"; prohibitions on imports of remanufactured goods if the equivalent goods are manufactured domestically or if they can be substituted for goods manufactured domestically; requirements that imported remanufactured goods meet a "special needs" test; and certification requirements from a chartered engineer that spare parts have at least 80 per cent of their original life remaining. To remove these restrictions and liberalize trade in remanufactured goods, some WTO Members proposed a Ministerial Decision on Trade in Remanufactured Goods in 2010 (WTO, 2010).

The proposed Ministerial Decision was rejected mainly because some developing countries raised concern about the possible adverse impacts of these imports on producers of new goods in their countries and on the transfer of new technologies. The danger was that second-hand, refurbished, or remanufactured goods may lock developing economies into outdated and less efficient technological solutions and therefore would delay the achievement of environmental goals (Steinfatt, 2020). Concerns were also raised on liberalizing trade in waste and scrap as that would put additional pressure on the waste management systems of developing countries, especially those which lack a sound regulatory framework for waste management and the associated infrastructure capacities. Developing countries argued that restrictions like export bans on metal waste and scrap were used to promote domestic processing and value added. Furthermore, imports of second-hand clothes and footwear were found to have significant negative impacts on the revamping of the textiles and leather industries, especially in Africa. They were also found to have adverse impacts on consumer health, human dignity, and culture (Wetengere, 2018).

While moving towards a circular economy is, therefore, vital to contain resource use and environmental degradation, there is little reason to combine the moves required to do this with trade liberalization. Instead, a circular economy may be best achieved through appropriate domestic regulatory policies, as discussed in the previous chapter.

5. The way forward on the trade and environment agenda

While climate adaptation remains a priority for developing countries, greenhouse emissions in traded goods and services account for only 27 per cent of global carbon emissions. This points to a rather limited scope for trade policy to contribute to a global green growth agenda, with trade policy only serving as a complementary tool for attaining environmentally sustainable growth. Rather than building a trade and environment agenda on trade liberalization, making the most of the coherence between special different treatment (SDT) and the UNFCCC principle of 'common but differentiated responsibilities' (CBDR) may offer a better point of departure for a development-oriented approach to the trade-climate nexus.

While SDT is designed to expand policy space for developing countries to tackle the specific challenges they face in integrating into the global trading system, CBDR recognizes that advanced economies bear most of the responsibility for historic emissions that have caused climate change, and therefore should shoulder most of the burden to respond to the

impacts of climate change and tackle its root causes. The convergence of SDT and CBDR, both of which acknowledge systemic asymmetries, leads to a vastly different agenda for aligning trade and climate. Such an agenda emphasizes the expansion of policy space for green industrial policy; the enhancement of flexibilities regarding the protection of intellectual property rights and of incentives fostering technology transfer for climate and environment-related goods; a strengthening of transition support for developing countries to accelerate the adoption of renewable energy sources; and an expansion of financial support that exceeds the $100 billion climate finance target agreed in the UNFCCC process for developing countries to meet climate goals.

(a) Expanding policy space for climate and development

A first step in aligning SDT and CBDR would be to widen non-reciprocal SDT measures to expand policy space for climate and development initiatives. A limited climate waiver of WTO trade and environment rules combined with a 'peace clause' for disputes on trade-related environmental measures of developing countries could be one route forward. A narrowly defined waiver and peace clause would give countries the assurance that they will not face disputes for climate and development-friendly initiatives such as prioritizing a transition to renewable energy, green procurement, and green jobs programmes – all initiatives that advanced economies are also prioritizing but that could be challenged under the WTO-dispute mechanism.[7]

While legal tools such as waivers and peace clauses will help diminishing the number of restrictive rules and the extent of regulatory chill, as well as expanding the policy space for developing countries, unilateral action in advanced economies can provide further room for maneuver. Incentive-based approaches, such as optional preference schemes that provide ringfenced climate financing additional to ODA or preferential market access in exchange for progress towards nationally determined contributions (NDCs), could accelerate climate action without recurring to punitive measures with anti-developmental effects.

(b) Climate and intellectual property rights

Recent evidence suggests that intellectual property rights protection does not promote the transfer of low-carbon technology (Pigato et. al. 2020), suggesting that an alleviation of intellectual property rights protection may be the best way to ensure global dissemination of low-carbon technologies. This calls for a multilateral arrangement that reflects the commitment to "shared responsibility" and makes low-carbon technologies widely accessible.

As a step towards such an arrangement, the international community could support initiatives to transform rules governing intellectual property rights, such as through a WTO Ministerial Declaration on TRIPS and Climate Change, with a view to expanding TRIPS flexibilities for developing countries in relation to climate-related goods and services. The Doha Declaration on the TRIPS Agreement and Public Health adopted by the WTO Ministerial Conference of 2001 reaffirmed flexibility of TRIPS member states in circumventing patent rights for better access to essential medicines. This could provide a basis for innovative mechanisms for promoting access to patent-protected critical green technologies. Other initiatives that could support this agenda include the open-sourcing of key green technologies as global public goods, South-South cooperation on low-emission research and design, and green investment strategies that include technology transfer.

(c) Climate finance and trade

Concerning the relationship between climate finance and trade, existing proposals for Carbon Border Adjustment Mechanisms (CBAMs) and tariff eliminations on environmental goods and services are likely to disproportionately impact resource mobilization in developing countries whose total economic output is currently more carbon-intensive than that in developed countries and for whom tariffs make up a greater proportion of government revenue. New financing support could be provided through a Trade and Environment Fund, as proposed by some WTO members (WTO, 2011). Such a Fund could finance the incremental costs of sourcing critical technologies, provide grants for specific green technologies, finance joint research, development and demonstrations, as well as the establishment of technology transfer centres, exchanges and mechanisms.

Should negotiations on carbon tariffs proceed at the WTO, it will be important to ensure that this issue remains in the multilateral rules-based system. No decision should be taken between smaller groups of developed economies, as this would risk further undermining the trust of other WTO members, particularly those impacted most, in the ability of the multilateral trading system and global climate

initiatives to support the achievement of developmental objectives.

While it is not clear whether currently considered forms of a CBAM would be compliant with WTO rules, any such mechanism will best serve the interests of global climate commitments and development goals if it includes a redistributive mechanism that redirects new tariff revenue to dedicated financing for green transitions in developing countries. Moreover, any imposition of tax or elimination of tariffs should be commensurate with the level of economic development, national objectives and needs of developing countries, and adequate transition periods should be built in that allow for phased implementation of obligations for developing and least-developed countries. But most importantly, any requirement for governments in the Global South should be contingent on the more effective policies outlined above regarding expanded policy space, enhanced intellectual property rights flexibilities and new sources of climate finance to avoid a catastrophic impact on development initiatives.

C. Financing Climate Adaptation: Issues, Instruments, Institutions

Facing up to the climate challenge, both mitigation and adaptation, requires an unprecedented degree of investment, on a global scale.[8] As noted in Chapter III of this *Report*, estimates converge around a global clean energy investment push in the range of 2–3 per cent of world output per year, and lasting well into the next decade, if the increase in global temperatures is to be kept to between 1.5 and 2 degrees. Assuming the transition will be a just one, which would include sufficient financing for adaptation purposes, then the higher end of that range would seem the appropriate target. This amounts to something in the order of $2.5 trillion per year. To put that into perspective, the OECD countries issued $18 trillion in debt in 2020 in response to the Covid-19 crisis.[9]

A study commissioned by the UN Environmental Programme (UNEP, 2020) estimates that the annual requirement for climate adaptation and resilience investments could vary between $140 and $300 billion by 2030 and $280–$500 billion in 2050. According to the World Bank, building climate-resilient infrastructure in the power, water and sanitation, and transport sectors in low- and middle-income countries will require between $11 to $65 billion a year by 2030 (Timisel, 2021: 3). At present, scaling up development finance is seen as a largely static reallocation exercise to direct existing financial resources (or savings) to meet the SDGs including for climate mitigation and adaptation. At the heart of this agenda is the idea that available public finance should be used to "leverage" international private finance, through blended financing instruments that allow investors to hedge against risk and, more generally, by "embarking on system-wide insurance and diversification of risk to create a large-scale asset class and mobilize significantly greater private sector participation" (EPG-GFG, 2018: 30).

Rather than encouraging developing countries to build domestic banking and financial systems that can manage domestic credit creation for development, and advocating measures to reduce their exposure to volatile international financial markets, this agenda focuses on how best to increase developing countries' attractiveness for global private wealth holders and to safeguard international investor (and creditor) risk through "financial innovation" to diversify and insure such risk "throughout the system". As recent research shows, this effectively means shifting most of this risk onto the public realm (Attridge and Engen, 2019).

The political economy of climate financing entails two specific consequences for developing countries' financing needs. First, where financing for climate investments is aid dependent, they have had to compete with other donor priorities, particularly those more closely linked to poverty reduction, as well as being subject to the variable constraints on donor budgets. As a result, actual funds committed for climate-related finance have not been close to what is required to address the scale of the climate challenge.

Second, as climate investments have come to rely on market-based financial instruments for raising capital, the dominant paradigm of risk management, as laid out in Chapter III of this *Report*, has prioritized profit-making activities in climate mitigation, leaving climate adaptation needs largely overlooked and under-funded. Even with respect to mitigation efforts, existing climate governance system assumes investor rationality as a given; prioritizes "market discipline" and understand climate change as financial stability

risk which demands risk disclosure (Christophers , 2017: 1108). In this type of governance, financialization has shifted power away from the public sector to the market – that is, to funds and fund managers managing public, private and blended finance, with a consequent reduction in the quality of accountability and transparency (Bracking and Leffel, 2021; Christophers, 2019).

Previous *Reports* have highlighted a number of concerns stemming from this climate governance and specifically from letting the financial markets determine climate-oriented investment priorities.[10] The pandemic has only confirmed that the management of public goods (and bads) requires the lead be taken by governments through dedicated public policy, investments and services.

As detailed further below, the experience of many developing countries shows that public, multilateral development initiatives have yielded greater success in building resilience at national and local levels. However, such funding often suffers from insufficient and unreliable source of capital and a lack of coordination across multiple actors. As a result, finance for adaptation purposes is caught between under-financed public mechanisms on the one side, and hyper-charged but unreliable private mechanisms, on the other.

It is clear that a more structural solution is needed to address the challenge of climate governance broadly, and climate adaptation needs in particular. Such a change needs to be guided strategically at national levels, by developmental states, in line with local needs, but there is a necessary, and larger role than is currently the case for international financial institutions in mobilizing and coordinating resources in support of that change.

This section analyses the landscape and record of green finance initiatives to date, before developing specific policy recommendations. Our analysis shows that financing the climate adaptation gap in developing countries requires both a massive scaling up of grant-based and concessional finance, as well as increased certainty that the funds raised will benefit the intended users and purposes. The concluding section outlines some steps in the direction of necessary policy reform.

1. The Role of ODA and Climate Funds

Providing ample – and ideally grant-based or highly concessional – international climate finance is the cornerstone of global cooperation on climate change (Oxfam, 2020; UNCTAD, 2019, 2020). It is important not only because of the urgency and costs of the problem, and not only because its nature as a "public bad" demands collective action, but because many of the countries worst hit by changing climatic conditions, and most in need of adaptation investment, are the least responsible for causing those changes.

TABLE 5.3 Stock and flows of climate finance (by donor reports)

Annual flows of climate finance	
Pledged at Cancun (2009) and Copenhagen (2010)	$100 billion
Paid flows of funds reported to UNFCCC and OECD (2017)	$56 billion
Paid flows of funds reported to UNFCCC and OECD (2018)	$63 billion
OXFAM estimate of effective climate-specific net assistance	$19-22 billion
Estimated Stock of finance from Climate Funds under the UNFCCC	
Green Climate Fund (since 2009)*	$5.6 billion
LDC Fund (since 2001)	$1.6 billion
Adaptation Fund (since 2001)	$0.8 billion
Special Climate Change Fund (since 2001)	$0.3 billion

Source: Oxfam (2020), Vincent (2021).
Note: *The phrase "since 2009" refers to the year of this fund's inception; same with the other dates. The figures above these come from the Oxfam report.

The key dilemma facing these countries is that financing climate adaptation is not as likely to generate income-earning opportunities as compared to mitigation. Moreover, even if funds were divided equally between the two broad categories, the total size of the envelope from ODA and contributions to dedicated global climate funds is too small for what is needed (Table 5.3).

Donor reports of public climate finance to the UNFCCC and OECD show that even though sums are rising, they still fall well short of the $100 billion per year by 2020 pledged in Copenhagen in 2009 and Cancun 2010. Of the $79.6 bn assistance provided by developed countries in 2019, one quarter was for adaptation purposes (OECD, 2021). Moreover, on some measures the effective funds are even less than half the amount reported (Oxfam, 2020). Counting only the grant equivalent and not loans, guarantees or non-grant instruments that bring with them future debt service payments, interest and administrative costs, the net financial value to recipient countries in 2017-18 fell to $19 – $22.5 billion from the

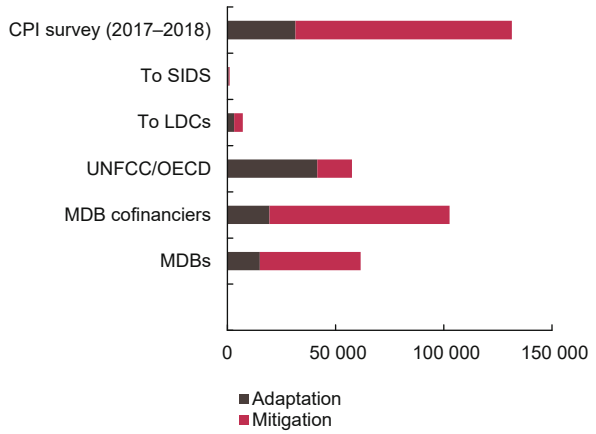
reported figure of $60bn (ibid). Some individual donor countries gave 100 per cent of aid in the form of grants;[11] yet grants from other donors ranged from less than one third and up to only one half of their total package – meaning that the net contribution to poor countries' ability to finance climate change adaptation is much less than it appears. Of the total funding received, only around 20 per cent came as grants (ibid); the rest came in loans and other non-grant instruments that could significantly increase the debt burden of recipient countries – many of whom are LDCs and SIDS.

The need for global public funds to scale up adaptation finance is reinforced by a survey carried out by the Climate Policy Initiative in 2019 (Buchner et al., 2019, updated 2020). The survey found that in 2017–2018, total grants came to only $29 billion, all of which was provided by public sources; the small amount of low-cost loans came to 93 per cent from public sources (in particular, DFIs), and a very large amount of market-rate loans reached as much as $316 billion.[12] The vast majority of loan finance raised was directed to mitigation (93 per cent) and only 5 per cent to adaptation. More positively, the absolute value of adaptation funds was rising as was the value of joint adaptation-mitigation funds (2 per cent of the total) reflecting, perhaps, a better understanding of the integrated nature of the problem. Nonetheless, CPI concludes that a "tectonic plate shift" is still needed in both public and private financing, especially of adaptation (ibid:26). Figure 5.3. illustrates this; the CPI survey includes only Certified bonds which is a small proportion of the total bonds described by their issuers as "green".

The United States has recently pledged to double by 2024 its annual public climate finance to developing countries (relative to the average commitment made during 2013–2016), including increasing three-fold its annual adaptation financing.[13] This would take the US pledge to where it was almost seven years ago when it made a similar commitment. At the recent 2021 Climate Adaptation Summit,[14] France reaffirmed that €2 billion, or one-third of France's climate contributions, will be directed at climate adaptation. Germany also committed €270 million extra for climate-vulnerable countries.

Notwithstanding these pledges, the persistent failure of advanced countries to meet the 0.7 per cent ODA target is a major obstacle to achieving climate-related goals. The lack of dependable, core financial support particularly affects countries that lack the domestic

FIGURE 5.3 Adaptation vs Mitigation finance estimates



Source: Derived from Buchner et al. (2019), Oxfam (2020), AfDB (2019).
Note: CPI survey includes only certified bonds.

resources for even the most fundamental activities, such as waste disposal and water treatment services, which are unlikely to be attractive as private investments. Even before the Covid era, lack of investment in these activities had a climate change urgency, e.g., the lack of publicly provided fresh water provokes demand for water sold in bottles – usually single-use plastic – which ends up polluting the oceans. The recent G7 communiqué committed to "strengthening adaptation and resilience to protect people from the impacts of climate change," but provided little indication of how that might happen beyond encouraging "further development of disaster risk finance markets... in line with the InsuResilience Global Partnership and Risk-Informed Early Action Partnership (REAP)." Instead, a commitment by just these seven countries to meet the 0.7 per cent ODA target would generate an additional $150bn annually, albeit still at the bottom of the range needed.

2. Debt relief for adaptive development

Previous *Reports* have shown that the Agenda 2030 is undeliverable in many developing countries under their existing burden of debt (*TDR* 2015, 2019). Moreover, warming global temperatures will only worsen their prospects, fueling an even more vicious circle in developing countries, as the adverse impact on growth prospects heightens their perceived credit risks, leading to a downgrade in their credit ratings and higher borrowing costs, adding hundreds of billions of dollars in debt servicing over the coming years (Klusak et al., 2021). For many vulnerable developing countries this will add insult to the injuries already caused by unfair credit conditions.

When financial and debt distress reaches levels that require intervention, effective and fair sovereign debt restructuring mechanisms are essential to preserving a constructive role for developmental credit creation and debt in the future. The current *ad hoc* frameworks for sovereign debt restructurings are costly, fragmented and fraught with inefficiencies and perverse incentives, largely tilting the balance of power in favour of creditors (*TDR* 2015: chap. VI; Guzman et al., 2016).

As UNCTAD has long argued, many poorer developing countries and SIDSs, now regularly exposed to natural disasters related to climate change, need temporary debt moratoriums and automatic mechanisms to extend such moratoriums on debt servicing to safeguard government expenditure on essential social spending, such as health, education and sanitation, when such events occur. The pandemic has seen moves in this direction, through the DSSI, albeit on far too small a scale.

An obvious place to begin linking debt relief to climate adaptation would be with economies that are already experiencing serious damage from rising global temperatures (see Box 5.1). Prime Minister Sheik Hasina of Bangladesh has called for a reassessment of the debt burdens of climate vulnerable countries in response to the imminent climate collapse predicted in the report.[15] As a founding member of the Group of Twenty Finance Ministers of Vulnerable Countries (the V20), Bangladesh and the group of 48 countries who self-identify as climate vulnerable, have much to be concerned about.[16] Left unchecked, rising global temperatures will lead to two-thirds of Bangladesh's land mass being inundated with sea water within 30 years. Viet Nam, another V20 country, faces a prospect that within the same time span, 80-90 per cent of the country will be covered by sea water each year; only once will be enough to dislodge Viet Nam as the producer of a third of the world's rice. Sea level rises of this sort will displace more than 100 million people in South Asia alone.[17]

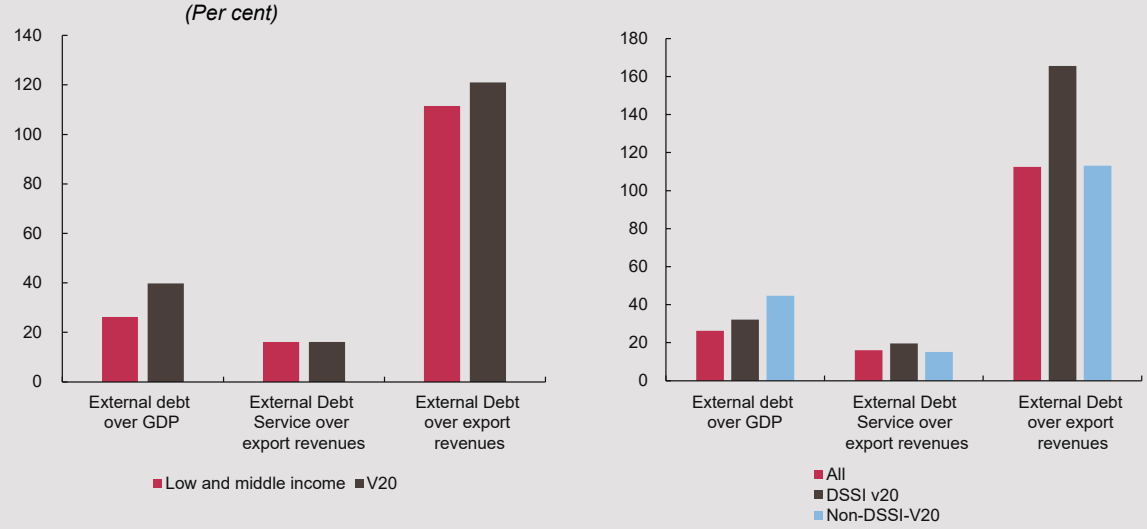
The external debt of V20 countries stands at under $1 trillion, and forgiveness or relief of a substantial part of this would provide the fiscal space to begin to address adaptation investment and the climate related SDGs. The London Agreement of 1953 which relieved post-war Germany of half its outstanding debt and limited its debt servicing requirement to 3 per cent of the value of annual exports could provide the blueprint for a negotiated settlement between these vulnerable countries and their creditors (*TDR* 2015: 134).

Box 5.1 Shades of Vulnerability – Climate, Finance and SDG Dimensions facing the V20 countries

While their classification as low- and middle-income developing countries already suggests vulnerability,[18] a closer examination suggests that the V20 countries are relatively more vulnerable than their reference groups in three fundamental ways: financial, climatic, and developmental vulnerabilities self-reinforce to undermine the prospects of V20 countries to emerge from climate collapse with their economies and populations intact. In each of these aspects, the V20 have little self-determination – they are not responsible for the climate degradation, or the high interest rates they face in international capital markets, and they are unlikely to be able to mobilize sufficient domestic resources to meet the developmental needs encapsulated in the SDGs.

Around 70 per cent (33 countries) of the V20 countries are considered Poverty Reduction and Growth Trust (PRGT)-eligible countries, which can access concessional finance due to tier low-income status. Of these, 32 are eligible for the G20 Debt Servicing Suspension Initiative (DSSI) – set in place in the wake of the Covid-19 pandemic[19]. While this has provided some small measure of relief, it was clearly not enough, with 25 of the 33 V20 DSSI countries in debt distress, or in high-risk of debt distress by June 2021.[20] Figure 5.B1.1 (left panel) shows that V20 countries have higher levels of external debt to GDP (40 per cent) than other LICs and MICs (26 per cent) on average, and similar levels of external debt servicing (as a share of export earnings – at 16 per cent). However, the right panel of Figure 5.B1.1 shows that the non-DSSI V20 countries – excluded like many other MICs from concessional finance – have the highest levels of indebtedness (as measured by the external debt to GDP ratio), at almost 45 per cent. In the case of public debt, it appears that V20 countries pay a premium to access capital markets, with a recent paper from Buhr et al. (2021) suggesting that V20 countries pay an additional 117 basis points or nearly 10 per cent more on overall interest costs, as a consequence of climate change effects being transmitted to sovereigns' credit profiles through weaker economic activity, damage to infrastructure, rising social costs associated with climate shocks (access to health and food) and population displacement.

FIGURE 5.B1.1 **LICs, MICs and V20 country groupings – Indicators of external debt sustainability, 2019**
(Per cent)



Source: UNCTAD secretariat calculations based on World Bank data.
Note: No debt data for Barbados, Kiribati, Marshall Islands, Palau, South Sudan, and Tuvalu. WB do not carry data for Palestine.

While the much-anticipated 2021 SDR allocation to all developing countries – including the V20 countries – offers some potential relief, for the non-DSSI V20 countries, the new SDR allocation will not make a big dent in indebtedness, making up just over 2 percent of their 2019 external debt, compared to 2.4 per cent for all MICs (see Table 5.B1.1).

TABLE 5.B1.1 **Projected SDR allocations – all LICs and MICs and the V20**

	All LICS and MICS				*V20*			
SDR allocation as a share of 2019 External Debt	*Number of countries*	*2021 Allocation (billion USD)*	*2019 total External Debt (billion USD)*	*SDR over total debt (per cent)*	*Number of countries*	*2021 Allocation (billion USD)*	*2019 total External Debt (billion USD)*	*SDR over total debt (per cent)*
LICs	26	8	151	5.40	12	5	86	5.46
MICs	105	198	8.220	2.41	33	19	899	2.07

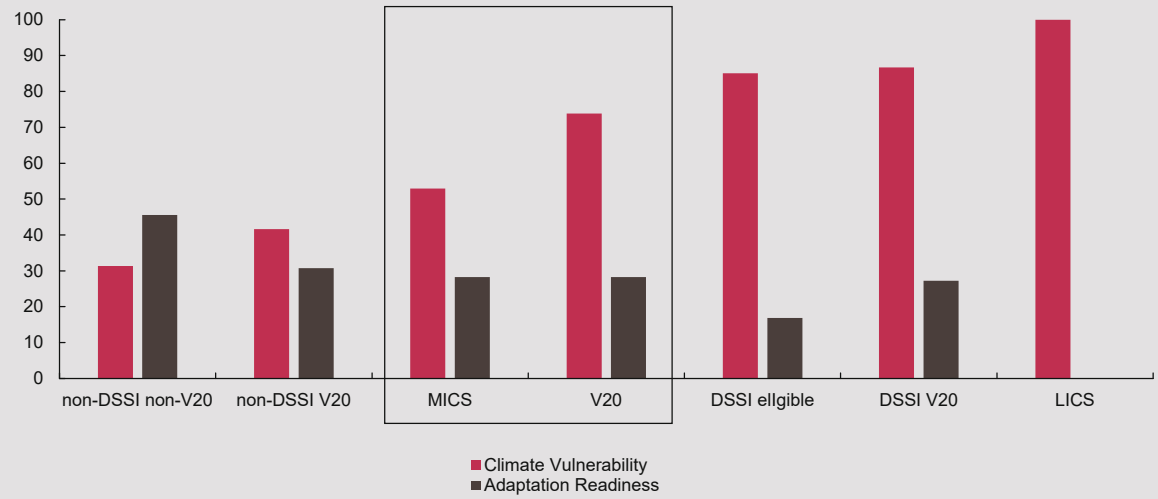
Source: Oxfam (2020), Vincent (2021).

The Notre Dame Global Adaptation Index and Climate vulnerability Index[21] is gaining prominence in terms of measuring climate vulnerability (eg. Tiedemann et. al., 2021) and includes an assessment of the propensity or predisposition of human societies to be negatively impacted by climate hazards in one index, and climate change readiness, defined as the ability to make effective use of investments for adaptation actions, in another. According to these measures, the vulnerability of 74 per cent of V20 countries falls below that of the global average, as compared to 53 per cent of MICs. Moreover, MICs that are neither DSSI nor V20 countries perform best on the Readiness index (more of them exceed the global average value of readiness) and only 31 per cent are relatively vulnerable (see Figure 5.B3.2.) LICs are more vulnerable and have least readiness (Zero per cent are more ready than the global average). The adaptation readiness of V20 countries matches that of all MICS at 28 per cent, and slightly more DSSI V20 countries (27 per cent) exceed the global average than for DSSI eligible countries (17 per cent). It is possible the identification of V20 countries as climate vulnerable has already directed their investments to adapt.

Archimedes famously indicated that in order to change the world, one needs a lever and a place to stand.[22] The V20 – by virtue of their identification as the climate vulnerable South – have a place to stand. One potential way to extend their lever would be to redress exclusion of vulnerable countries from concessional finance – on the grounds that they have exceeded some national income threshold. By adding climate vulnerability as a criterion to the PRGT selection, for example, could potentially mean access to concessional finance, and a

lower cost of credit. Another would be to enact a regular (possibly annual) SDR allocation to climate vulnerable countries as suggested in Chapter I, Box 1.3 and a third would be to begin a process of debt relief, targeting countries whose climate vulnerability undermines their capacity to adapt.

FIGURE 5.B1.2 Climate-vulnerable and ready for adaptation* countries, percentage by country group, 2019



Source: UNCTAD secretariat calculations based on University of Notre Dame Global Adaptation Index (ND-Gain).
Note: Obs: MICs and LICs classification based on WB. * Above the global average.

3. The topography of green finance: instruments and institutions

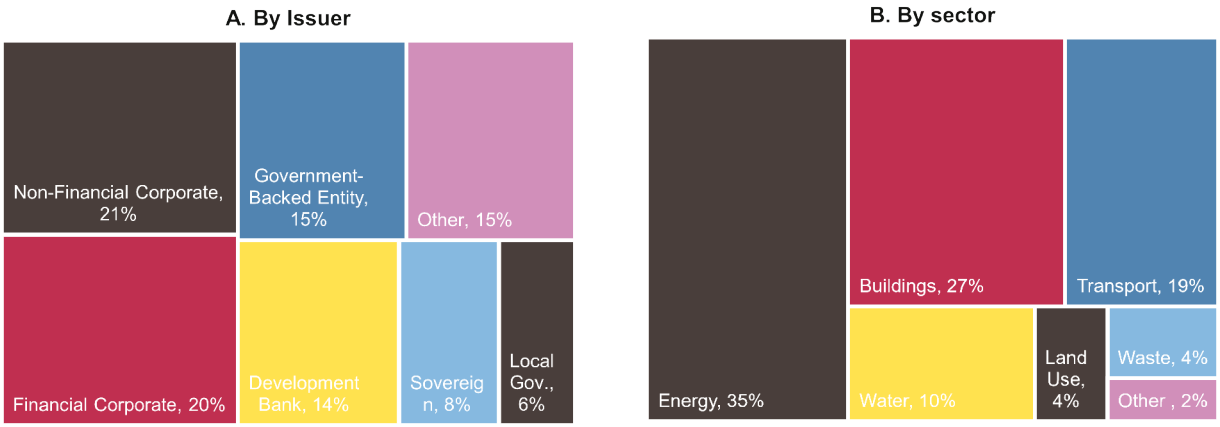
Notwithstanding the political prioritization of market-based mechanisms in global climate governance, private capital has neither been sufficient nor willing to address the climate challenge. Existing research lists a long of obstacles that prevent private actors from engaging with climate projects at a fuller scale. These include the lack of quantifiable incentives, low returns to corporate social responsivity practices, perceived high risks of low-carbon technologies by private financial institutions, a mismatch between long-term payback period and the short-term horizons of most private investors, inability to evaluate projects and their climate-related consequences, as well as a shortage of 'bankable' low carbon, adaptation, and resilience projects (see Bhandary et al., 2021). Political, institutional and legal barriers to private investments also play a major role, especially when coordination is lacking at the international level (Ibid: 530). This section reviews key instruments used by the private sector and evaluates their role in funding climate adaptation needs.

(a) Green bonds

Of all the activities in the fast-growing green finance space, the so-called green bonds have attracted the highest profile, in financial quarters at least. This is unsurprising, given that since 2007 – when the first green bond was launched by the European Investment Bank (EIB) – estimates for the sector now range from $754 billion to $1.1 trillion in loosely defined climate or climate-aligned bonds (CBI, 2021). While much of this may be window-dressing or worse (Guardian, 2021), the considerably smaller $100 billion category of "Certified Climate Bonds (CBI, 2021) is still large compared to the other sources of finance discussed above.[23] In 2020 alone, the total issuance reached a record level of $300 billion (in comparison to less than $50 billion in 2014 and 2015, an increase of almost 700 per cent) a value already achieved in the first-half of 2021. Green bonds also dominate the certified green finance market.[24] Yet even with this rapid growth, the green bond market represents only 5 per cent of the total issuance and 4.3 per cent of the amount outstanding in the international capital market. In other words, although the world is awash with capital, the challenge is how to direct it to productive purposes – in this particular case, towards adaptation that meets the additionality criteria.

Green bonds are, by their nature, often considered to be more suitable for green investments with higher short-term profitability. This may be in part because

FIGURE 5.4 **Green bonds: accumulated issuances, 2014–2020**
(Billions of current dollars)



Source: UNCTAD secretariat calculations, based on OECD, https://www.oecd.org/sti/ind/carbondioxideemissionsembodiedininternationaltrade.htm.

they are mostly issued by the private sector, even though governments and development banks are still very significant sources (Figure 5.4). More research is needed to examine in detail the distinctions between different bonds from different issuers, but given that green bonds do not need to be asset-backed (asset defined *apriori*) and can also be asset-linked (asset defined after the fact), there is a lingering concern about the possibility of "greenwashing", that is, the practice of channelling proceeds from green bonds towards projects or activities having negligible or even negative environmental benefits that can be maladaptive. While some bond label certificates do help to ensure that financed activities are green, existing frameworks are non-binding and lack enforcement mechanisms (Deschryver and Mariz, 2020; Noor, 2019). Moreover, even if bonds have the benefit of a significant 'greenium' – a question on which there is still no consensus[25] – as long as adaptation-oriented activities do not generate profit, especially in the short-term, such sources of finance are unlikely to be a solution for developing countries. Although the distinction between adaptation and mitigation has not been formally made in these kinds of instruments, looking at the categories of activities and issuers shown in Figure 5.4, it is evident that adaptation account for a tiny proportion of the whole.

(b) Nature-based swaps and funds.

Can developing countries use their natural resources as a way to get the finance needed for climate adaptation? Keeping the majority of fossil fuels in the ground has been cited as one way to meet the Paris Agreement – prompting a revisiting of the concept of debt-for-nature swaps that were used in previous decades. This could be something of a win-win in the sense that the countries get the funds needed and emission-creating activities are halted or reduced; recipient countries could even be protected from the volatile swings in commodity prices that will happen anyway as investors pull their funds out of "sunk assets". However, once again these proposals need to deal with the fact that adaptation is not likely to be a revenue-earning activity, as compared to mitigation.

The current call for a renewal of debt for nature deals rests in part on the historical experience of their use by at least 30 countries across the globe, mostly in the 1980s and 1990s. Compared to other sources of finance the amounts cited are small – in the order of $2.6 billion to $6 billion over the three decades since their inception in 1987, according to some estimates, Recent examples include the Seychelles Sovereign Debt swap of $21.6 million in 2016, which was innovative as it included philanthropic donors and impact investors, and contained a government policy commitment for marine conservation (World Ocean Initiative, 2020). Other recent examples include debt-for nature swaps between the United States and Indonesia (in 2011 and 2014) under a Tropical Forests Conservation Act programme, one of which was included under the REDD+ (See Box 5.2). However, while actual activity has declined since the earlier decades, some country proposals have been more ambitious, including Commonwealth Secretarian proposals for debt swaps to finance climate change adaptation and mitigation for small states. Other

recent examples have been used in countries ranging from Bhutan to Fiji and South Korea.

Compared to previous decades, however, debt-for-nature swaps seemed loosing favour during the 2000s – a trend attributed by some to the stronger world economy and to the impacts of debt restructuring and debt forgiveness programmes of the 1980s and 1990s, and by others to the concerns of creditor countries that suffered from the global financial crisis including the United States, European Union and Japan (Ito et al., 2018; Sheikh, 2018).

Box 5.2 What makes a bank green?

To be effective, a "green" bank should stand out clearly compared to other banks in terms of its mandate, its loan portfolio, and the terms and conditions of its lending. The *mandate* in particular should be dedicated to green developmental outcomes and in line with international commitments including the SDGs and Paris Agreement, even if this is somewhat flexibly defined and can evolve over time as banks develop capacity and country needs change. Some banks highlight the goal of investing in the most promising new technologies. Some are rather supposed to focus on the needs of poor households in this area (e.g., Hawaii GEMS). This is important because the mandate and role drive public banks' activities and focus their investment decisions, including the types of clients and sectors to target. They also allow stakeholders to hold banks and management to account for the impact of their investments and commitment to community.

The *operational strategy* or business model must be consistent with its mandate. This refers to how the bank raises its finance, including the mix between public and private funding, which, in turn, will affect the extent to which it offers concessional loans and can deliver environmental and development outcomes. Surveys suggest that the vast majority of green banks offer loans, most of which are priced lower than the market rate. But even when rates are favourable compared to the market, this obligation may be a challenge for developing countries to meet. A smaller proportion offer finance in other ways such as equity or guarantees, and an even smaller number offer grant finance.[26] It appears that all green banks offer technical assistance. This contribution is important as expert banks can help governments design the framework of climate change adaptation, including strategies relating to regulation and pricing policies etc. (Griffiths-Jones, 2021). *Financial sustainability* is also important for all banks. This does not mean maximizing profitability and requires a different lexicon for performance measurement. The long-term financial sustainability of a green bank should not undermine its ability to invest in higher risk areas or projects where development returns are high but profitability is low – as is likely to be the norm when it comes to adaptation.

Most green banks are stand-alone entities set up by government legislation and capitalized by government appropriations. Some (e.g. the United States) are funded through a transfer, for example the transfer of electricity bills (Connecticut Green Bank and New York Green Bank). Striking a balance between the appropriate level of returns for a bank to remain viable, and the broader social and environmental demands of non-profit adaptation remains a challenge however.[27]

Some hints as to how green banks could create this path are evident from the recent experience of Covid-19. Public banks around the world responded immediately and often dramatically to support their governments' efforts to secure economic relief and resilience during the stand-still caused by lockdown. A rapid review carried out by UNCTAD during the early months of lockdown found that local, national and regional public banks around the world stretched out to produce a fast and strong counter-cyclical effect.[28] Some changed their mandates and procedures to meet the urgent needs; many scaled up their lending capacities by issuing bonds or accessing international markets, sometimes for the first time; virtually all offered finance on concessional or favourable conditions as well as technical advice. Those with a long institutional history, mandates that were supported by adequate finance and appropriate performance metrics were in the best position to respond effectively . Financing the adaptation to climate change has many parallels with this experience.

Schemes of the size of the Polish EcoFund have not been seen again yet – perhaps reflecting the charged timing of this debt-for-environment initiative, which came just as Poland was in transition away from central planning (Caliari, 2020). The debt-for-environment initiative was carefully prepared in parallel to negotiations on the shape of the wider economy and institutions (OECD, 2007: 23). Paris Club creditors agreed to additional bilateral debt swaps that were arranged not as a one-off swap of the entire debt stock. Rather, the Polish government transferred every year a percentage of the debt repayment due to a local financing facility the EcoFund, which then managed the spending to be given as grant support for projects in Poland, addressing transboundary air pollution of sulphur and nitrogen oxides; pollution

and eutrophication of the Baltic Sea; global climate change gases; biological diversity; and waste management and the reclamation of contaminated soil. Over the years additional swaps were arranged with other creditors, each on different terms, and altogether the scheme generated an unprecedented amount of over half a billion dollars – an amount that dwarfs all other debt-for-environment or nature swaps in the world (OECD, 1998).

Debt swaps represented an alternative to deeper sovereign debt restructurings in countries with high but sustainable debt burdens (i.e. those that do not face a solvency problem). Debt swap programs can be effective in addressing different debt compositions in developing economies and, in particular, exposure to large commercial debts and large public debt stocks. A disadvantage of debt swaps can be high transaction and monitoring costs for project-based swap programmes. They are complex to implement, and swaps in the past have taken from 2 to 4 years to negotiate between all parties – many of which involve a recipient government, a donor government, and local and donor country conservation groups. However, these can potentially be mitigated under coordinating regional initiatives, such as ECLAC's Debt for Climate Adaptation Initiative for the Caribbean and ESCAP's Debt Swap Mechanism for the Western Asia region, both recently launched.

Nature Performance Bonds (F4BI 2020) are another nature-based way being used to recapitalize sovereign debt. Any new debt would receive Brady type credit enhancement in exchange for commitments to spend the money on SDG type investments – secured by bond issues by MFIs or SDRs from the IMF. The original Brady Plan was organized extremely quickly, yet this partly is because the debtor countries essentially refused to pay and their bargaining power was high. It is not clear if this proposal could work when it is not banks that are owed money but rather institutional investors who offer it. Supporters of this approach insist that such a policy should be linked with country programmes that are designed by the recipient countries, and with conditionalities that are designed by them as well (See Caliari, 2020; Griffiths-Jones, 1992; OECD, 2007, among others). Once again however, it is not clear how to translate these into adaptation, which does not provide recipient countries with an income stream. In addition, one needs to be careful given the nature of the arrangements being proposed that limit the policy space of developing countries. They may place even greater power in the hands of bondholders and international financiers, and the latter may apply conditionalities and constrict democratic decision-making on the part of the debtor country.

D. Banks and Climate Finance

1. Dedicated Green Banks

Nearly all the public banks established since 2010 have "green" in the title or high up in their mandate (see Box 5.3). By some estimates they have lent about $24.5 billion since their inception (Whitney et al., 2020). The figure does not include established banks with a green desk or with green lending within their normal activities – such as the new public banks that emerged after the 2007-2008 crisis, including the Asian Infrastructure Investment Bank. Many governments have expressed an interest in establishing a green bank, as in the case of current discussions in the United States for a new national development bank with a green mandate. Others are looking to establish a green facility within an existing bank. Survey evidence suggests that typically it is the Ministry of Finance, or a country's central bank, that champions the idea, as opposed to the Ministry of Environment or the private sector. The main motive of investing in climate related activities is the second, not the first, priority. It is therefore not clear whether this will be a significant source of finance for adaptation activities, as compared to mitigation. In the State of Green Banks report, adaptation activities appear in a minority of related investments (Exhibit 9, Whitney et al., 2020: 30). Other long-standing public and development banks have boosted their green credentials; for example, the EIB recent declaration that 50 per cent of all new lending from 2025 must be low-carbon and no investments will be allowed that are not consistent with the Paris Agreement.

The Banco Popular in Costa Rica, established in 1969 by the Costa Rican government to promote economic development, for example, has been involved as a "finance catalyzer" in a project designed to help marginalized people and communities adapt to the frequent droughts that are attributed to changing climate. Based on grant financing, watershed protection and better management of water use are among the adaptation strategies that it supports. Banco Popular,

working with the Government of Costa Rica and agro-processing companies, came up with a $9.8 million grant as co-financing alongside the $8.8 million grant provided by the Green Climate Fund.

The German public development bank KFW has long argued it was not enough to address the causes of climate change by reducing emissions, because the impacts of climate change are already being felt in many countries. In the years 2013–2018 it invested 23.6 billion euro in climate related projects in developing countries, of which around 25 per cent was devoted to adaptation and resilience building projects. Among these projected included monitoring of glaciers in Pakistan, flood protection in Mozambique and hydrological monitoring in Jordan. As with the Costa Rican example above, these national banks operate in cooperation with other institutions: a recent project for flood protection in Bangladesh saw the KFW deliver $15 million (from the German Federal Ministry of Economic Cooperation and Development), alongside $40 million from the GCF with the Government of Bangladesh contributed $25 million.

2. Multilateral Development Banks with a climate change agenda

Development banks are well positioned to respond to the adaptation challenge compared to other sources of finance, as their remit usually specifically authorizes them to provide finance for the long-term, at lower rates and on more advantageous terms. When it comes to these investments the private sector will hardly support as necessary, illustrating the systemic problem related to adaptation and non-profit-centred ambitions. To date, development banks have provided most of the concessional loans and grant-based finance. Not all MDBs and RDBs have been consistent in this regard, but their role is critical given current predictions and worsening scenario in light of the IPCC 2021 report.

This type of public financing needs to increase in areas that so far have been under-resourced, especially in regional projects where many climate projects are considered less feasible for private or revenue-seeking purposes. Partly compensating for the limitations of under-capitalized national banks, MDBs have been steadily increasing their climate finance activities in the years since the Paris Agreement. Many pledged to re-direct their financing decisions and investment portfolios to be consistent with climate change adaptation and mitigation goals. The 12 largest MDBs committed to five Voluntary Principles for Mainstreaming Climate Change and by October 2020 as many as 48 institutions had followed suit.

The key principle of providing financing for MDBs in vision, if not yet in practice, has moved beyond the issue of simply increasing lending for climate-oriented or green projects. Now, MDBs and other members of the International Development Finance Club (IDFC) vow to "shift from financing climate activities in incremental ways to making climate change – both in terms of opportunities and risk – a core consideration and a "lens" through which institutions deploy capital" (Climate Action in Financial Institutions, 2018; Murphy and Parry, 2020). This is a major change in focus that aims to mainstream climate considerations and align banks' entire financing and investment portfolios with the Paris Agreement. These intended changes constitute a bigger and more complex ambition than mobilizing and tracking climate finance contributions to the $100 billion pledge made in 2009.

But the goal of scaling up is yet to be achieved. In 2019, nine MDBs announced their target to increase collective global climate investment to at least $65 billion per year by 2025, and within this timeframe to double the portion designated for adaptation purposes to $18 billion per year (ADB et al., 2019: 1). They plan also to increase co-financing to $110 billion, of which less than half is anticipated being mobilized by private direct sources. By 2020, the total committed was $66 billion (ADB et al., 2020: 3), however, at the same time, even as all banks announced ambitious plans for increased spending over the coming years, some 6 out of 8 lent less in 2020 than the year before. Only the World Bank and the European Investment Bank increased total climate finance spending in the last year. This is a particular concern for low-income countries, which received just $38 billion total finance in 2020, which is a fall from the year beforehand ($41.5 billion) (ibid: 7). This could potentially reflect the unanticipated spending due to the economic impact of Covid-19, although this rationale was mentioned specifically in only one or two bank cases. So, while there has been a sizeable increase since 2015, there is still a long way to go.[29] Securing adequate finance is not just about the *amount* of money lent, but also its *purpose* within the broad spectrum of climate related activities. MDBs themselves note the need to scale up the share going to adaptation, which currently counts for just 26 per cent of total lending. This proportion is up 2 percentage points from 2019 and while the absolute

values show a marginal increase in 2020 from $15 billion to $16 billion, they are still below the stated target (Table 5.4). This is especially important for least developed countries and lower middle-income countries that are already struggling to cope with some effects of climate change, which find it more difficult to attract finances from other sources, and which are more in need to make the transformative leap into industrialization (ideally, green) and to fund activities that can earn sustainable revenues in the future.

Preliminary evidence suggests that banks whose beneficiary members include more low-income countries such as the African Development Bank and the Islamic Development Banks, devoted the highest proportion of finances to adaptation at 56 per cent and 47 per cent respectively, in 2019 and 63 per cent and 65 per cent by 2020 (AfDB ibid). In contrast, the European Investment Bank, with a more North Atlantic focus, spent only 4 per cent on adaptation in 2019 rising to 10 per cent in 2020, and the rest on potentially game-changing mitigation. Similarly, the European Bank of Reconstruction and Development directed most of its finance to mitigation. Until low-income countries will also benefit from getting into the new technologies and new markets that mitigation entails, long-standing inequalities will be further cemented.

It is also evident that co-financing remains more prevalent in mitigation activities than for adaptation ones in 2020 compared to 2019, reflecting the fact the former are revenue-earning in nature; although at the same time, perhaps unsurprisingly, this year both co-financing and private borrowings have fallen significantly while public borrowing rose – reflecting concerns that the short-term needs of this year's health and economic crisis should not derail longer term development financing needs (see Chapters I and II of this *Report*). It is also notable that, when it comes to co-financing, alongside the public MDBs, it is other public sources of finance that provide the lion's share – especially with regards to low-income countries (Table 5.5).

Assuming the private sector remains reluctant to make the investments needed, even alongside significant public sector co-finance from MDBs, donors, domestic public sources and others – where is this necessary acceleration in capital availability to come from? A greater pool of available climate adaptation financing (with more grants and highly concessional loans) requires that MDBs scale up their total lending capacities considerably. One way of financing this could be through the revenues earned from their mitigation loans, but this will take too long to be of use to countries in urgent need of adaptation investments today. Also, some under-capitalized MDBs are already struggling to maintain viability as it is.

Other routes for scaling up have been suggested in the past, including by previous *Reports*. One is for the owner members to increase their paid-in capitalization – this route perhaps has the greatest potential if political will is there. Another is to take on new members, especially members from higher income countries that can make a larger capital contribution; or to revise MDB mandates and operational rules to allow banks to increase the leverage of the funds they already have. UNCTAD has long argued for this (*TDR* 2019) and the precedent has been made

TABLE 5.4 MDBs Climate finance components, 2020

	MDB Climate Finance ($ million)	*Per cent of total*	*Climate Co-Finance ($ million)*	*Per cent of total*
Adaptation	16 100	26	19 954	23
Mitigation	49 945	81	65 130	77
Public borrower	46 687	71	53 413	63
Private borrower	19 358	31	31 672	37
Total	**66 045**	**100**	**85 084**	**100**

Source: Derived from AfDB et al. (2020, 2019).

TABLE 5.5 Climate co-financing partners to MDBs, 2020
($ million)

Finance mobilization	*Low- and middle-income countries*	*High-income countries*	*Total*
Private direct	3 556	2 354	5 910
Private indirect	6 345	19 417	25 762
Total private co-finance	9 901	21 771	31 672
Public direct	8 366	1 658	10 024
Public co-finance			
Other MDBs	8 150	813	8 962
IDFC members	1 774	251	2 026
Other international public	1 946	4 477	6 423
Other domestic public	6 182	19 796	25 978
Total public direct and co-finance	26 418	26 995	53 413

Source: Derived from AfDB et al. (2020, 2019).

TABLE 5.4 Summary of the financing landscape

Mechanisms/Institutions	*Examples*	*Issues*
ODA $19-$63 billion depending on source.	OECD DAC, payments to UNFCCC	ODA is still way below the sums pledged. Much is given not as grants, and is more directed to mitigation than adaptation.
Global funds $8.3bn	Green Climate fund, Adaptation fund, LDCs and others	Insufficient funds for the needs.
MDBs $46 billion		Mostly for mitigation, not all banks are as reliable or effective as others. Banks especially undercapitalized and weak in areas where the needs are greatest.
Grants or Debt for Nature - $2.6 bn since inception	Most in LAC since 1980s; Indonesia, Seychelles; REDD+ schemes.	Complex to implement, high transactions costs – takes 2-4 years to negotiate between all the parties. Need long-term financial commitment, vulnerable to currency devaluation. Role of local and international conservation groups.
Sovereign and corporate green bonds $100 billion Certified out of loosely defined green market $754 bn.	Developing country green bond issuances are increasing (Bhutan, Fiji, China); Liberty Bond issuances in advanced economies.	ESG highly debatable; Asset linked not asset backed; even if domestic bonds still raise currency vulnerability; Many are not concessional; Countries say they lack capacity to manage them; all the other problems with other bonds and currency risks etc
Green banks $24.5 bn since inception; more if include green lending (AIIB, NDB MDBs etc) World Bank).	Discussion for a new United States green bank just one of many.	Risk of privatization if make too much or too little returns…. Are these actually the best bet?
Central banks	Many examples from developing countries. NGFS.	COVID programmes are not pro-climate, may instead bring about maladaptation.
Conservation Trust Funds	More than 80 in place globally, e.g. Caribbean Biodiversity Fund est. 2018 with endowment of $43 million and now managing $70 million (endowment fund and sinking fund).	
Other market – auctioning of allowances	Payment for entry to marine EEZs, payment for fishing licenses (Indonesia $31 million in 2018, Kiribati $117m in access fees). Cruise ship levies – Antigua and Barbados $1.2 m in 2018 by a $1.50 per person tax.	These are nature-related fund raising activities but may be needed to pay for other fiscal uses not adaptation.

already during the Covid period. When southern-led MDBs scaled up lending during the early phases of the Covid-19 pandemic, they did it by reallocating existing portfolios and borrowing from members' sovereign wealth funds, adapting mandates, re-defining key priorities and changing functions (MacDonald et al., 2020: 361-375). One South-South institution increased its lending capacity by as much as 60 per cent to meet the urgent needs (Ibid).

Another possible source of multilateral funding would be to repurpose SDRs for long-term environmental and country-specific adjustment plans, including preservation targets and emission reductions, as well as the required investments and budgets to meet these targets. This could provide a flexible and, in principle, unlimited financing mechanism for long-standing calls, by UNCTAD and others, for a global environmental protection fund that can provide predictable and stable emergency funding without strict policy conditionalities or limiting eligibility criteria.

International capital markets can still be used to scale up quickly, and most MDBs do rely on them.[30] Since 2008, when the World Bank issued the first green bond following demand from a group of Swedish pension funds for high quality (AAA) liquid products that could also have a positive impact (World Bank, 2008).[31] The Bank has issued 185 green bonds

in 23 currencies worth an equivalent of $15 billion, and many other MDBs have followed suit, including Southern-led ones.[32] A high profile and similar boom in demand for green bonds is taking place in the national and corporate space, although there are many reasons to think it is as much more about the search for yields in a low return environment than a concern to have concrete impact. MDBs could rather utilize at least some of these funds in a better way given that they are actively engaged in green-backed projects. It is quite likely that many investors with a genuine interest in supporting climate-related finance would prefer to buy issuances from the World Bank and other MDBs. However, it is notable that these arrangements are usually beyond the realm of individuals or smaller funds.

E. Policy Recommendations

The triple imperative of scaling up climate finance, directing it to where it is needed, and ensuring favorable conditions for developing countries in both trade (delinking international trade rules from climate adaptation policies) and funding (long maturities, grants or concessional terms) needs to be approached through a number of specific policy reforms, some of which are listed below.

At present, assistance from the international community for climate adaptation continues to rely on a combination of short-term aid, longer-term conditionalities of fiscal consolidation and preventative self-insurance schemes against catastrophic risk. This, however, is woefully insufficient to address the systemic impact of recurrent and increasingly frequent climate change-related shocks.

By its nature, the challenge of climate adaptation puts the onus on grant-based finance or highly concessional lending mechanisms as key to meeting the adaptation challenge. At the same time, any finance provided will work best if integrated under an overarching financial and industrial policy designed and implemented by a climate conscious developmental state (see Chapter IV).

This is, therefore, the *first priority* of a strategic approach to climate adaptation. A climate conscious developmental State should be catalyzing and not just addressing "market failures", nor relegating itself to "de-risking" the opportunity for others to make profit and take more than their share of the benefit. The systemic risk involved here requires a regulator and coordinator of private green finance, as with the financial sector generally. These must be seen as a means to avoid the destructive tendencies of today's ultra-liquid financial sector, where the embedded search for yield is inconsistent with the needs of climate mitigation, let alone the more challenging needs of adaptation.

Most adaptation efforts are also required at the local level (DCF AIliance, 2019). The vast majority of adaptation finance appear to be channeled to large financial institutions geared towards large-scale projects that do not necessarily support local efforts or meet local-level adaptation priorities. Locally-led climate finance efforts need to be driven by principles that ensure the most effective way of responding to governance and climate challenges and risks, including: i) community-led planning that is anchored within and supportive of existing devolved institutions, and that promotes ii) social inclusion of climate marginalized people; iii) a process that is flexible and adaptive management towards the creation of resilience investments, with iv) an emphasis on public goods provisioning (DCF AIliance, 2019: 4).

Until the right balance is found, all the best intentions will be high-jacked or side-tracked. As shown above, to date, the emergence of green bonds, a carbon trading market or even the uses of Covid-19 recovery funds, has not done enough to help developing countries adapt to climate change (Gallagher and Carlin, 2020). Two levels of reforms for financing the adaption challenge can be identified: first, steps in support of a climate conscious developmental state to mobilise financial resources for mitigation and adaptation investments, and second, reforming the approach to climate governance internationally.

The first set of reforms should focus on the following:

- **Assistance**. ODA commitments and pledges need to be met and go further, to increase the proportion of additive finance designated for climate change adaptation and resilience building. *Grants and extremely concessional*

loans are essential for adaptation. These could be financed by a green bond and a tax à la Tobin, or through the repurposing of fossil fuel subsidies. This must take account of specific country requirements in least developed countries and lower-middle income countries and fossil-fuel exporting economies that need a gradual restructuring of these carbon-intensive industries and an appropriate safety net system to meet climate debt.

- **Debt relief and debt cancellation** for developing countries should be put on the climate agenda. The delivery of the Agenda 2030 was already in doubt before the Covid-19 crisis given the burden of debt being carried by many developing countries but in the post-Covid era these countries face even greater challenges in addressing their climate resilience needs. An obvious starting point would be the debt of the V20 countries, but linking the climate and debt crises highlights the need for systemic reforms to the international debt architecture.

- **Banking.** Well-financed *green public and development banks*, staffed by experts in climate change issues, at municipal, national and regional levels, are needed. Mandates and performance indicators should be aligned with that purpose. The multilateral development banks need additional capital to support more green investments and less fossil fuel or polluting activities and their activities aligned with the Paris Agreement and their "build forward better" commitments, withdrawing from oil, coal and gas and building in transition processes that support people and those industries to make the leap. Policy conditionalities will need to be pruned back and their AAA straitjacket should be relaxed to support experimental or new green technologies and enterprises. G7 countries should use their shareholder power to guide MDB in this direction. *Regional Development banks* and multilateral development banks could also buy developing countries' green bonds, guaranteeing a more stable demand for such bonds and easier access to long-term capital for developing countries. This could also have a favourable impact on their yields and, consequently, help to mitigate the external service burden, to an extent.

- **Bond Markets**. Affordable access to long-term funding is essential for developing countries in meeting developmental and climate needs, and green bond market is a key ways to help raise such long-term financing. Yet regulatory standards lag behind the growth of the green bond market: many disclosure commitments are voluntary, mechanisms to protect issuer and bondholder rights are under-developed; mechanisms to avoid greenwashing should be in place. These deficiencies need to be addressed by the private sector, as well as national and international regulators. *Appropriate standards* and enforcement of rules need to be agreed upon and introduced to make sure that green bonds stay green; that green savings bonds issued by national governments *respond to the needs* of local population; that the use of green bonds is properly *monitored and enforced* by the issuing governments; that both *investors and bond issuers are protected* over the lifetime of the bond; that *greenwashing is identified and penalised*; certification standards need to be transparent, harmonised and properly implemented. Given the scale of the challenge, the regulatory framework for the green bond market needs to be supported by *correspondent levels of financing and staffing*, at national and international levels.

The ***second*** priority would be declaring climate change adaptation a public good (cf. Timisel, 2021), at the international level, and establishing appropriate mechanisms to govern it. Such a recognition would reflect the reality already experienced by the developing economies struggling to green their exports and fund climate adaptation needs, and enable them to access and adapt green technologies to their national growth trajectories. Internationally, Climate Adaptation Fund, as proposed by some countries in the WTO,[33] can help countries in greening their exports. A Trade and Environment Fund could fund the incremental costs of sourcing critical technologies, provide grants for specific green technologies, finance joint research, development and demonstrations and fund establishment of technology transfer centers, exchanges and mechanisms. This measure would also deliver the necessary institutional coordination at the international level, for the much needed financial, technological and economic needs of climate conscious development.

F. Conclusion

With the growing intensity of major extreme events, adaptation must be prioritized. Institutional reforms that are required must build towards a move away from the principles of a regulatory, market-enabling state, and towards a developmental green state which would be in control of its own long-term priorities in climate adaptation and economic trajectories.

Trade has an important role to play in shaping sustainable development paths. However, attempts to liberalize trade in areas of export interests of the developed world, and relying on actions like CBAM can only undermine the ability of developing countries to use trade as means of development.

Facilitating climate adaptation in developing countries through trade agreements will require green technology transfers without restrictive patents, appropriate SDT in environmental goods and services so that providers of these goods and services in developing world can have level playing field and preserving policy space to encourage export diversification.

Since CO_2 emissions embodied in international trade as a share of total emissions is not more than 27 per cent, trade rules need to be de-linked from climate adaptation objectives, especially in the WTO, and countries should be provided with sufficient policy space to implement their national policies for climate adaptation. There is a need to pursue incentive-based approaches like declaring green technology transfers and limiting patents on these technologies.

The year of the pandemic may yet prove to be transformative on the way to formulating a more ambitious approach to financing the adaptation challenges, but hurdles are high and time has run out. It is encouraging to see the United States announcing its commitment of $5.7 billion in annual climate finance for developing countries by 2024. Yet, "in the context of both the need and the money being spent at home, this is an error term…the lack of a truly global response to the pandemic augurs badly for common action of climate" (Wolf, 2021).

A much more visible and leading hand for public financial institutions at all levels is essential. Some seventy-five years ago, the Marshall Plan helped deliver shared prosperity among the war-torn economies. Today, climate change is a challenge to humanity that requires a similar integrated, anticipatory and strategic approach. A menu options has been discussed in this chapter. However, a global, green-oriented structural fund would support realignment of developing countries and deliver funding for both adaptation and mitigation initiatives as an urgent priority. This would generate dividends not only for the developing countries, but for advanced economies too. It will help building counter-cyclical buffers, enhance resilience and inclusion in communities at local and national levels, and enable growth towards a pattern that can keep global temperature rises below the critical 1.5°C.

Notes

1 WT/CTE/W/249.

2 https://sdg.iisd.org/commentary/policy-briefs/wto-members-assess-mc12-options-for-trade-environmental-sustainability-work/.

3 See https://www.wto.org/english/docs_e/legal_e/04-wto_e.htm.

4 See https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm.

5 https://www.mfat.govt.nz/en/media-and-resources/climate-change-ministers-express-support-for-the-agreement-on-climate-change-trade-and-sustainability-at-cop25/.

6 According to media reports, the European Union plans to use the expected annual revenue of €10bn from its planned carbon border tax mechanisms to repay debt incurred for its recovery measures; *Financial Times* (2021). EU carbon border tax will raise nearly €10bn annually. 6 July.

7 Depending on its design, such a climate waiver and/or peace clause could also help to tackle the regulatory chill resulting from legal mechanisms such as Investor-State Dispute Settlement (ISDS) which disproportionately expand the purview of investors over the public policy-making process, often at the expense of climate

and development-friendly initiatives (Tienhara, 2017).

8 *Mitigation* finance is directed to general activities that reduce greenhouse emissions and are compatible with low emission development, such as renewable electricity generation or energy-efficient construction. *Adaptation* finance is, rather, linked to particular projects and location specific loans that directly impact vulnerability to climate change, such as improving the resilience of small island states to natural disasters.

9 As noted in Chapter III, with respect to investing in mitigation there are multiple potential sources of financing to ensure that countries can meet the required investment target. See further *TDR 2019*.

10 Further on the limits and dangers of relying on private finance to take the lead on sustainable investment, see Fancy, 2021.

11 This includes Australia, some European Union institutions and the Netherlands. Denmark, Sweden and Switzerland gave over 95 per cent of their contribution in the form of grants. At the same time, for countries that gave significantly much larger sums in total, such as Germany and Japan, their smaller relative proportion in grant form did yield a significant amount in absolute terms (Oxfam, 2020:10). The main point is that grant provision from all sources needs to increase.

12 https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2019/.

13 In 2015, the United States pledged to double its adaptation funding through multilateral and bilateral channels to $800 million per year to developing countries by 2020. See: https://2009-2017.state.gov/r/pa/prs/ps/2015/12/250495.htm. From 2010 to 2015, total adaptation financing was US$2.57 billion, averaging US$428 million (US State Department, n.d.). See President Biden's latest announcement here: https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-president-bidens-leaders-summit-on-climate/.

14 See: https://adaptationexchange.org/adaptationActionAgenda.

15 Statement in Response to the Sixth Assessment Report of the IPCC, 2021. 10 August 2021.

16 Started in 2009, but formally established in Lima, Peru in 2015, the 48 countries represent 1.3 billion people and include Afghanistan, Bangladesh, Barbados, Bhutan, Burkina Faso, Cambodia, Comoros, Colombia, Costa Rica, Democratic Republic of the Congo, Dominican Republic, Ethiopia, Fiji, Gambia, Ghana, Grenada, Guatemala, Haiti, Honduras, Kenya, Kiribati, Lebanon, Madagascar, Malawi, Maldives, Marshall Islands, Mongolia, Morocco, Nepal, Niger, Papua New Guinea, Palau, Palestine, Philippines, Rwanda, Saint Lucia, Samoa, Senegal, Sri Lanka, South Sudan, Sudan, United Republic of Tanzania, Timor-Leste, Tuvalu, Vanuatu, Vietnam, Yemen. See https://www.v-20.org/members.

17 Sir David King, Head of the Centre for Climate Repair, Oxford, recorded in FT podcast "Can Climate damage be repaired?" 12 August 2021. Available at https://www.ft.com/content/5804b93f-8b80-40c4-9b30-3d8b9bf8da3d.

18 We employ the World bank categorization of countries in this discussion.

19 Sudan being the exception.

20 See: https://www.imf.org/external/Pubs/ft/dsa/DSAlist.pdf.

21 Methodology can be found here: https://gain.nd.edu/assets/254377/nd_gain_technical_document_2015.pdf.

22 "Give me a place to stand, and a lever long enough, and I will move the world".

23 According to the Climate Bond Initiative (CBI), "rigorous scientific criteria ensure that bonds and loans with Certification, are consistent with the 2 degrees Celsius warming limit in the Paris Agreement".

24 There are also ESG debt instruments that are not certified and labelled as green, social and sustainability bonds. The uncertified green debt instruments are called climate or climate-aligned bonds.

25 See, for example: Ehlers and Packer, 2017; Zerbib, 2016; Larcker and Watts, 2019; Hachenberg and Schiereck, 2018; Kapraun et al., 2019.

26 Based on a sample of 27 green banks by Whitney et al., (2020).

27 One part of the path may be to target committed, small scale investors, not just the big institutional. The Connecticut Green Bank CGB, established in 2011 and with a focus on renewable energy, recently launched an innovative bond programme purchasable in $1 000 tranches on 15-year terms to households and 'ordinary citizens' with the assurance the funds would be used to finance rooftop solar systems. The bond issuance was sold out within two weeks, with demand exceeding the bank's supply.

28 Carried out by UNCTAD in mid-2020 in collaboration with Eurodad, the Municipal Services Project and a team of 24 researchers and four regional public bank and finance associations, this was the first review of public banks and their response to Covid-19. It can be found at https://unctad.org/webflyer/public-banks-and-covid-19-combatting-pandemic-public-finance.

29 The pledged $65 billion for 2019 appears like a big increase over previous years but this is in part because it includes EIB lending to European

countries, not previously included. When only emerging and developing countries are included, the 2019 lending commitment shows a smaller increase, from $43.1 billion to $46.5 billion.

30 The IsDB issued a special Covid Sukuk and borrowed from other MDBs; the NDB also issued a special Coronavirus bond.

31 https://www.worldbank.org/en/events/2018/11/16/from-evolution-to-revolution-10-years-of-green-bonds.

32 Demand remains high and new bonds are typically heavily over-subscribed even when very large, as seen with a recent offer in May 2021 of a $2.5 billion five-year AAA rated Sustainable Development Bond. Paying an annual yield of 0.963 per cent, it had one of the lowest spreads in the sector and was taken up mostly by central banks and official institutions (buying 63 per cent of the issue). Pension funds and asset managers also took a portion (18 per cent). https://www.worldbank.org/en/news/press-release/2021/05/18/world-bank-usd-2_5-billion-5-year-bond-mobilizes-finance-for-sustainable-development.

33 The trade and environment Fund was proposed by China and India in 2011. For details see: https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=104702,98548,101134,90606,71962,99113,92836,94001,92436,58038&CurrentCatalogueIdIndex=0&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True.

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