CLIMATE CHANGE AND SUSTAINABLE GROWTH: INTERNATIONAL INITIATIVES AND EUROPEAN POLICIES

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Abstract

In recent years, the fight against climate change and for sustainable growth has been gaining prominence on the international agenda. Reducing pollutant emissions depends on a sufficiently large number of countries adopting efficient mitigating measures that are in line with international agreements. International cooperation is essential to deliver on the commitments undertaken pursuant to these agreements, implement the energy transition and stop climate change. Both the G-20, some of whose members are among the largest greenhouse gas emitters, and the International Monetary Fund are increasingly taking into account climate issues when performing their functions. The European Union plays an active and leading role in this global commitment and is pursuing increasingly ambitious goals. In compliance with the European Green Deal, the European Union has enshrined its goal of climate neutrality in the European Climate Law and has launched a number of groundbreaking policies to implement it, such as the “Fit for 55” package. The war in Ukraine adds an element of uncertainty to this path, given the importance of Russia as a supplier of fossil fuels to the European Union.

Keywords: climate change, decarbonisation, European Union, G-20, IMF, COP, Green Deal, Ukraine/Russia.

JEL classification: F53, P18, H23, H87, Q54, F64, F68.

Resumen

En los últimos años, la lucha contra el cambio climático y por un crecimiento sostenible está ganando protagonismo en la agenda internacional. Reducir las emisiones contaminantes depende de que un número suficientemente amplio de países adopten medidas mitigadoras eficientes y alineadas con los acuerdos internacionales. La cooperación internacional es fundamental para hacer efectivos los compromisos asumidos en virtud de esos acuerdos, llevar a cabo la transición energética y frenar el cambio climático. Tanto el G-20, que cuenta entre sus miembros con los mayores emisores de gases de efecto invernadero, como el Fondo Monetario Internacional están incorporando de manera creciente las consideraciones climáticas al ejercicio de sus respectivas funciones. La Unión Europea (UE) es parte activa de ese compromiso global, en el que ejerce cierto liderazgo, y persigue objetivos cada vez más ambiciosos. En cumplimiento del Pacto Verde Europeo, la UE ha dado rango legal a su objetivo de neutralidad climática en la Ley Europea del Clima y ha puesto en marcha diversas políticas pioneras para su implementación, como el paquete de medidas Objetivo 55. La guerra en Ucrania introduce un elemento de incertidumbre en esta senda, dada la importancia de Rusia como suministrador de combustibles fósiles a la UE.

Palabras clave: cambio climático, descarbonización, UE, G-20, FMI, COP, Pacto Verde, Ucrania/Rusia.

Códigos JEL: F53, P18, H23, H87, Q54, F64, F68.

Contents

1 Introduction: climate change and the need for action

According to current scientific consensus, the rise in average global temperatures is caused, almost entirely, by the accumulation of greenhouse gas (GHG) emissions as a result of human activity.[1] The consequences of climate change in terms of rising average temperatures and more frequent extreme meteorological events will increase if the mitigation policies to curb – and reverse – net GHG emissions are not applied sufficiently robustly and worldwide, with a substantial – albeit uneven – economic impact across regions and economic groups. There is great uncertainty surrounding the path of climate change and its economic impact but, as various studies show,[2] it will certainly have serious consequences for life on earth in the long term if no action is taken to contain it.

The physical risks associated with climate change will increase with time if mitigation measures are not introduced. But these measures also have short and medium-term costs, namely the transition costs associated with gradually shifting the productive model away from activities that generate CO_2 and GHG emissions, towards zero-carbon activities. Moreover, these transition costs are spread unevenly not only across countries and regions, which each have different starting points in terms of GHG emissions, but also across social and economic groups, as energy expenditure accounts for an inversely proportional share of their income and wealth. However, the potential benefits of mitigation and adaptation policies will be perceived in the longer term. There is, therefore, a time lag between the cost and benefits of the fight against climate change. This makes execution of the ambitious measures needed to curb climate change more difficult, as illustrated by some estimates of the effects of global warming and of possible measures to be taken to mitigate its impact on activity in the long term.[3]

A range of regulatory, fiscal, social and structural policies are needed to drive climate change that will incentivise and encourage the necessary changes to the productive model.[4] These policies may include measures – such as carbon taxes or emission trading schemes (ETSs) – designed to ensure that polluters internalise the externalities of their carbon emissions. Protection measures may also be adopted for the social and economic sectors most exposed to the structural changes in production and consumption, together with support measures for the investment efforts this economic transformation entails. The scale of this challenge and the global nature of climate change require that the measures to be adopted be designed methodically, according to a targeted, coordinated and global approach. A clear path, backed by international consensus and with an optimal degree of certainty, is a necessary condition to attract the private investment that will make change possible.

1 See the World Meteorological Organization (WMO) (2021) and the Intergovernmental Panel on Climate Change (IPCC) (2021).

2 ECB and ESRB (2021).

3 See Chart 4.4 (p. 228) in Annual Report 2021, in Banco de España (2022), or Box 3 (pp. 45-46), in ECB and ESRB (2021). The notable differences between these two references reflect the high level of dispersion of estimates of the effects of global warming and of the mitigation measures in the long term.

4 The third part of the IPCC's Sixth Assessment Report (AR6) (see IPCC (2022)) finds that action over the next few years will be critical to limiting global warming.

This paper describes the initiatives, agreements and international coordination processes required to address climate change, paying special attention to the main international institutions and fora. The ambitious policies being rolled out by the EU are set against this international backdrop and afford Europe a leading position in the face of this global challenge. However, before outlining the contents of this paper, mention must be made of the potential consequences that the recent Russian invasion of Ukraine may have for the implementation of climate change policies and the decarbonisation process. Russia is an extremely important supplier of fossil fuels for the EU, and the sanctions imposed after the invasion and the impact of the war on trade flows and on fossil fuel prices could result in significant deviations from the planned path towards climate neutrality. On the one hand, higher energy prices, together with the desire to eliminate energy dependence on Russia as soon as possible, might act as a catalyst for renewables, making them more competitive compared with fossil fuels, and drive greater energy efficiency. On the other hand, the high prices of gas and other energy sources could entail a step backwards, insofar as the cost of decarbonisation will be more difficult to assume, both economically and socially, as shown by the increase observed in coal consumption in some countries.

On a global scale, the Russian invasion may open up some cracks in the international cooperation that is indispensable for the fight against climate change. This highlights the connection between geopolitics and the fight against climate change, and how strategies to reduce dependence on polluting energy sources and increase the diversification of the commodities needed to produce clean energy may be affected by events that have nothing to do with the fight against climate change.

With this reservation, Section 2 of the paper describes the institutional framework that underpins the fight against climate change, namely the main fora, institutions and instruments – in particular, the work of the G20 and the IMF – and the content of the key climate agreements. Section 3 presents an in-depth analysis of how the EU is meeting its international commitments, developing a broad set of policies to address global warming, which have meant that it has now become the main effective contributor to lower GHG emissions. This is followed, lastly, by some conclusions.

2 International action to tackle climate change

Just as the great financial crisis triggered changes to the international[5] and European[6] financial architecture, with the introduction of new functions and instruments and the establishment of new institutions, the climate challenge is creating new, ambitious and multilateral initiatives. This transformation, which has been very significant in recent years and

Table 1
MAIN MULTILATERAL ORGANISATIONS AND FORA COMMITTED TO COMBATTING CLIMATE CHANGE (a)

	Multilateral fora	Multiregional institutions	Regional institutions
Fora with power to adopt agreements	— UN (UNFCCC), COP (Conference of the Parties) — G20, G8, MEF (Major Economies Forum on Energy and Climate), CFMCA (Coalition of Finance Ministers for Climate Action)		
Supervision, analysis and advice	— Oversight of compliance with national commitments (NDCs) and technical and technological advice: UN (UNFCCC), COP	— Macro: IMF, World Bank, OECD — Finance: IMF, NGFS (Network for Greening the Financial System), BIS, FSB (Financial Stability Board), IAIS (International Association of Insurance Supervisors)	— Macro: Multilateral development banks (MDBs)
Development financing	— Channelling of financial intermediation funds: UN, CAAC (Climate and Clean Air Coalition)	— Through Climate Investment Funds (CIF) and own funds: World Bank — Through own funds: IMF	— Through Climate Investment Funds (CIF) and own funds: MDBs
Technical assistance	— Technology: UN (and agencies), CAAC	— Macro and finance: IMF, World Bank — Finance: CTA (Central Banks' and Supervisors' Climate Training Alliance)	— Macro and finance (MDBs)
Data	— Financial data dissemination: G20 Data Gaps Initiative	— Financial data dissemination: IMF, FSB, OECD — Climate policies and measures: IEA (International Energy Agency), IRENA (International Renewable Energy Agency) — Climate taxonomy: FSB	
	— Financial flows for climate change action: UN (UNFCCC)	— Financial flows for climate change action: World Bank	— Financial flows for climate change action: MDBs

SOURCE: Banco de España.

a Excluding the EU.

5 See Banco de España (2011 and 2012).
6 See ECB (2011).

remains ongoing, is taking place at global and regional multilateral fora and institutions and also at the national level. Table 1 depicts in schematic form the complex structure of the main multilateral players in the area of climate change.[7]

2.1 International agreements since the Paris Agreement

In just two years, international action against climate change shifted from being an essentially environmental question, as reflected in the first international agreement on climate change reached in Rio de Janeiro in 1992, to recognition of the human impact on this change and consideration of its economic implications with the adoption, in 1994, of the United Nations Framework Convention on Climate Change (UNFCCC).[8] Since then, important steps have been taken. Under the Kyoto Protocol,[9] adopted in 1997 by the Conference of the Parties (COP),[10] developed countries were set – for the first time – the goal of reducing CO_2 emissions. The agreement was abandoned in 2001 by the United States. This delayed the process until 2015 when, after successive conferences where little progress was made, the Paris Agreement was signed.[11]

The Paris Agreement is a historic milestone, as it is the first universal international climate change treaty.[12] Applicable since the expiry of the Kyoto Protocol in 2020, the Agreement establishes the Parties' commitment to a common aim: limiting global warming to below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C. The Agreement also envisages the steps to be taken to strengthen mitigation and adaptation measures and enhance resilience to climate change, including a financial framework, a technical framework and a framework for transfer of technology to the most vulnerable countries. To achieve this goal, the signatories undertake to reduce their GHG emissions, executing their respective climate action plans (nationally determined contributions (NDCs)), which they submit every five years. They also undertake, from 2024, to report transparently on the actions taken. The global data thus compiled will be used to formulate recommendations for successive plans.

In 2021, a year later than initially planned owing to the pandemic, COP26 was held in Glasgow. This conference provided new momentum in the fight against climate change, with notable progress on a political level, in the form of measurable actions to reduce emissions, enhance resilience and provide the necessary financing (see Figure 1). The Glasgow agreement – and this is especially important – includes the joint commitment of the United States and China to boost climate cooperation. Although this greater ambition is promising for the future, it was also observed that the progress made to date is insufficient to meet the goals of limiting global

7 For more details, see Annex 1. On global and European sustainable finance initiatives, see Banco de España (2021).

8 The UNFCCC now has near-universal membership (197 countries). The UN Convention on Biological Diversity and the UN Convention to Combat Desertification, which cooperate with the UNFCCC through the Joint Liaison Group, were also created in Rio de Janeiro.

9 Signed by 38 countries (including Russia among a number of emerging countries) plus the EU.

10 The COP, created in 1992 to curb climate change, is the maximum authority of the UNFCCC.

11 The Paris Agreement entered into force in 2016 when the double threshold criteria were agreed: ratification by 55 countries that account for at least 55% of global emissions. For the current ratification criteria, go to this link.

12 The Paris Agreement is legally binding on the ratifying countries, although there are no penalties for non-compliance.

Figure 1

COP26: PROGRESS, ASSESSMENT AND NEXT STEPS (a)

MITIGATION

- **Goal:** The goal of limiting global warming to 2ºC was maintained, with efforts to reach 1.5ºC (Paris, 2015), and a roadmap was adopted for halving CO2 emissions over the next decade and achieving net zero CO2 emissions by 2050
- **Nationally determined contributions (NDCs):** (–) The commitments submitted are not sufficient to achieve the goals and carbon neutrality in 2050, although (+) the goals for 2030 are more ambitious and, for the first time, include large emitters such as India and Brazil. (–) However, there are still no penalties for non-compliance, only a "name and shame" system
- **Lower carbon use:** (+) An important new issue on which consensus is difficult to achieve: the need to reduce carbon use and eliminate fuel subsidies was recognised, and over 40 countries, including some large carbon consumers, committed to speeding up the reduction (b), although (–) no deadlines or monitoring guarantees were established
- **Other agreements/initiatives:**
  - Global Methane Pledge, signed by 109 countries (c) (responsible for 50% of methane emissions)
  - Commitment by international banks and some countries (d) to stop financing fossil fuels and coal plants
- **Next steps:** (+) The Parties agreed to update and strengthen their NDCs and their long-term strategies (2050)

ADAPTATION AND RESILIENCE

- **Financing:** (+) Commitment to increase financing, doubling the 2019 level in 2025, and with an equal split between mitigation and adaptation policies, but (–) still below the goal of US$100 bn per annum (e) (Paris, 2015). (+) 5% (2% in Paris, 2015) of the amount raised by the UNFCCC market mechanism (Art. 6.4) will be used to cover the adaptation costs of vulnerable countries
- **Next steps:**
  [2022-2024] A work programme (f) was adopted to define the global goal on adaptation
  [To 2025] A new collective climate financing goal will be set (>US$100 bn, according to the needs and priorities of the developing countries (g))
  [2022-25] Glasgow Dialogue, to discuss the arrangements for the funding of activities to avert, minimise and address loss and damage

MECHANISMS AND IMPLEMENTATION

- **Carbon market** (agreed in Paris, but not operational): (+) Notable progress towards implementation of the Paris Rulebook: full application of Art. 6 (market mechanisms) and an international carbon market framework (regulating the use of units produced since 2013 and the cancellation of 2% of carbon credits per annum). (+) This agreement will contribute to greater cooperation, financing and private sector involvement, but (-) some aspects remain outstanding
- **Transparency:** (+) Completion of the negotiations on the Enhanced Transparency Framework (ETF) relating to: goals (NDCs); national GHG emissions and absorptions; financial resources; technology transfer and development, and capacity building provided and received
- **Loss and damage:** (+) Progress in the definition of the Mechanism for Loss and Damage associated with Climate Change Impacts (Warsaw, 2013), (-) but with no agreement on a new facility. (+) Greater technical support: the Santiago Network (Chile, 2019), which provides technical assistance to countries to address and manage loss and damage, was strengthened
- **Next steps: The loss and damage mechanism will be a key issue at COP27 in Egypt**

SOURCE: Banco de España.

a At COP26 it was also agreed to halt and reverse forest loss and land degradation by 2030. By November 2020 this agreement had been ratified by 141 countries, including Brazil, Russia and Indonesia, which account for 90% of the world's forests.
b The final wording ("phase down") was less ambitious than the original wording ("phase out") following opposition from China and India.
c With the notable absence of several large emitters: China, India and Russia.
d With the notable absence of producers (Angola, Nigeria) and financers (China, Japan and South Korea).
e The OECD estimates that financing totalled US$79.6 bn in 2019 and was still below US$100 bn in 2020 (OECD, 2021).
f The Glasgow-Sharm el-Sheikh work programme on the global goal on adaptation will help to inform on the progress made on the global goal on adaptation and to build countries' resilience.
g According to the latest UNEP report, adaptation costs and needs are five to ten times greater than current financing flows.

warming to 1.5°C, and the intermediate goals of halving CO_2 emissions compared with 2010 levels over the next decade, and of reaching the carbon neutral emissions target[13] by 2050.

13 That is, that the amount of CO_2 emissions put into the atmosphere is equal to the amount of CO_2 emissions removed from the atmosphere.

At the Glasgow conference, in addition to the endorsement of the latest IPCC report, the first round of NDCs was presented and some aspects of the Paris Agreement were fleshed out. Also, the Paris Rulebook was completed and, with this, the transition from the Kyoto Protocol was concluded.

2.2 G20 activity and climate change

In recent years the G20 has been discussing climate change from various standpoints: economics and finance, in the different groups of what is known as the "finance track" and on the Financial Stability Board (FSB); and energy, more directly climate-related. For several years, this work has been reflected in the communiqués released by finance ministers and central bank governors, by national leaders, and more recently by energy and climate ministers. These communiqués are the maximum expression of the agreements reached by the G20.

As is well known, the G20 is an informal body and, in consequence, its agreements are not binding, but they are significant in several aspects. Its very idiosyncrasy places it in a unique position to address global issues, especially in crisis situations such as that caused by the COVID19 pandemic. The composition of the G20 provides a certain balance between developed and emerging countries, affording it a degree of implicit legitimacy to discuss global matters. This, in turn, makes it potentially more effective than other international bodies and fora, with which it works in close collaboration. These issues notably include "global public goods", which encompass environmental goals and mitigation of climate change.

In this respect, the COVID19 crisis has been described[14] as a chance to make a virtue of necessity and, starting out from a drive towards multilateralism within the G20, to take the opportunity to adopt necessary measures. In many respects, in other circumstances, it would have been more difficult for agreement to be reached. In addition to global health policies, these include climate change-related mitigation, adaptation and transition policies.

Climate-related issues regularly figured on the G20 agenda before the onset of the pandemic, but with the COVID-19 crisis they have gained importance. The latest G20 communiqués – the leaders' declarations and those issued by finance ministers and central bank governors and by energy and climate ministers – have flagged these policies as priorities, backing the work of the various groups that fuel the discussions. In the latest G20 Rome declaration (31 October 2021),[15] the commitments adopted included, among others, delivering national plans that allocate sufficient financial resources to mitigating climate change and adopting innovative and clean solutions to achieve zero emissions and cost parity, ensuring that the costs of these policies are not higher in the less developed countries, and to ensure widespread access to clean energy. The specific agreement reached for reducing methane emissions, considered to be one of the most viable, rapid and economic ways to mitigate climate change, includes the creation of an international methane

14 Okonjo-Iweala, Shanmugaratnam and Summers (2021).

15 http://www.g20.utoronto.ca/2021/211031-declaration.html.

emissions observatory (IMEO).[16] In its plans for 2022, the Indonesian G20 presidency has essentially assumed these work streams.

The process of adoption of agreements at the G20 generally reflects the different priorities of the member countries. Specifically, in the case of climate change, there is a de facto leadership of the developed countries over the emerging countries, which are more sensitive to the costs of the transition and mitigation policies. Despite these difficulties for some members, work progressed during the COVID19 crisis, with some valuable achievements being made, with the developed countries generally leading by example.

Climate change is a specific focal point, albeit from different standpoints, of the work of four of the finance track groups and the FSB.

— The **Framework Working Group (FWG),** which focuses on macroeconomic aspects, has undertaken a series of analyses on the risks of climate change to growth and the impact of transition policies. Its work plans include these issues, and also a cost and benefit analysis of these policies.

— For the **International Financial Architecture Working Group (IFAWG),** climate change has policy design implications for international financial organisations whose priorities – especially in the case of the IMF – currently include mitigation, adaptation and transition policies (see Section 2.3).

— An increasing portion of the work of the **Infrastructure Working Group (IWG)**[17] is concentrated on the sustainability of global infrastructure investment, essentially from the standpoint of its impact on climate. The scale of global infrastructure investment and its environmental impact highlight the importance of the G20's work in this field.

— The **Sustainable Finance Working Group (SFWG)** focuses on drawing up a sustainable finance roadmap and a synthesis report, in line with the Paris agreement, along with a taxonomy and comparable reporting standards within its remit, to enable progress in terms of achievement of sustainability goals to be assessed. The aim is that the work of this group be gradually expanded to include other aspects not specifically related to climate change, such as biodiversity. The SFWG's work is complementary to the work of the **FSB,** in collaboration with the **Network of Central Banks and Supervisors for Greening the Financial System (NGFS),**[18] and is closely related to the work of both the FWG and the IWG.

16 The Observatory was officially launched at the G20 summit, under the aegis of the UN Environment Programme UNEP) and the EU.

17 The IWG's work is focused on boosting global infrastructure investment, to meet the chronic shortage of investment owing to market failures. The shortage is addressed through more favourable regulations, enhanced information availability, infrastructure quality standards and harnessing the circular economy.

18 The NGFS is a forum of 83 central banks and supervisors, established at the Paris summit in December 2017 to foster collaboration between different organisations to meet climate goals.

Beyond the finance track, the G20 has two working groups devoted to climate-related issues – the **Climate Sustainability Working Group and the Energy Transition Working Group** – whose work was reflected in the conclusions of the first G20 Energy and Climate Ministerial Meeting in 2021.

In all these climate and energy-related activities, the G20 cooperates actively with numerous international fora, both in the public and the private sector. As mentioned earlier, these include very especially, among many others, the IMF and the multilateral development banks (MDBs), the OECD and the Bank for International Settlements (BIS), especially in the work of the FSB.

2.3 IMF climate change-related functions and recommendations

In view of its multilateral nature and quasi-universal membership, the IMF is called to address, within its remit, this global challenge that countries cannot handle individually. In recent years, the Fund has actively supported its members in addressing climate change. Although environmental concerns are not new for the IMF, in the past they were not afforded the importance that climate change is now acquiring in the Fund's policies (see Annex 2). This challenge is gradually being integrated into the IMF's functions, in accordance with its mandate (see Box 1) and in view of the physical, mitigation, transition and adaptation risks[19] it entails for the Fund's members. IMF staff will have to specialise in the economic implications of climate change, but it is essential that the Fund continue to strengthen its coordination with other institutions, exploiting their respective comparative advantages. Table 1 illustrates the IMF's areas of activity and its areas of collaboration with other institutions.

In its multilateral reports (IMF (2020a)), the Fund warns of the risk that the measures adopted to achieve climate goals may fall short of the goal, and calls for urgent, global and coordinated action to address the "climate emergency" (IMF (2022b)). To hold global warming below 2°C, the Fund estimates that additional measures equivalent to a tax of at least US$75 per tonne of CO_2 would be needed up to 2030 (IMF (2021b)). International coordination and agreement with the main polluters is essential. In the fiscal policy area, the Fund's main recommendation for curbing global warming is for a global agreement to be reached on carbon taxes,[20] considered to be the most efficient way to achieve decarbonisation. At the national level, the IMF proposes measures such as changes to fossil fuel subsidies, promoting public investment in green energy, and transfers to vulnerable households to offset the impact of the energy transition (IMF (2021f)).

Designing carbon taxes is a delicate matter. The Fund proposes an agreement on an "international carbon price floor" (ICPF), initially applicable to a limited number

19 For the IMF, **"mitigation"** includes actions designed to reduce GHG emissions and reverse climate change; **"adaptation"** refers to actions designed to increase resilience to climate change; and **"transition"** relates to economic transformation (policies, strategies, investment, etc.) to reduce the impact on climate. Each of these areas has implicit risks, on top of the physical risk of climate change, i.e. the impact of adverse weather events.

20 To achieve carbon neutrality in 2050, the IMF proposes (IMF (2020a and b)) green fiscal stimulus measures (subsidies for renewable energy generation and green public investment), a gradual increase in carbon prices (from US$6-$20 per tonne of CO2 to US$40-$150 in 2050) and compensatory transfers for vulnerable households.

of large emitters (IMF (2021e)).[21] A flexible and fair ICPF[22] is more efficient than the carbon border adjustment mechanism (CBAM);[23] these may be temporary options (albeit not devoid of implementation difficulties) to help prevent unwanted effects on competition, as well as carbon leakage. The transition cost of the IMF's proposed carbon pricing mechanism, to be implemented over three decades, would be outweighed by the benefit of preventing climate change. As a consequence of this price floor, carbon prices would subsequently fall as technological innovations develop (IMF (2020a)).

The IMF also advocates reforming fossil fuel subsidies, to make them more efficient and prevent their negative effects (on pollution and on income inequality), along with the efficient use of resources and public expenditure. In addition to reducing CO_2 emissions by 36%, the Fund estimates that appropriate taxation of fossil fuels – eliminating the subsidies – would provide revenue amounting to 3.8% of global GDP in 2025 (IMF (2021c)). To be successful, this reform must satisfy several requirements: it must be ambitious, long-term, transparent, well communicated and phased in, it must envisage efficiency gains at state-owned enterprises, it must include measures to protect the most vulnerable, and it must include automatic price mechanisms.

The IMF warns that the financial system is also exposed to climate change risks, in particular risks to financial stability (IMF (2022a)), and underlines the importance of transparency and data standardisation (IMF (2021f)). **Transparency and international comparability** are essential to boost market confidence and preserve financial stability and sustainability. International coordination is critical to develop a climate information architecture based on comparable, reliable and high-quality data, harmonised standards, and international taxonomies and classification approaches, to align investments with climate goals (IMF (2021a)). The Fund is working on several fronts, including the G20 Data Gaps Initiative, in coordination with the FSB, IFRS and the World Bank, which will have an important climate change component. In addition, the IMF's Climate Change Dashboard, developed together with other organisations (the OECD, the World Bank, the UN, Eurostat, the FAO, the IEA and the NOAA) to make countries' statistical data on climate change (GHG emissions, green finance, policies and risks) available to the public is now up and running.

21 The IMF argues that, with an ICPF of US$75 per tonne of CO2, the global warming target established in the Paris Agreement could be met by the end of the current decade. See also IMF (2021h).

22 A common minimum price will be set, with changes permitted according to the level of development and past emissions. The carbon price will apply to the energy and industrial sectors and will gradually be extended to other sectors and GHG emitters (IMF (2021c)).

23 This mechanism will allow domestic climate goals to be achieved, equalising the price of carbon between domestic products and imports.

3 The EU's policy action on climate change

The EU is committed to addressing climate change and is a global leader in this field. This commitment started decades ago, with its participation in the international initiatives of the 1990s (Rio Summit, Kyoto protocol) and intensified in the first decade of the 21st century with the publication of a first package of energy and climate-related measures. This package, adopted in 2007, included targets for reducing GHG emissions in the EU and for transforming the energy sector by 2020.[24] It also defined a series of instruments and regulations that continue to be the basis for the EU's energy and climate policy. The objective of reducing emissions became more ambitious in 2014, with the setting of targets for 2030.

Under these policies GHG emissions have decreased significantly in the EU. Between 1990 and 2018 they fell by 23%, while GDP rose by 61%. Economic growth has thus effectively become decoupled from emissions growth.

The European Green Deal, adopted in December 2019, embodies the EU's new commitment to tackling climate change (see Sections 3.1 and 3.2). It goes a step further, setting the more ambitious target of reducing net GHG emissions by at least 55% by 2030 and committing to climate neutrality by 2050. The European Green Deal presents "a roadmap for making the EU's economy sustainable, by turning climate and environmental challenges into opportunities across all action areas and making the transition just and inclusive for all". In other words, climate transition becomes one of the essential pillars of all its policies and the basis for its growth model.

The recent invasion of Ukraine by Russia (in February 2022) may lead to changes in the EU's climate strategy and to faster implementation of the initial plans for transforming the energy model. The EU imports 90% of the gas it consumes and Russia provides more than 40% of all the gas consumed in the EU. In addition, 27% of oil imports and 46% of coal imports also come from Russia; these percentages differ widely between EU countries.[25] Given the importance of Russia's oil and, above all, gas supplies to the EU, the Member States have adopted a political commitment to accelerate the policies aiming to decarbonise energy, reduce the EU's reliance on gas and its influence on energy price setting in the EU, and reach a model consistent with the European Green Deal targets (see Section 3.3). However, the disruptions and higher costs in the European and global energy markets as a result of the war may also make it economically and socially difficult to fulfil such goals.

The transition to a climate-sustainable economy, as set out in the European Green Deal, requires a huge investment effort. This is why, beyond the regulatory and sectoral measures envisaged in the European Green Deal, sufficient funding must be raised by the public and private sectors combined (see Sections 3.4 and 3.5). In the case of the public sector, the EU has set clear goals regarding the percentages to be spent on climate change

24 20 20 by 2020.

25 See European Commission (2022a).

actions via its main budgetary instruments (the multiannual financial framework – MFF 2021-2027 – and the recovery fund – NGEU). It has also established a State aid framework to ensure that Member States are able to provide the economic support required. As regards private capital, a series of schemes to attract investments and a sustainable finance strategy have been launched.

3.1 The European Green Deal

In its Communication on the European Green Deal,[26] the European Commission (hereafter, the Commission) presented a master plan of the policies and measures needed to transform the EU's economy and ensure an efficient use of resources and the reduction of net emissions, stop climate change, reverse the loss of biodiversity and reduce pollution.[27] This roadmap is currently being implemented through a series of both legislative and non-legislative actions.

The measures envisaged in the European Green Deal encompass all sectors of the economy, including transport, energy, agriculture, construction and industry (especially iron and steel, cement, ICT, textiles and chemicals). One of the first steps within this strategy was the publication of the proposed European Climate Law.[28] Figure 2 summarises the lines of action of the European Green Deal, which are also described in detail in Box 2.

3.2 The European Climate Law and its implementation

As mentioned earlier, the European Green Deal enshrines the political commitment to achieve climate neutrality (net zero GHG emissions) in the EU's economy by 2050. The European Climate Law[29] enshrines this binding commitment and provides the legal framework for meeting it. To progress towards an equilibrium between GHG emissions within the Union and their absorption, and achieve negative net emissions from 2050, the Law includes an (also binding) intermediate target for 2030 of reducing emissions by 55% compared to levels in 1990. Rules are also introduced to ensure ongoing progress in pursuit of the global adaptation goal established in the Paris Agreement[30] and the Commission is entrusted with setting a climate target for 2040. To this end, the Commission will present a proposal, accompanied by a report and an indicative budget regarding GHG emissions for the 2030-2050 period.

The Law provides for the establishment of a European Scientific Advisory Board on Climate Change. The Board's tasks include, among others, analysing the latest scientific conclusions of the Intergovernmental Panel on Climate Change (IPCC) reports, providing scientific advice and publishing reports on EU measures, as well as raising awareness on climate

26 See European Commission (2019) and its Annex.

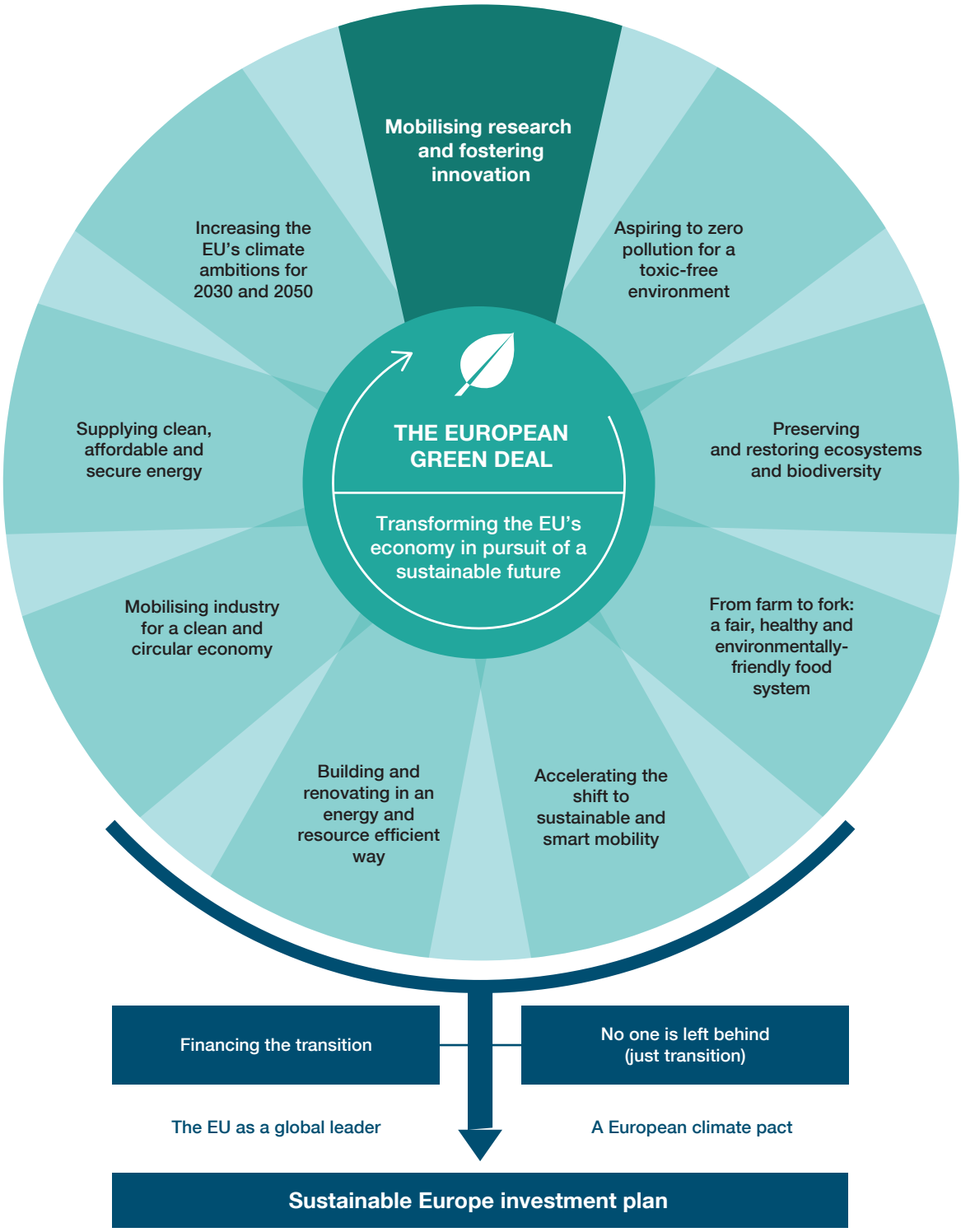
27 This plan is part of the EU's strategy to implement the United Nation's 2030 Agenda and sustainable development goals. See https://sustainabledevelopment.un.org/post2015/transformingourworld.

28 See COM/2020/80 final.

29 Regulation (EU) 2021/1119. See OJ L 243, 9.7.2021, p. 11/17.

30 See OJ L 282, 19.10.2016, pp. 4-18.

Figure 2
THE EUROPEAN GREEN DEAL



SOURCEE: European Commission.

change and its effects. The European Environment Agency shall designate the 15 members of the Advisory Board, for a four-year term, who shall have broad specialised knowledge and professional experience in the field of climate and environmental science. In addition, Member States are to create their own advisory bodies to provide specialised scientific advice and to initiate a dialogue on climate and energy with the local authorities, civil society, entrepreneurs, investors and other stakeholders. The regulation also requires Member States to submit to the Commission their 30-year strategy, which must be renewed by 1 January 2029 and every 10 years thereafter; they should update that strategy every five years, where necessary.

With the entry into force of the European Climate Law in July 2021, the Commission proposed an initial set of measures to review and update the EU's main legal instruments to reach the goal of reducing net GHG emissions by at least 55% by 2030. This package, known as **"Fit for 55",** encompasses measures in the fields of climate, energy, land use, transport and taxation, which are interrelated and mutually complementary:

— First, as regards the legal instruments available to manage net GHG emissions, the Commission proposes strengthening the **EU Emissions Trading System (ETS),**[31] by including new sectors, further lowering the overall emission cap and increasing its annual rate of reduction. Member States should also spend the entirety of their emissions trading revenues on climate and energy-related projects. For non-ETS sectors,[32] the **Effort Sharing Regulation** (ESR)[33] will assign new strengthened emissions reduction targets to each Member State, recognising the different starting points and capacities of each one. Lastly, as regards the removal of carbon from the atmosphere, the **Regulation on Land use and Forestry (LULUCF)**[34] sets an overall EU target for carbon removals by natural sinks and the related national Member State targets, which will be reinforced and extended to 2035.

— Second, the Commission proposes a series of measures on energy generation and use (a sector responsible for 75% of EU emissions) which aim to accelerate the transition towards a more sustainable energy system. The **Renewable Energy Directive** (RED)[35] will set the target of generating 40% of EU energy from renewable sources by 2030. The **Energy Efficiency Directive**[36] (EED) will establish a more ambitious binding annual target to reduce energy consumption in the EU. The two directives will also set Member States' contributions to the EU's aggregate targets. The EED will thus nearly double Member States' annual energy savings obligations.

31 The EU ETS, established in 2005, sets maximum (and decreasing) limits on annual CO2 emissions for a set of sectors. Covered firms trade emissions below the cap, thus setting a price for carbon (https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en).

32 Buildings, road and national maritime transport, agriculture, waste and small industry.

33 See European Commission (2021f).

34 See European Commission (2021g).

35 See European Commission (2021h).

36 See European Commission (2021i).

— The transport measures envisaged in the "Fit for 55" package aim to accelerate the deployment of low emission transport modes, as well as the infrastructure and fuels required to sustain them. These actions refer to road, air and maritime transport.

— As regards taxation, the purpose of the revision of the **Energy Taxation Directive**[37] is to reflect the EU's energy and climate policies, removing outdated exemptions and the low tax rates which incentivise the use of fossil fuels. The tax system for energy products should safeguard and improve the single market and support the sustainability target, establishing adequate incentives. The Commission is also proposing a **Carbon Border Adjustment Mechanism** (CBAM) that will put a price on carbon in imports of a range of products, with the aim of preventing EU climate action from translating into "carbon leakage" and ensuring that European emission reductions truly contribute to lowering global emissions.

— Lastly, to mitigate the costs which the measures necessary for the climate transition will entail for the most vulnerable social and economic groups, the Commission proposes the creation of a **Social Climate Fund** that will be financed with 25% of the revenues generated under the ETS from fuels for road transport and construction.

In December 2021 the Commission published two new sets of proposals on "energy and climate" and "efficient and sustainable mobility" which continue developing the roadmap established by the European Green Deal. The first package includes a series of proposals further implementing the "Fit for 55" package, aimed at decarbonising the gas market in the EU and fostering green hydrogen by creating a market for this fuel. A framework is also proposed to reduce methane emissions.

3.3 The response to the pandemic and the war in Ukraine: REPowerEU

Following Russia's invasion of Ukraine (which started on 24 February 2022), the EU has reaffirmed its commitment to progress in the energy transition, not only to tackle the consequences of climate change but also to strengthen its autonomy and ensure energy supplies.

Against this backdrop, on 8 March 2022, the Commission published the **REPowerEU: Joint European Action for more affordable, secure and sustainable energy**[38] communication. It sets the basis for eliminating Europe's dependence on Russian fossil fuels by 2030,[39] establishes a roadmap to respond to the rise in energy prices – which

37 See European Commission (2021j).

38 See European Commission (2022a).

39 To this end, the Commission is considering: (i) increasing natural liquefied gas and pipeline imports from non-Russian suppliers, and obtaining higher levels of biomethane and hydrogen; and (ii) reducing dependence on fossil fuels in households, buildings and industry, and cutting red tape for installing renewable infrastructures.

rose sharply owing to supply-demand mismatches deriving from the COVID-19 pandemic and have soared in the wake of the war in Ukraine – and proposes ensuring minimum levels of gas reserves in the EU ahead of each winter, starting in October 2022.

The Commission took another step towards fulfilling the objectives of REPowerEU on 23 March 2022, when it published a communication[40] in which it assesses possible measures to curb price rises in the energy market, and a legislative proposal which addresses the obligation for Member States to fill 80% of their gas storage capacity by 1 November 2022 and 90% in subsequent years. The Commission has also committed to assessing possible measures to optimise the design of the electricity market over the coming months.[41]

3.4 The EU's policy contribution to climate transition: MFF 2021-2027 and the NGEU recovery fund

As noted earlier, achieving the European Green Deal targets will require a very significant volume of investments. Europe will need approximately €390 billion additional investments per year this decade to meet the climate, energy and transport targets, plus around €130 billion for other environmental targets.[42] All this will require mobilising both public and private sector funding.

In early 2020 the Commission presented the **Sustainable Europe Investment Plan,** linked to the European Green Deal (see Figure 3), to contribute to meeting the investment needs of the climate transition. The plan is a combination of legislative and non-legislative initiatives with three goals: (i) mobilising funds – initially estimated at €1 trillion up to 2030 – out of the EU's long-term budget and other public sources of financing, and by leveraging private investments through the InvestEU scheme and the Just Transition Mechanism, (ii) creating a framework to facilitate private and public sector investment decisions; and (iii) providing support to general government and to project promoters to create a sound portfolio of sustainable projects. The European Investment Bank has undertaken to devote 50% of its projects portfolio to sustainable investments and is the main actor involved in implementing InvestEU.

Against this backdrop, in July 2020 European leaders agreed **to devote 30% of the EU's new long-term budget, MFF 2021-2027, to climate action. At the same time, it was also agreed to allocate a similar percentage of the NGEU recovery fund to climate.** Within the NGEU, Member States' national recovery and resilience plans (RRPs) under the **Recovery and Resilience Facility** (RFF) should dedicate at least 37% of expenditure to investment and reforms related to climate sustainability. The available figures indicate that this percentage is actually 40% in the plans presented.

40 See European Commission (2022a).

41 On 18 May 2022 the European Commission adopted the REPowerEU Plan, in compliance with its REPowerEU Communication of 8 March 2022 and its Communication of 23 March 2022. This document was published after this Occasional Paper had been completed. For more information, see https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131.

42 See European Commission (2022b).

Combating climate change and environmental degradation is a common challenge, but not all regions and Member States have the same starting point. The **Just Transition Mechanism,** which was proposed at the same time as the Sustainable Europe Investment Plan, aims to support the transition in those regions that are more reliant on carbon-intensive activities. It will also support citizens most vulnerable to the transition, facilitating their access to professional re-skilling schemes and employment opportunities in new economic sectors.

Likewise, to help Member States provide the support required to reach the European Green Deal's targets, the **Guidelines on state aid for climate, environmental protection and energy 2022**[43] were published on 18 February 2022. These guidelines expand the **categories of investments and technologies which Member States can support**[44] **to comply with the European Green Deal and the measures envisaged in the "Fit for 55" package** including, among others: (i) aid for the reduction and removal of GHG emissions, including through support for renewable energy; ii) aid for the improvement of energy efficiency in buildings; iii) aid for the acquisition of electric vehicles; and iv) aid for the deployment of recharging or refuelling infrastructure for electric vehicles.

Also, against the backdrop of the measures taken to mitigate the economic impact of the war in Ukraine, the Commission has adopted a State aid Temporary Crisis Framework that will enable Member States to (i) grant limited amounts of aid to firms affected by the crisis or by the related sanctions and countersanctions; (ii) ensure that sufficient liquidity remains available to businesses; and (iii) compensate companies for the additional costs incurred owing to exceptionally high gas and electricity prices. This temporary framework includes safeguards and will be in force until 31 December 2022.

3.5 Financing the climate transition: the role of private capital markets

To facilitate the private sector's contribution to financing the environmental transition, in July 2021 the Commission published its **Strategy for financing the transition to a sustainable economy** building on the 2018 Action Plan. The transition to a more sustainable economy requires the support of the financial sector, that should take into account these objectives and steer investments towards more sustainable projects. As shown in Figure 3, the package of measures published by the Commission is based on three pillars to achieve its goals: (i) the taxonomy: a robust and scientific classification system allowing financial and non-financial corporations to share a common definition of sustainability; (ii) a mandatory disclosure regime for financial and non-financial corporations, providing investors with information to make informed sustainable investment decisions;[45] and (iii) a set of investment tools (benchmarks, standards and labels) that make it easier for financial market participants to align their investment strategies with the EU's climate and environmental goals.

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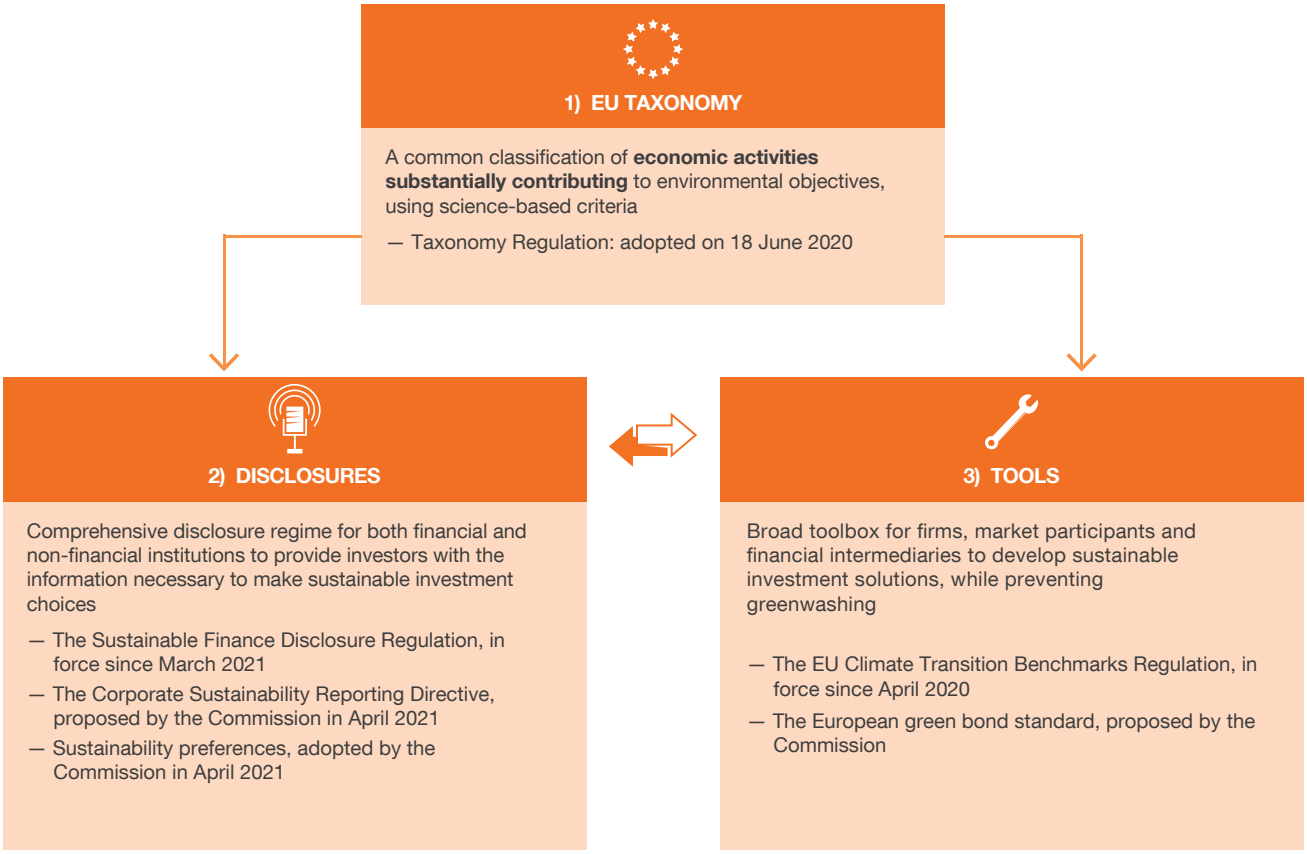
43 See European Commission (2022b).

44 Article 107 of the TFEU prohibits State aid that distorts competition in the internal market. However, in some circumstances, State aid can be considered compatible with the internal market.

45 Disclosure requirements include the impact of a firm's activities on the environment and society, as well as the business and financial risks faced by a firm owing to its sustainability exposures (the "double materiality" concept). See European Commission (2021/390 final.

Figure 3

THE EU SUSTAINABLE FINANCE FRAMEWORK



SOURCE: European Commission.

The Commission has also presented a proposal for a Regulation on **European green bonds** (EU GBS)[46] which is currently being debated by co-legislators. The proposal will set up a voluntary standard to help investors channel their investments towards sustainable projects. Until the EU GBS is approved, and with the aim of achieving 30% of NGEU financing[47] through green bonds, the Commission has launched a specific standard, backed by the investments and reforms to be implemented by Member States through their RRPs, under which it has already started to issue bonds. The EU aspires to become a large green bond issuer, thus contributing not only to financing a more sustainable and greener recovery post-pandemic but also to boosting European financial markets and to progressing towards the Capital Markets Union (CMU).

46 See European Commission (2021) 391 final.

47 See European Commission (2021b).

4 Conclusions

Despite the important agreements reached at COP21 (Paris, 2015) to stop climate change, the results obtained to date, noted at COP26 (Glasgow, 2021), show that the commitments made by the participating countries are not sufficient to achieve the goal of keeping global warming below 2ºC this century. The international community is committed to making renewed efforts towards this goal, on the understanding that, in the long run, the cost of not addressing climate change by far exceeds the costs of transitioning to a sustainable economy, even if these are high in the short run.

The EU's climate change goals (incorporated in the European Climate Law and implemented through various packages of measures, such as "Fit for 55") are ambitious and have helped generate a legal corpus and deploy policies that are in many ways pioneering. The EU has thus positioned itself as a key actor in pursuing globally agreed goals. Energy efficiency and the combination of energy sources are important policy goals for decoupling economic growth from energy consumption. At the same time, the amount and quality of the investment (and of the financing needed to carry it out) are essential if sustainability is to be compatible with long-term growth.

Russia's aggression against Ukraine and its implications for the energy markets and, in broader terms, for economies generally, introduces an additional element of uncertainty that may slow progress in addressing climate change (if transition costs surge or if the necessary international consensus for coordinated action is placed at risk). However, it may also be a driving factor, making renewable energy more competitive relative to fossil fuels. The EU is aware that it is necessary to embark firms on the fight against climate change, and to find a pace for fulfilling climate goals that enables the cost (in social and economic terms) to be acceptable in the short and medium term, introducing compensatory elements when necessary. One of the greatest risks that may stem from the war in Ukraine is precisely an increase in these social and economic costs in the short term.

International cooperation is necessary to address the climate change challenge. Cooperation has progressed globally, driven by the COP and the G20 and by the international bodies acting in the orbit of their leadership. In particular, the IMF already includes climate change issues in its analyses, recommendations and policies. In this setting, the EU plays an essential role, with its ambitious commitment to reducing GHG emissions. The CBAM, which the EU plans to launch to prevent carbon leakage to other territories, would be bolstered by agreement on an international carbon price floor mechanism, as is currently under debate in international fora and institutions (including the IMF). The EU is also preparing new environmental, social and governance (ESG) commitments and is firmly committed to climate transition in medium and low-income countries. All of this would contribute to reinforcing and maintaining the EU's leadership in the global climate transition.

Box 1

CLIMATE CHANGE AMONG THE IMF'S FUNCTIONS

In the pursuit of its habitual functions (supervision, lending and technical assistance), the IMF has been addressing the climate change challenge in an ad hoc manner, considering it "macro-critical" (IMF (2021d)) – on account of its potential or real impact on macroeconomic stability (supervision) or on achievement of a program's goals (lending) – and mindful of requests from country authorities. Within its new strategy (IMF (2021g)), climate change mitigation, transition and adaptation policies will be reflected more systematically in its supervisory activity.[1]

The **supervision** of individual countries will include assessment of their efforts to achieve the goals of the Paris Agreement (the nationally determined contributions (NDCs)) (mitigation), adapt to the new environment (transition) and strengthen their resilience to the physical risks of climate change (adaptation). Stress tests will also be used to assess the financial sector's ability to address climate change-related physical and transition risks.

The IMF can act as an important catalyst, channelling the **financing** needed to tackle climate change[2] and using the instruments it has in its power to grant climate change-related financing to its member countries. IMF funding is available to them to address the physical risks of climate change[3] and to adopt adjustment measures to adapt to climate change, provided they are significant in proportion to their balance of payments. Such programs may include fiscal measures (energy subsidy reforms, carbon pricing, etc.), transition to a low carbon economy (increased diversification) or adaptation to climate change (investment in critical infrastructure, guarantee of water supply, etc.). The IMF has recently approved a new instrument – the Resilience and Sustainability Facility (RSF) – to finance, inter alia, long-term structural policies to combat potential macroeconomic risks stemming from climate change.

In the **technical assistance** field, the IMF advises member countries on mitigation and adaptation policies (for example, on the introduction of carbon pricing or, in the event of natural disasters, for public finance or fiscal risk management), in some cases in coordination with other institutions (the World Bank, the IEA and the OECD). Moreover, together with the World Bank, it has developed a Climate Macroeconomic Assessment Program to assess countries' level of readiness for climate risks, risk management, mitigation and adaptation, the macroeconomic implications of their climate policy, and national processes (such as public finance management, which can inform their practices in the fight against climate change).

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1 The aim being to ensure that, each year, all the Financial Sector Assessment Programs (FSAPs) and some 60 Article IV consultations (possibly fewer depending on budgetary restrictions) address adaptation (approximately 20 consultations), transition (approximately 33 consultations) and mitigation (approximately 7 consultations of, among others, the 20 largest GHG emitters). Multilateral supervision will systematically include climate challenges that require mitigation policy coordination (IMF (2021d)).

2 The Fund estimates that some US$3-$4 trillion per annum will be needed.

3 Through the emergency funding instruments (Rapid Financing Instrument (RFI) and Rapid Credit Facility (RCF)).

Box 2

ACTIONS ENVISAGED IN THE EUROPEAN GREEN DEAL

The European Green Deal envisages a series of actions, in the form of legislative and non-legislative initiatives, aimed at achieving the following goals:

1 **Inclusion in legislation of the political ambition of being the first climate-neutral continent by 2050.** This goal was fulfilled with the enactment of the **European Climate Law,** which was proposed by the Commission in March 2020 and entered into force in July 2021. This Law makes the EU's emission reduction targets for 2030 legally binding and sets a realistic path towards climate neutrality by 2050.

2 **Widespread supply of clean, affordable and secure energy,** based on renewable energy development, carbon removal and gas decarbonisation. An additional target is reducing energy poverty and achieving affordable prices through the establishment of an integrated, interconnected and digitalised electricity sector. The **Proposal for a Regulation on guidelines for trans-European energy infrastructure**[1] pursues a greater use of renewable energy sources, sector integration and the modernisation of the EU's cross-border energy infrastructure, and defines sustainability criteria for new projects. The Commission's **hydrogen strategy for a climate-neutral Europe**[2] aims to transform clean hydrogen into an alternative to carbon-based fuels and to install hydrogen electrolysers across Europe.

3 **Sustainable industry** through decarbonisation actions. The Commission's **new Circular Economy Action Plan**[3] includes initiatives to lengthen product life and, hence, reduce the use of raw materials. The **New Industrial Strategy for Europe**[4] envisages measures promoting a more digitalised European industry oriented towards climate neutrality. The **Proposal for a Regulation concerning batteries and waste batteries**[5] seeks to promote the circular economy, improving the recycling of industrial, automotive and portable batteries, and to reduce environmental and social impacts over all the phases of the lifecycle of batteries.

4 **More efficient buildings.** The Commission's document entitled **A renovation wave for Europe**[6] describes measures aimed at decarbonising heating and cooling systems and promotes the renovation of buildings, incentivising digitalisation and the creation of job and growth opportunities across the building renovation supply chain. Also, the **Construction Products Regulation,**[7] which lays down harmonised conditions for the marketing of construction products, with the aim of setting safety principles and defining products' environmental requirements is currently under review.

5 **Sustainable mobility** through the reduction of GHG emissions from transport, which is estimated to account for 25% of the EU's total emissions.[8] The **sustainable and smart mobility strategy – putting European transport on track for the future**[9] sets out the basis for transforming the sector and achieving a 90% cut in emissions by 2050. To this end, the Commission is reviewing the **Directive on the deployment of an alternative fuels infrastructure,**[10] which aims to achieve full connectivity along the European zero and low-emission transport network, ensuring the deployment of recharging and refuelling infrastructure. Also under review is the **Regulation for the development of a trans-European transport network,**[11] to ensure that all transport modes are more sustainable and infrastructure is more efficient and to improve the availability of alternative fuels.

6 **Reduction of pollution,** with the publication of the **EU Action Plan: "Towards zero pollution for air, water and soil",**[12] which proposes including pollution prevention in all EU policies and sets pollution reduction targets for 2030.

7 **Protection of biodiversity and sustainable food systems,** promoting measures to protect biodiversity and ecosystems, make cities greener, reduce the use of pesticides and ensure more sustainable and quality food.

8 **The "farm to fork" strategy**[13] **also focuses on reducing waste and greening the production chain.**

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1 See European Commission (2020a).
2 See European Commission (2020b).
3 See European Commission (2020c).
4 See European Commission (2020d).
5 See European Commission (2020e).
6 See European Commission (2020f).
7 See Regulation (EU) 305/2011.
8 According to the European Commission, "transport emissions represent around 25% of the EU's total greenhouse gas emissions, and these emissions have increased in recent years. Our goal of being the first climate-neutral continent by 2050 requires ambitious changes in transport. A clear path is needed to achieve a 90% reduction in transport-related greenhouse gas emissions by 2050". See https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/transport-and-green-deal_en.
9 See European Commission (2020g).
10 See European Commission (2021c).
11 See SWD(2021) 117 final.
12 See European Commission (2021e).
13 See European Commission (2020h).

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Annex 1 The global network for combating climate change

Table A1.1

CLIMATE CHANGE IN THE WORK OF MULTILATERAL INSTITUTIONS AND FORA (a)

Institution / Forum	Type and field of climate-related action (CC)	Analysis and advice	Financing	Technical assistance	Supervision	Data	Other activities
G20 / G8 / MEF (Major Economies Forum on Energy and Climate).	Political discussion fora. Non-binding informal groups. Field: reflects leaders' commitment to mitigating CC.						
UN (b) / COP / UNFCCC (c) (1994) and agencies.	Global forum. Seed of the main universal and binding agreeements on CC. Field: preparing and implementing policies and guidance for compliance with the Convention agreements. Technical and scientific field, financing.		UN (agencies), MDBs and the World Bank channel Financial Intermediary Funds' (FIFs) resources to countries.			Collaborate with the IMF.	Promote technical cooperation, compile relevant global information (IPCC).
Coalition of Finance Ministers for Climate Action (CFMCA) (Bali, 2018).	Forum for tax and economic authorities of 60 countries that signed up to the Helsinki Principles. 25 institutional partners, including the World Bank, IMF, OECD, UNFCCC, UNDP, European Commission, UNEP FI, NDC Partnership, NGFS, MDBs and GCF. Field: promoting climate action through fiscal and public finance policies under the Santiago Action Plan (2019). Actions: sharing of knowledge and experience, incentivising innovative climate-related policies and practices.						Facilitates exchange of information on CC-related tax and economic policies and practices.

SOURCE: Banco de España.

a The table is not exhaustive but includes the main fora and institutions. Red denotes cooperation between institutions. Orange shading signals that the forum/institution acts in that field, and in the text provides information on their cooperation with other institutions or specific details on their activity.

b Other United Nations (UN) agencies also deal with climate change related to human development (UNDP, 2007; UNDESA, 2009), CO2 emissions (Convention on Biological Diversity, 2012), finance (AGF, 2010) and human rights (UN Development Programme / UN Environment Programme / UN Global Compact).

c Includes: UNFCCC Secretariat; Subsidiary Body for Scientific and Technological Advice (SBSTA); Subsidiary Body for Implementation (SBI); Adaptation Committee (AC); Compliance Committee; Consultative Group of Experts (CGE); Executive Board of the Clean Development Mechanism (CDM); Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts; Working Group of the Local Communities and Indigenous Peoples Platform; Joint Implementation Supervisory Committee; Katowice Committee of Experts on the Impacts of the Implementation of Response Measures; Least Developed Countries Expert Group (LEG); Paris Agreement Implementation and Compliance Committee (PAICC); Paris Committee on Capacity-building (PCCB); Standing Committee on Finance (SCF); Technology Executive Committee (TEC); Intergovernmental Panel on Climate Change (IPCC) (1988).

Table A1.1

CLIMATE CHANGE IN THE WORK OF MULTILATERAL INSTITUTIONS AND FORA (a) (cont'd)

Institution / Forum	Type and field of climate-related action (CC)	Analysis and advice	Financing	Technical assistance	Supervision	Data	Other activities
BIS (Bank for International Settlements).	63 central banks (95% of global GDP). Field: supports central banks in their role to promote the transition towards a sustainable global economy relating to their mandates (supervision, asset management and monetary policy).	Collaborates with FSB, NGFS.					Bank services: Green Bond Initiative (2019) BIS Innovation Hub: Project Genesis (tokenisation of green bonds), G20 Techsprint (technical solutions for green and sustainable financing).
FSB (Financial Stability Board).	Forum linked to the BIS. Field: resilience of the financial system to (physical and transition) climate risks relating to data availability (TCFD), regulation and supervision, stress tests, assessment and oversight of potential climate-related risks to financial stability.					Task Force on Climate-related Financial Disclosures (TCFD) (2015): voluntary climate-related financial reporting. Collaborates with the IMF.	Contributes to other international fora – G20, G7, COP – and with the IMF and the World Bank.
NGFS (Network for Greening the Financial System) (2017).	105 members and 16 observers. BIS financial authority network. Field: promotes green finance, aiming to strengthen the role of the financial system for risk management and channelling capital into green investment.	Collaborates with the IMF.					
IAIS (International Association of Insurance Supervisors).	International standard-setting body linked to the BIS. Field: inclusion of climate-related risks in insurance supervision and sustainable Insurance development.						
CTA (Central Banks' and Supervisors' Climate Training Alliance).	Created before COP26. A collaboration between BIS, IAIS, NGFS and UN SIF (Sustainable Insurance Forum). Field: strengthening financial system resilience to climate-related risks, making climate-risk related training resources available to authorities (central banks and supervisors) via a future online portal.						

SOURCE: Banco de España.

a The table is not exhaustive but includes the main fora and institutions. Red denotes cooperation between institutions. Orange shading signals that the forum/institution acts in that field, and in the text provides information on their cooperation with other institutions or specific details on their activity.

Table A1.1

CLIMATE CHANGE IN THE WORK OF MULTILATERAL INSTITUTIONS AND FORA (a) (cont'd)

Institution / Forum	Type and field of climate-related action (CC)	Analysis and advice	Financing	Technical assistance	Supervision	Data	Other activities
GFANZ (Glasgow Financial Alliance for Net Zero).	Created in 2021. A coalition of 450 financial sector firms across 40 countries that manage more than $130 trillion. Mission: to drive green finance.						
IMF.	Global. Fields: advice (supervision), finance and technical assistance for: climate change mitigation (lower emissions, elimination of fossil fuel subsidies, tools to achieve NDCs), adaptation (financial and institutional resilience) and transition (financial regulation, diversification, green recovery, green finance, etc.). Implications for financial stability (collaborates with NGFS).			CMAP (with World Bank's CCDRS).	Collaborates with the World Bank.	Climate Change Dashboard – with the OECD, World Bank, UN, EC Eurostat, FAO, IEA and NOAA. Data Gaps Initiative – with the FSB	Contributes to other international fora – G20, G7, COP – and with the IMF and the World Bank.
World Bank (group).	Global. Fields: climate-related technical assistance, advice and development finance (mitigation, adaptation and resilience, NDC and NAPA compliance), focusing on "regreening" the economies financed.		Climate trust fund —Climate Support Facility (CSF). UN (agencies), MDBs and the World Bank channel FIF resources to countries.	Financial protection strategies (DRFIP). CCDRS — (with IMF's CMAP).	Collaborates with the IMF.	Collaborates with the IMF.	CAPE (Climate Action Peer Exchange): a capacity-building forum for knowledge sharing and advisory support for finance ministers. Contributions to international fora – G20, G7, COP – in their debates with the IMF and the FSB.
HL Advisory Group (HLAG) on Sustainable & Inclusive Recovery and Growth (2021).	Group coordinating the IMF's and World Bank's analytical work on the global response for a sustainable, green and inclusive recovery. Also includes experts from research institutions, the private sector and governments.						
Multilateral development banks (MDBs): EBRD, AfDB, ADB, IDB, AIIB, IsDB, NDB, EIB.	Regional. Fields: climate-related technical assistance, advice and development finance (mitigation and resilience). Channel FIF resources (d) and joint financing (e) to recipient countries.		UN (agencies), MDBs and the World Bank channel FIF resources to countries.			Record of financial flows aligned with Paris Agreement goals.	

SOURCE: Banco de España.

a The table is not exhaustive but includes the main fora and institutions. Red denotes cooperation between institutions. Orange shading signals that the forum/institution acts in that field, and in the text provides information on their cooperation with other institutions or specific details on their activity.
d Examples of FIFs: Clean Technology Fund, under the Clean Investment Fund (CIF) framework; Adaptation Fund (financed by the tax on Certified Emission Reductions (CERs) under the Clean Development Mechanism); funds from private foundations, etc. The CIFs are the largest funding mechanism and the only multilateral mechanism operating exclusively with MDBs as implementing agencies and the World Bank-IBRD as trustee.
e For instance, the Global Environment Facility (GEF) and the Climate Investment Funds (CIFs).

Table A1.1

CLIMATE CHANGE IN THE WORK OF MULTILATERAL INSTITUTIONS AND FORA (a) (cont'd)

Institution / Forum	Type and field of climate-related action (CC)	Analysis and advice	Financing	Technical assistance	Supervision	Data	Other activities
OECD.	Advanced and developing countries. 35 member countries and emerging partners (Brazil, India, Indonesia, China, South Africa). Fields: advice to members on: climate policy and impact, mitigation, resilience, financing, biodiversity, water and other environmental goals. Centre on Green Finance and Investment supports broad-based financing and green investment.					OECD Green Recovery Database. Also with the IMF.	Green Finance and Investment forum: brings together the public and the private sector. Collaborates with EU TEG (f) on the development of sustainable finance taxonomies. Observer to the IPSF IEA-OECD (Climate Change Expert Group) provides technical support in international negotiations.
Climate and Clean Air Coalition (CCAC) (2012).	Forum for dialogue for governments, intergovernmental organisations, the private sector, scientific institutions and NGOs. Field: assistance, training and financing, with the aim of reducing carbon, methane and other gas emission levels.						Awareness and policy information campaigns.
IEA (International Energy Agency). IRENA (International Renewable Energy Agency).	Global forum for dialogue to promote energy security. Field: energy security, with growing focus on climate change mitigation (IEA) and development and transfer of renewable energy technologies, including their financing (IRENA). Aim: clean and efficient energy.					Policies and Measures Database (g). Also collaborates with the IMF.	IEA-OECD (Climate Change Expert Group) provides technical support in international negotiations.

SOURCE: Banco de España.

a The table is not exhaustive but includes the main fora and institutions. Red denotes cooperation between institutions. Orange shading signals that the forum/institution acts in that field, and in the text provides information on their cooperation with other institutions or specific details on their activity.
f EU Technical Expert Group on Sustainable Finance (EU TEG); International Platform on Sustainable Finance (IPSF).
g Includes data from various databases – the IEA/IRENA Renewable Energy Policies and Measures Database, the IEA Energy Efficiency Database, the IEA Addressing Climate Change database and the Building Energy Efficiency Policies (BEEP) database – as well as information on methane reduction and carbon capture, utilisation and storage (CCUS) policies.

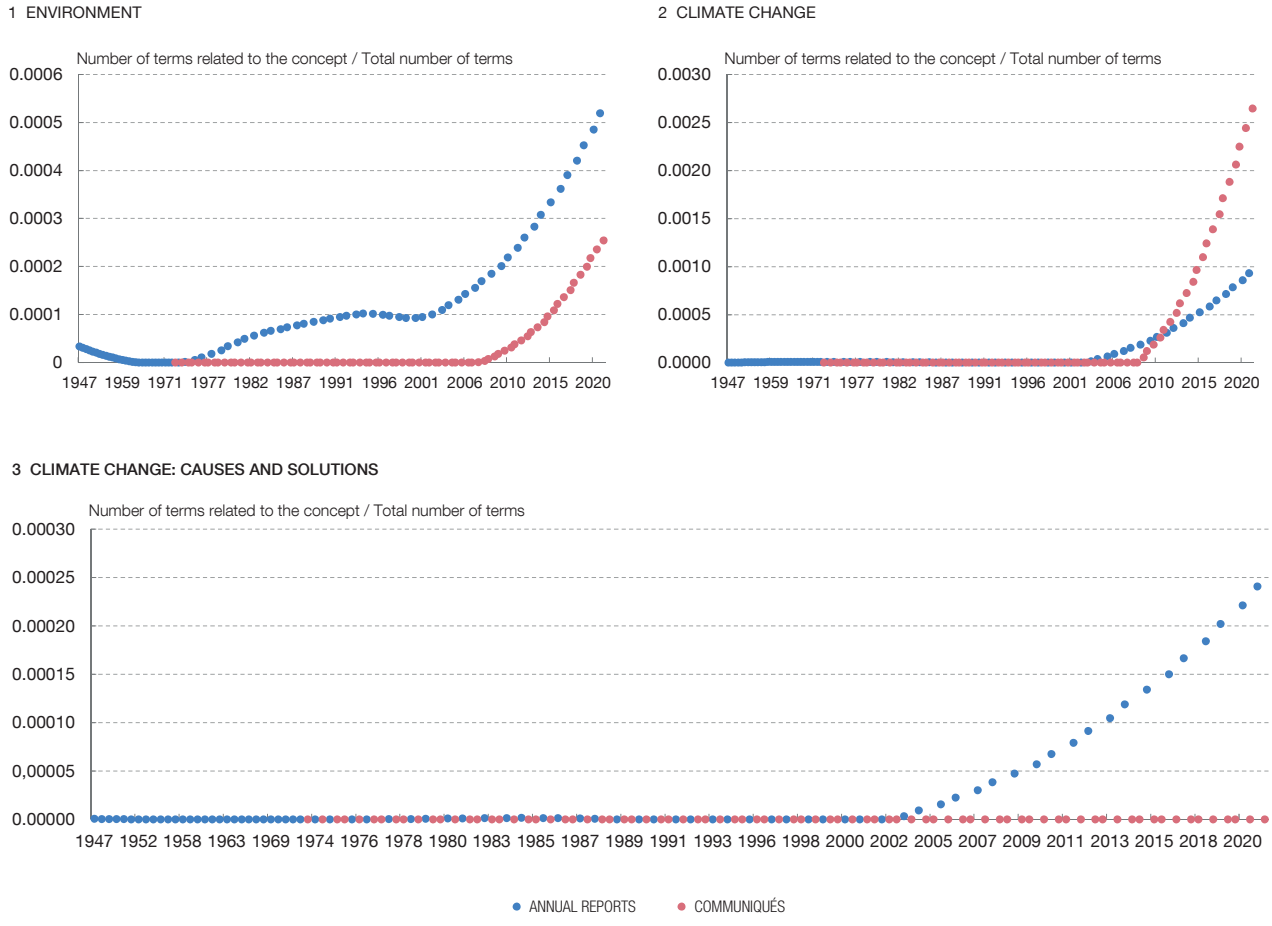
Annex 2 The IMF and the environment and climate change

A text-mining analysis of the IMF's Annual Reports and its member countries' statements reveals that the IMF began to show an interest in environmental matters back in the 1970s, whereas these issues would not begin to appear in IMF member countries' statements until thirty years later (see Chart A2.1.1). By contrast, climate change appeared almost simultaneously in the IMF's discourse and in statements of its member countries, for which it is a critical issue (see Chart A2.1.2). Their resolute support for the climate change challenge

Chart A2.1

CONCEPT DENSITY TRENDS (a) IN ANNUAL REPORTS AND COMMUNIQUÉS (b)

The charts depict the density of some of the terms associated with each of the following three concepts.



SOURCE: Banco de España.

a The charts depict the density of some of the terms associated with each of the three concepts in the documents. The associated terms are:
Environment: *biodiversity, ecosystem, environmental, environmentally, natural resources, green economy, green, wildlife.*
Climate change: *climatic, greenhouse, warming, climate change, greenhouse effect, global warming, greenhouse, GHC.*
Causes and solutions: *emission, emissions, pollution, polluter, polluters, zero-carbon, CO2, emission tax, emission taxes, fuel tax, fuel taxes, carbon tax, carbon taxes, clean energy, renewable energy, renewable energies, solar energy, wind power, geothermal energy, hydrogen, biomass.*
For a more detailed explanation of the methodology used in this analysis, see "The International Monetary Fund's view of social equity throughout its 75 years of existence", *Occasional Paper* No 2127, Banco de España.

b Interim Committee statements (1975-1999) and International Monetary and Financial Committee (IMFC) communiqués since 2000. These committees are made up of political representatives from IMF member countries.

explains why, in recent decades, the Fund has addressed both the causes of and solutions to climate change (see Chart A2.1.3). Yet these aspects do not figure in the statements, reflecting the lack of a common position among the member countries on how to tackle climate change.

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