WWF

SUSTAINABLE FINANCE 2021

INTRODUCING SUSREG

A FRAMEWORK FOR SUSTAINABLE FINANCIAL REGULATIONS AND CENTRAL BANK ACTIVITIES

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WWF is one of the world's largest and most experienced conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which people live in harmony with nature. WWF has worked with the finance sector for more than a decade via innovative collaborations that seek to integrate environmental and social risks and opportunities into mainstream finance, to redirect financial flows to support the global sustainable development agenda. Our approach to sustainable finance leverages WWF's conservation expertise as well as our partnerships with companies on key issues such as water, energy, climate and food to drive sustainability. Find out more at panda.org/finance.

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FOREWORD

The catastrophic impacts of climate change will be felt beyond the traditional horizons of businesses, regulators and politicians. This so-called "Tragedy of the Horizon" means that by the time climate change becomes a clear and present danger it will be too late to act. We need to act now to ensure the stability of the planet for future generations.

Mark Carney

UN Special Envoy for Climate Action and Finance

Prime Minister Johnson's Finance Adviser for COP26

The good news is that policymakers, businesses and the financial sector are increasingly recognising this issue. World leaders forged the Paris Agreement in 2015, almost 1,500 companies are taking action through the Science Based Targets initiative, and the core of the financial system, including the world's largest asset owners and managers controlling over US$35 trillion, have joined Race to Zero, the world's largest credible net-zero coalition.

Central banks and supervisors have supported these efforts and have sought to address the financial risks from climate change. This is demonstrated by the growth in membership of the Network for Greening the Financial System (NGFS) – established in December 2017 by eight central banks and supervisors, it now has over 80 members and 13 observers, representing countries responsible for over 75% of global emissions.

Sitting at the heart of their economies, central banks and supervisors have a fundamental role in bringing climate risks and resilience into the core of financial decision-making. Through our COP26 Private Finance agenda, we are working with authorities to encourage action through their supervisory activities, stress-testing regimes and monetary policy frameworks; and to encourage central banks to practice what they preach in their own operations.

Therefore, this report and launch of the Sustainable Financial Regulations and Central Bank Activities ('SUSREG') framework by the WWF is so timely. The framework will strengthen and harmonise regulatory, supervisory and risk management practices across financial markets, in line with sustainable development goals and international agreements.

The WWF's commitment to publish regular progress reports will ensure central banks and supervisors are held to account well beyond COP26 in November. It will also help show progress over time, because after all, achieving net-zero will require a whole economy transition. This will not be achieved by divestment alone; central banks should expect the financial sector to engage with the companies in which they invest, lend to, or insure, about their plans for the transition to net-zero. This will take time, but it is important to track the progress and the impact that central banks are having on the transition. I would urge central banks and supervisors to see the launch of the SUSREG framework as an opportunity to take stock of their actions and step up where necessary to ensure we create a global financial system fit for a sustainable future.

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SUPPORTIVE STATEMENTS

Climate change is an existential threat to humanity and to other life forms. It cannot be separated from other environmental risk factors such as biodiversity loss and pollution. These factors compound the impact of climate change, to bring about further degradation of natural capital, and a consequent larger impact on the financial system.

Zeng Yi Wong

Executive Director
Banking Department II at Monetary Authority of Singapore (MAS)

A global response on this front is critical given the integration of financial markets across the world.

MAS is a founding member of the Network for Greening the Financial System (NGFS) and works closely with international supervisors to harmonise efforts to manage climate and environmental risks. In December 2020, we issued our Guidelines on Environmental Risk Management for banks, asset managers and insurers. We expect financial institutions to assess the companies they finance on their level of climate resilience and dependency on ecosystem services.

MAS also co-chairs a technical expert group set up by the IOSCO Sustainable Finance Task Force, which will inform IOSCO's views on endorsement of the Sustainability Standards Board to be set up under the IFRS Foundation structure. A common global reporting standard will facilitate consistent, comparable and reliable sustainability disclosures. This will enable investors to better align their portfolios to the Paris Agreement and natural capital boundaries.

We welcome the launch of WWF's SUSREG framework as a useful reference for financial regulators and supervisors. The SUSREG framework can promote the sharing of best practices and monitoring of developments across jurisdictions. This in turn helps to align and reinforce global regulatory and supervisory responses to build a resilient and sustainable financial system.

SUPPORTIVE STATEMENTS

For the SFC, environmental risks are considered to be an important source of risks for the financial sector, and should be acted upon. Together with many regulators and supervisors around the world, we believe that climate change can affect the financial system through both physical and transition risk transmission channels.

Mariana Escobar Uribe

Head of Sustainable Finance
Superintendencia Financiera de Colombia (SFC)

Colombia is highly vulnerable to climate change effects, such as floods and droughts. And although the country only generates 0.4% of global greenhouse gas emissions, Colombia has an ambitious plan to reduce such emissions, that will require policy changes affecting many sectors, companies and financial institutions.

To prepare for these challenges, and those created by other environmental issues, SFC developed a Sustainable Finance Strategy that would help the financial sector to reorient capital flows towards sustainable activities, improve identification and management of environmental risks, and promote greater transparency.

A challenge we faced was to set clear supervisory expectations, while reflecting the views of various stakeholders. The SUSREG framework provides a comprehensive set of recommendations and indicators that will help regulators, supervisors and central banks to start taking action, and help them align their roadmap and measures with best practices from other jurisdictions.

Supervisors and regulators in emerging markets should not wait for others to take the appropriate measures and start considering environmental risks as financial risks. Environmental risk will not wait for the financial markets to be ready to respond.

INTRODUCTION

The climate and environmental crises we face are accelerating and unfolding before our eyes.

The COVID-19 pandemic is a stark reminder of how much our societies and economies depend on a healthy relationship with nature, which foreshadows far worse shocks if we continue business as usual.

As the world still grapples with the COVID-19 crisis and its devastating socio-economic consequences, the impacts of climate change and environmental degradation are worsening.

The world is not on track to meet the objectives of the Paris Agreement.[1] Concentrations of greenhouse gases in the atmosphere are reaching new highs, and 2020 was the hottest year ever recorded together with 2016 – despite the cooling effect of the 2020-2021 La Niña event. In fact, the six warmest years have come since 2015, making 2011-2020 the warmest decade on record.[2]

ACROSS THE GLOBE, EXTREME WEATHER EVENTS, SUCH AS WILDFIRES, FLOODING, HURRICANES AND HEATWAVES ARE INCREASING IN SCALE AND INTENSITY

As a consequence, the physical impacts of climate change are accelerating. Across the globe, extreme weather events, such as wildfires, flooding, hurricanes and heatwaves are increasing in scale and intensity. Sea level rise threatens coastal cities and agricultural land, while temperature rise reduces labour productivity and affects the most vulnerable populations.

As global temperatures rise, the probability of crossing climate tipping points,[3] triggering runaway and irreversible climate change, is increasing. Already, scientists see evidence that we stand dangerously close to these thresholds, notably with the Amazon rainforest increasingly at risk of turning into a savannah[4] and a recent study suggesting that it has already turned into a net source of greenhouse gas emissions,[5] or with the Greenland ice sheet on track to lose mass at about four times the fastest rate observed over the past 12,000 years.[6]

In parallel, rampant environmental destruction continues to unfold. In 2019, a landmark IPBES report found that 75% of the terrestrial environment and about 66% of the marine environment have already been severely altered by human actions, through habitat destruction, climate change, pollution and the overexploitation of species.[7] This unprecedented threat to biodiversity was echoed in the *2020 Living Planet Report* by WWF and ZSL, which found an average 68% decrease in populations sizes of mammals, birds, amphibians, reptiles and fish between 1970 and 2016.[8]

THESE IMPACTS COME WITH PROFOUND HUMAN AND ECONOMIC COSTS

Over the past decade alone, 83% of all disasters were caused by extreme weather and climate-related events, killing more than 410,000 people and affecting 1.7 billion people.[9] Lower-income countries are disproportionately affected and, compounded with the impacts of COVID-19, these disasters put unprecedented strain on these countries' ability to recover.

According to Munich Re, 2017 was the costliest year ever in terms of global weather disasters, with total costs reaching US$320 billion, of which only US$130 billion were insured.[10] In 2019, Asia was disproportionately affected by natural disasters such as tropical cyclones and floods, particularly in Japan, China and India, with three storms alone responsible for losses of US$34 billion.[11] Furthermore, 2020's hurricane season in the US, Caribbean and Central America was the most active on record.[12]

The loss of biodiversity and ecosystem services worldwide is also a significant concern. An estimated 10% of insect species are threatened with extinction and the populations of critical pollinators are declining, putting up to US$577 billion per annum of global crops at risk. A staggering 70% of cancer drugs are either natural or synthetic products inspired by nature,[13] and the full or over-exploitation of 85% of global fish stocks threaten the livelihoods of hundreds of millions of people who rely on wild-caught seafood as their primary source of protein.[14]

According to the Swiss Re Institute, one-fifth of all countries worldwide have ecosystems in a fragile state for more than 33% of their territory.[15] Their research found that 55% of global GDP is moderately or highly dependent on biodiversity and ecosystem services, echoing a 2018 WWF study showing that 19% of global GDP comes from watersheds exposed to high or very high water risk.[16]

EMPIRICAL EVIDENCE SHOWS THAT CLIMATE CHANGE CAN HAVE A MATERIAL IMPACT ON SOVEREIGN RISK

Empirical evidence shows that climate change can have a material impact on sovereign risk, through direct and indirect effects on macro-financial stability and public finances. Climate-vulnerable countries face higher cost of capital and threats to public debt sustainability.[17] Similarly, climate vulnerability has been shown to adversely affect firms' cost of capital and access to finance.[18]

Unfortunately, environmental degradation also reduces our resilience to extreme weather events, further exacerbating existing vulnerabilities. The significant local impacts of these disasters have regional and global repercussions, with ripple effects on agricultural and industrial supply chains.

THE BENEFITS OF CLIMATE ACTION AND ENVIRONMENTAL PROTECTION ARE ENORMOUS

1.5°C

TO KEEP A CHANCE OF LIMITING WARMING TO 1.5°C ABOVE PRE-INDUSTRIAL LEVELS BY 2100, CO_2 EMISSIONS WILL NEED TO FALL BY ABOUT 45% BY 2030

To keep a reasonable chance of limiting warming to 1.5°C above pre-industrial levels by 2100, CO2 emissions will need to fall by about 45% by 2030 compared to 2010 levels, reach net-zero by 2050, and be in part scrubbed from the atmosphere using CO2 removal technologies.[19] The rapid and profound changes that are expected from most sectors to achieve this transition provide significant opportunities, which is particularly important as the world grapples with the socio-economic impacts of the COVID-19 pandemic.

A study by the Smith School of Enterprise and the Environment at the University of Oxford specifically identifies investments in energy efficiency for buildings, renewable energy, ecosystem resilience and regeneration, training and education, sustainable agriculture, and clean technology research & development as particularly well suited to deliver on long-term climate and biodiversity goals, in addition to more immediate COVID-19 crisis recovery objectives.[20]

Indeed, nature provides a range of services that underpins all our activities,[i] the value of which is estimated at around US$125-140 trillion per year.[21] There are significant opportunities and benefits in reversing the degradation of nature, through the restoration and conservation of healthy and functioning ecosystems.

In particular, the World Economic Forum estimated that a sustainable transition in three key sectors (namely food, land and ocean use, infrastructure and the built environment, and energy and extractives) would necessitate a capital investment of about US$2.7 trillion annually, but could deliver US$10.1 trillion of annual business opportunities and 395 million jobs by 2030, improving livelihoods and increasing the resilience of communities around the world.[22]

In 2019, UNEP highlighted that to bring the energy sector on a 1.5°C pathway, annual supply-side investments of US$1.6-3.8 trillion would be required globally over the 2020-2050 period.[23] Achieving this would have significant co-benefits such as enhanced energy access and security, long-term job creation and significant health benefits due to reduced air pollution.

Prior to the COVID-19 pandemic, these investment figures seemed hard to conceive. But with a total economic stimulus of nearly US$15 trillion[24] by the world's leading economies in response to the pandemic (as of February 2021), we now have a unique opportunity to re-think our development models – and it should be seized.

THE FINANCIAL SECTOR HAS A CRITICAL ROLE TO PLAY

With more than US$89 trillion of assets under management,[25] and the crucial role that banks play in financing the real economy (notably small and medium-sized enterprises), financial institutions are uniquely positioned in enabling the transition to a more sustainable economy.

i The atmosphere, forests, rivers, oceans, biodiversity and soils are our planet's key building blocks, which underpins key benefits and services that are provided to us for free, such as the provision of food, drug discovery, clean air and water, food crops pollination, climate regulation and the moderation of extreme weather events.

At the same time, these same institutions are exposed to increasing environmental and social (E&S) risks[ii] through their business relationships with the companies they lend to, insure and invest in. As the transmission mechanisms between these risks and their financial implications are better understood, and better data becomes available, their implications become clearer.

The global central banking and regulatory community is also increasingly aware of the significant financial impacts, and the threat to financial stability, caused by the climate and environmental crises that we face. Since Mark Carney's seminal 'tragedy of the horizon' speech in September 2015,[26] governors and supervisors are increasingly voicing their concerns, announcing new measures and calling for joint solutions involving all policymakers and financial institutions.

As a case in point, the Network for Greening the Financial System (NGFS) launched in December 2017 by only eight central banks and supervisors, has rapidly grown into a global network of 89 members and 13 observers (as of March 2021), from both developed and emerging economies. In addition to fulfilling its mandate to identify and share best practices on addressing climate-related and environmental risks, the NGFS has also clearly laid out the imperative for a green recovery, stressing the urgency of the situation and the need for collaborative approaches.[27]

WWF WILL WORK WITH POLICYMAKERS, CENTRAL BANKS AND FINANCIAL SUPERVISORS, ADVOCATING FOR THE URGENT NEED TO FULLY INTEGRATE CLIMATE-RELATED AND E&S RISKS INTO THEIR MANDATES AND OPERATIONS

In order to build on this positive momentum and further accelerate the strengthening and harmonization of financial regulations and central bank activities in key financial markets worldwide, WWF is launching the **Greening Financial Regulation Initiative (GFRI)**. Through this initiative, WWF will deepen its work with policymakers, central banks and financial supervisors, advocating for the urgent need to fully integrate climate, environmental and social risks into their mandates and operations – mainly through financial regulation and supervision – as well as monetary policy. This will notably entail the provision of targeted support, research and capacity building to equip institutions with the necessary tools and knowledge.

Launched as part of this initiative, this report introduces a new framework for Sustainable Financial Regulations and Central Bank Activities ('SUSREG'). Developed by WWF, it aims to support central banks, financial regulators and supervisors, as well as relevant policymakers, in enhancing the financial sector's stability and resilience to climate-related and other E&S risks, while enabling the mobilization of capital for the transition to a low-carbon, resilient and sustainable economy.

Building on current best practices and ongoing developments in the central banking and supervisory landscape, the framework capitalizes on WWF's experience in working with financial sector stakeholders worldwide, and benefits from its perspective as a science-based organization.

ii Such risks are those related to, among others: greenhouse gas emissions, deforestation, land use change, biodiversity loss, pollution of water, air and soil, depletion of natural resources, as well as human rights violations, labour issues (incl. occupational health & safety), and adverse impacts on local communities (incl. indigenous people).

This report is accompanied by an online platform or 'Tracker' (www.susreg.org), that will display the results of an assessment against the framework of relevant country-specific regulations and supervisory expectations, as well as central banks' activities.

THE SUSREG FRAMEWORK, AND THE UPCOMING ASSESSMENT RESULTS, CAN BE USED BY:

Central banks, financial supervisors and policymakers:

- To strengthen regulatory and supervisory practices by integrating E&S considerations in financial regulations, guidelines and monetary policy operations;
- To benchmark themselves against peers in key markets worldwide and align with best practices.

International financial standard-setters and initiatives:

- To benefit from independent, regularly updated assessments and annual reporting on progress;
- To build on the framework to establish roadmaps for integrating E&S considerations in global financial regulations and central bank activities;
- To benefit from the science-based perspective of WWF on best practices regarding the integration of climate-related and E&S risks.

Commercial banks (and institutional investors):

- To understand the differences in the regulatory and monetary policy frameworks in the countries in which they operate (and those affecting the financial institutions in their portfolios);
- To support and inform their engagement with government entities and policymakers (and with banks in their portfolios).

Academics, think-tanks and other non-governmental organizations:

- To better understand the differences in the regulatory and monetary policy frameworks in key countries worldwide;
- To assess the degree of integration of various E&S issues in financial regulation and central bank activities, and track progress.

With this tool, WWF aims to facilitate knowledge sharing between institutions, offering a simple way to build on existing good practices and improve understanding of how climate-related and E&S risks can be integrated in central banks' and financial supervisors' activities.

It is our hope that the SUSREG framework and tracker will contribute to the strengthening, convergence and harmonization of sustainability practices among central banks, financial regulators and supervisors, and policymakers worldwide.

THE ROLE OF CENTRAL BANKS AND FINANCIAL SUPERVISORS

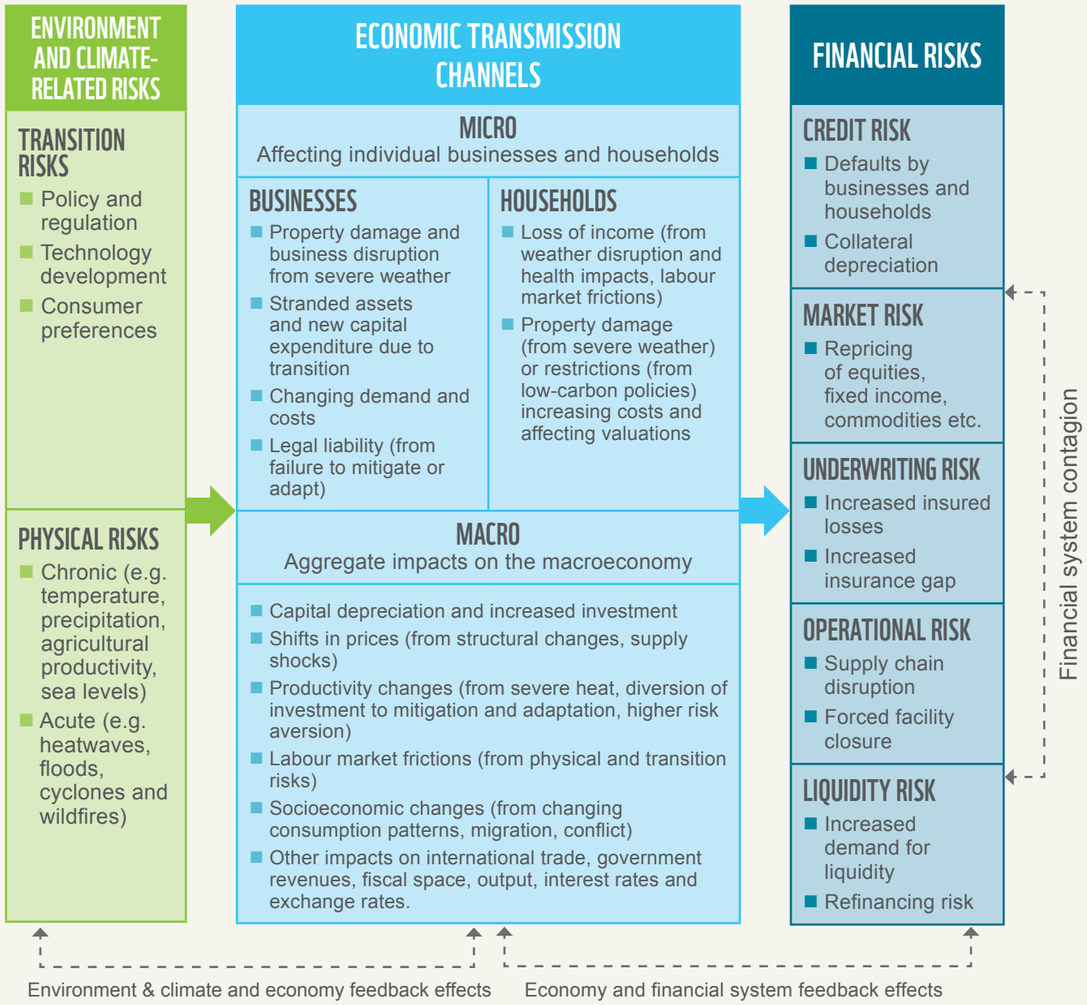
The realization among central bankers, financial regulators and supervisors that climate-related and environmental risks are a source of financial risks and a threat to financial stability is triggering an intense debate on their current roles and mandates, and on how to best design and implement measures to address these risks.

Similarly, an increasing body of research is being developed to further explore sometimes complex transmission channels, to better quantify the financial implications of climate-related and environmental risks and to inform the design of regulations as well as supervisory and monetary policy measures.

Climate-related risks are generally categorized as either physical or transition risks, a distinction that can be extended to environmental risks as well. Physical risks result from changes to long-term climate patterns (causing, for instance, sea level rise or chronic heat waves) or from increased severity and/or frequency of extreme weather events (such as hurricanes or floods). Transition risks arise from the policy, behavioural and technological changes that accompany the transition to a low-carbon and resilient economy. Companies that do not anticipate this evolution and adapt their business models are exposed to these risks, which also include reputational and litigation risks.

It is increasingly recognized that climate-related and environmental risks are not a separate risk category, but rather drivers of existing prudential risk categories for financial institutions (i.e., credit, market, underwriting, operational and liquidity risks). This was recently made clear by the Bank of International Settlements (BIS),[28] the European Central Bank (ECB)[29] and the NGFS.[30] Experience shows that financial institutions are also exposed to legal and reputational risks in relation to climate and environmental issues.

To further illustrate, the figure below from a recent NGFS report provides a good summary of the transmission channels between climate-related and environmental risks and the existing categories of financial risks.



Source: Network for Greening the Financial System, Overview of Environmental Risk Analysis by Financial Institutions, September 2020

To ensure that the entire range of E&S risks are better taken into account by financial institutions, a growing number of regulators and supervisors have issued new or strengthened regulations or supervisory expectations. The *Guide for Supervisors* published in May 2020 by the NGFS provides a good overview of practices and recommendations on how to develop and implement such expectations, notably with regards to governance, decision-making and risk management processes, as well as disclosure practices.[31]

Ultimately, the integration of E&S risks in the prudential regulations set by the Basel Committee for Banking Supervision would ensure a robust and systematic approach by the global supervisory and banking community. We recognize however that this would require further quantitative work, consensus building and international cooperation.

"Central banks and financial regulators can support increased understanding by assessing the systemic extent of nature-related financial risks"

The Economics of Biodiversity: The Dasgupta Review, February 2021

In particular, to fully incorporate E&S risks in capital and liquidity requirements for banks, methodologies to better identify the transmission channels and quantify their financial implications will need to be further developed and refined.[32] An increasing amount of research is being carried out and collaborative platforms being set up, particularly on climate-related and environmental risks, as reliable data becomes more readily available and methodologies mature.

In addition, the integration of climate and environmental considerations in monetary policy operations is increasingly being discussed. In 2020, the NGFS published a report illustrating how climate change affects macroeconomic variables and can impact monetary policy transmission channels, of relevance to central banks' primary objectives of inflation control and price stability.[33] The report also makes recommendations for future research topics as well as changes to the tools and models used by central banks, while a recent survey reviewed central banks' current practices and thinking around the integration of climate-related risks in monetary policy operations.[34]

"The Eurosystem's consideration for climate change is [...] an imperative that we must pursue in the very name of our current mandate and to ensure the smooth implementation of monetary policy"

François Villeroy de Galhau, Governor of the Banque de France, February 2021

However, the climate and environmental crises that we are facing require urgent action. The unprecedented scale and inherent uncertainty surrounding these have led an increasing number of voices to call for a precautionary approach to managing related risks. For central banks and financial supervisors, it could start with measures to discourage the financing of clearly unsustainable activities, for instance those that lead to deforestation, which can be translated into concrete and actionable supervisory and monetary policy measures,[35] or with explicit measures to more deliberately drive alignment of the financial sector with a net-zero transition pathway.[36]

Beyond the issuance of new regulations, supervisory expectations or monetary policy measures, central banks, financial regulators and supervisors have a crucial role to play in advancing the public debate on climate-related and E&S risks. They can, and should, use their prominent role to raise awareness, highlight the risks and seek to influence policymakers to create an enabling environment that accelerates the shift away from unsustainable and toward sustainable activities, and help ensure that the transition to a low-carbon and resilient economy occurs in an orderly manner. As guardians of financial stability, this is in their direct interest.

Indeed, while financial regulation has the ability to correct some market failures, notably to ensure that access to, and cost of, capital is appropriately tied to the sustainability performance of companies, measures taken by central banks and financial regulators or supervisors alone will not be sufficient. Governments have the responsibility to enact ambitious sustainable development strategies backed by the necessary fiscal and regulatory measures, thereby sending clear and ideally long-term policy signals.

As the BIS and Banque de France put it in the landmark *The green swan* report, climate change is a "*complex collective action problem [that] requires coordinating actions among many players including governments, the private sector, civil society and the international community*", and central banks can help coordinate

key measures such as "*carbon pricing, the integration of sustainability into financial practices and accounting frameworks, the search for appropriate policy mixes, and the development of new financial mechanisms at the international level*".[37]

Some central banks and regulators can also go beyond their traditional role centred around risk management and maintaining price and financial stability, to play a more active part in supporting national policy through measures that channel financial flows in line with certain economic growth objectives.[38] Increasingly, central banks are also "*practising what they preach*" by gradually adopting sustainable and responsible practices in their own investment strategies.[39]

Overall, it is critical that financial regulations, supervisory expectations and other measures aimed at greening the financial system are harmonized and consistent across jurisdictions. The global nature of the climate-related and E&S issues we are facing, as well as the interconnectedness of financial markets and supply chains, calls for concerted and coordinated action, which would greatly enhance the effectiveness of measures put in place.

For instance, as most banks and their clients operate in multiple countries, being subject to varying regulations and supervisory expectations can unnecessarily increase costs and potentially create unwarranted competition from institutions subject to lower expectations. Different disclosure requirements and definitions of what constitute sustainable activities can create confusion and discourage sustainable investments.

In that sense, regional and international efforts to build capacity, share good practices and create common rules are critical to harmonize practices while taking local characteristics into account. This is indeed in the direct interest of financial market participants (e.g. banks) and financial supervisors alike, and would address increasing concerns over regulatory uncertainty and complexity – key impediments to effective mobilization of the financial sector.[40] Key international initiatives and platforms such as the NGFS for central banks and supervisors, the IOSCO Sustainable Finance Network (for securities regulators), as well as the Coalition of Finance Ministers for Climate Action and the International Platform on Sustainable Finance (IPSF) are all contributing to these objectives.

A GROWING MOMENTUM

Over the past few years, there has been a noticeable acceleration in the number of sustainability-related measures taken by central banks and financial regulators worldwide. The Green Finance Platform, which tracks policy and regulatory measures that contribute to a sustainable financial system, reports a 180% growth in the number of measures issued between 2015 and 2020.[41]

+180%

Increasingly, central banks and supervisors are recognizing publicly that climate change and nature loss are sources of financial risk and threats to financial stability. They are starting to take concrete measures to address these risks. Further studies are being conducted to better understand and quantify such risks, as well as to inform the design of identified measures.

"Climate change could lead to 'green swan' events and be the cause of the next systemic financial crisis."

Bank of International Settlements & Banque de France, January 2020

As an example, following the publication of *The green swan* report,[42] the Basel Committee on Banking Supervision established in February 2020 a Task Force on Climate-related Financial Risks, mandated to produce a set of reports on climate-related financial risks and the transmission channels of such risks to the banking system, as well as to develop effective supervisory practices to mitigate these risks.[43]

In November 2020, the ASEAN central banks and monetary authorities published a collaborative report looking at the implications of climate and environmental risks for the financial sector and the overall economy, and describing the state of practices in Southeast Asia.[44] Recognizing the role to be played by central banks and supervisors in the management of such risks, the report also issues a number of recommendations, ranging from an increase in capacity building and leadership activities to the strengthening of regulatory measures.

The European Central Bank (ECB) initiated in January 2020 its strategic review, a process during which the implications of climate change would be carefully studied.[45] Recently, ECB's President Christine Lagarde has declared that the ECB would reconsider the traditional 'market neutrality' principle for its corporate bond purchases, in light of the under-pricing of climate-related risks in financial markets.[46] In March 2021, the Bank of England declared that it would introduce climate-related considerations in its Corporate Bond Purchase Scheme later in the year, following an update of its remit to reflect the UK government's strategy for achieving economic growth that is also "*environmentally sustainable and consistent with the transition to a net zero economy*".[47]

In November 2020, the ECB released its final *Guide on climate-related and environmental risks - Supervisory expectations relating to risk management and disclosure*, against which all large European banks supervised by the ECB are expected to perform a self-assessment in early 2021, before a full review in 2022.[48]

In December 2020, following a round of public consultation, the Monetary Authority of Singapore (MAS) published its *Guidelines on Environmental Risk Management*, covering banks, asset managers and insurers.[49] In a recent keynote speech, Mr Ravi Menon, Managing Director for the Monetary Authority of Singapore, singled out the climate crisis as "*the existential challenge of our time*" and issued a call to action to build a more resilient, inclusive and sustainable world.[50]

MAS also announced the future incorporation of "*climate-related scenarios in [its] annual stress tests for the financial industry*", joining the ranks of an increasing number of supervisors that have planned climate-related stress tests for 2021 or 2022, notably those of Australia, Brazil, Canada, the European Union, Hong Kong, Japan and the United Kingdom.

That same month, the U.S. Federal Reserve officially joined the NGFS,[51] a crucial development for the initiative and part of a broader policy shift by the new US administration on climate change. In January, it set up a dedicated Supervision Climate Committee, tasked among other objectives to "*strengthen the Federal Reserve's capacity to identify and assess financial risks from climate change*", while its Governor expressed its commitment to "*help ensure the financial system is resilient to the risks that arise from climate change and well-positioned to support the transition to a greener economy*".[52]

"Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy"

Managing Climate Risk in the U.S. Financial System
U.S. Commodity Futures Trading Commission (CFTC), September 2020[53]

In the Netherlands, the central bank (DNB) has published a number of reports since 2017 exploring the risks to the Dutch financial sector of a wide range of E&S issues, from climate-related transition risks, to flood risks, to resource scarcity and human rights controversies. In its June 2020 *Indebted to nature* joint report with PBL Netherlands Environmental Assessment Agency, DNB explores the transmission mechanisms between biodiversity risks and financial risks.[54]

Using the ENCORE database,[iii] the report concludes that "*Dutch financial institutions have provided worldwide EUR 510 billion in finance to companies that are highly or very highly dependent on one or more ecosystem services*", representing 36% of the EUR1.4 trillion investment portfolio that was examined. Nevertheless, this significant figure represents "*only the lower limit of the total exposure of financial institutions to risks of biodiversity loss*", due to the "*limited availability of data*" and the resulting ability to "*investigate only a limited number of biodiversity risks*".

Following the announcement at the UN General Assembly that China would "*aim to have CO2 emissions peak before 2030 and achieve carbon neutrality before 2060*", the People's Bank of China announced that it would improve its monetary policy framework, in order to boost the development of the economy in line with this overarching national objective, starting with a green recovery.[55]

And indeed, the COVID-19 pandemic that is still raging globally has led governments and central banks around the world to take unprecedented measures to try and keep populations safe and the economy afloat.

iii ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) is a tool to help users better understand and visualize the impact of environmental change on the economy, developed by the Natural Capital Finance Alliance in partnership with UNEP-WCMC. https://encore.naturalcapital.finance/en

A GROWING MOMENTUM

Crucially, central banks and supervisors have a number of tools at their disposal that would be well suited to respond to the current crisis. A November 2020 study from the LSE Grantham Research Institute on Climate Change and the Environment and the Centre for Sustainable Finance at SOAS, University of London, lists a number of suitable measures – from non-conventional monetary policy to macro/micro-prudential instruments – that could be modified to take E&S considerations into account.[56]

By evaluating the current response of 188 economies worldwide, the study also highlights the potential for convergence between the immediate crisis responses that are largely not integrating sustainability factors and the separate sustainability efforts by central banks and supervisors that have been observed recently. And indeed, so far only US$1.8 trillion of the nearly US$15 trillion of economic stimulus injected or announced by governments to date has been directed to green sectors.[57]

Over the past few months, several central banks and supervisors have made public statements in favour of a green recovery, joining the chorus of prominent voices calling for more resolute action to ensure that the stimulus packages being issued channel funds towards activities that contribute to global sustainable development goals.

Notably, in May 2020, Frank Elderson (NGFS Chair, Executive Director of Supervision at DNB and member of the ECB Executive Board) and Irene Heemskerk (former Advisor to the NGFS Chair) jointly declared that "*our response to the pandemic should be not to rebuild the old economy, but to use this momentum to start building a new economy that is more sustainable and greener. We must do all we can to avoid the next crisis looming on the horizon*".[58]

It is indeed crucial that the current positive momentum and growing awareness about the scale of the climate and environmental crises are transformed into concrete and ambitious actions, to enable and accelerate the transition towards a low-carbon, resilient and more equitable economy.

THE SUSREG FRAMEWORK

OVERVIEW

The Sustainable Regulations and Central Bank Activities ('SUSREG') framework provides practical guidance on the integration of environmental & social (E&S) considerations in financial regulations, supervisory expectations and monetary policy.

Its main objective is to strengthen and harmonize regulatory, supervisory and ultimately risk management and decision-making practices across key financial markets, in line with sustainable development goals and international agreements.

The framework's development was informed by:

- WWF's active involvement in leading sustainable finance initiatives, e.g. through its representation on the European Commission's Technical Expert Working Group and its successor Platform on Sustainable Finance;
- WWF's ongoing work with central banks, financial regulators, supervisors and policymakers worldwide, that contributes to shaping the development of sustainable financial regulations and guidelines in key financial markets;
- WWF's perspective as a science-based organization, rooted in conservation work that delivers positive impacts on the ground.

In addition to drawing on this in-house expertise, the development of this framework has built on:

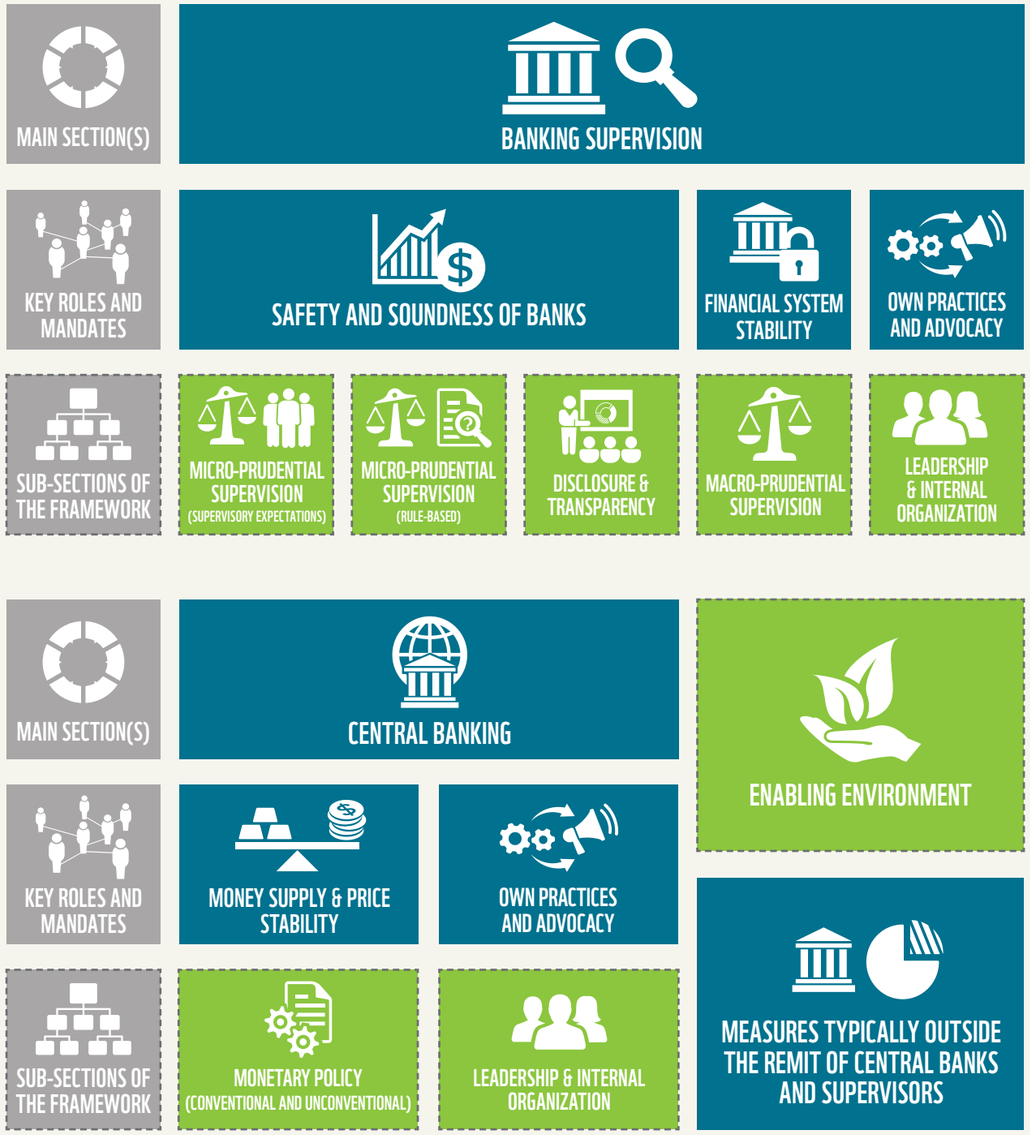
- Current best practices by central banks and supervisors worldwide, as well as the NGFS recommendations and publications;
- An extensive review of the literature produced by leading universities, think-tanks and non-governmental organizations on central banking and supervisory practices;
- Key frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD).

Last but not least, this framework benefitted from comments and suggestions from key central banks, financial supervisors, think-tanks and various WWF partners, which are mentioned in the Acknowledgements section of this report.

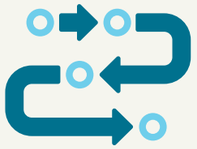
The SUSREG framework is currently centred around three main sections, namely banking regulation and supervision, central banking activities and aspects contributing to an enabling environment for sustainable finance. Going forward, the SUSREG framework will be expanded to cover regulations pertaining to other key parts of the financial system such as insurance, capital markets and asset management.

The framework contains 68 indicators, organized in subsections according to the overall structure below (individual sections are highlighted in green).

The assessment will initially cover around 40 key countries, focusing on the Basel Committee on Banking Supervision members and observers, as well as other countries where WWF is already actively engaging with the central bank or financial supervisor.



THE SUSREG FRAMEWORK



ASSESSMENT METHODOLOGY

As a first step, the SUSREG framework will be used to assess regulatory and supervisory practices pertaining to sustainable banking, as well as central banks' activities and other financial sector-related measures contributing to the transition to a low-carbon, resilient and sustainable economy.

In performing the assessments, WWF will take into consideration the following (non-exhaustive):

- Regulations and guidelines issued by the financial regulators or supervisors, as they pertain to sustainable banking practices;
- Measures and activities implemented by the central bank (in particular those related to monetary policy), in line with their mandate;
- Measures taken by central banks, banking regulators or supervisors, or other policymakers, to create an environment conducive to the development of sustainable finance.

In the absence of sustainable banking regulations or guidelines issued by the regulator, WWF may take into consideration relevant guidelines issued by the national banking association, where available. When formally supported by the financial regulator or supervisor, the implementation of such guidelines can be an important driver of change among commercial banks.

However, the issuance of stringent and mandatory regulations is more conducive to the uniform integration of E&S considerations within the banking sector, and therefore should be actively pursued.

Listing rules or sustainability reporting guidelines issued by securities commissions or stock exchanges are not taken into account in this assessment. Indeed, the current focus of SUSREG is on the banking sector, while such rules or guidelines are typically not specific to banks and would not cover non-publicly listed banks.

Below are key considerations that will guide the country-level assessments performed against the framework:

- ✔ The assessment will only take into account information that is publicly available, through official websites or in relevant news articles and publications;
- ✔ For countries where English is not an official language, WWF will endeavour to use official documentation available in the national language. Alternatively, and in the absence of an official translation of the relevant documentation, an unofficial translation may be procured to facilitate the assessment;
- ✔ In countries where the banking supervisor and the central bank are part of the same entity, the various parts of the SUSREG framework will be applied to the measures taken by the relevant departments within such entity;
- ✔ For each indicator, WWF will review the available country-specific evidence. The assessment will result in full, partial or no credit, depending on whether relevant measures are in place and the extent to which they satisfy the indicator;
- ✔ For certain indicators, the assessment results will be split in order to clearly display the scope of the associated measure(s): either only applicable to climate-related risks, to both climate-related and other environmental risks, or to the entire range of E&S risks.

The detailed assessment results will be published on the SUSREG online platform (www.susreg.org), in a matrix format showing the country-level results for each indicator, together with the source of the information used.

Before the publication of final results, WWF will do its best efforts to share preliminary results with the relevant institutions (e.g. regulators, supervisors, central banks), to seek feedback and ensure the information identified is complete and accurate.

It should be noted that individual indicators are not weighted, and the assessment will not result in a rating. No overall final score or ranking of respective countries will be provided. Rather, the tool enables users to quickly identify best practices and potential improvement points, and to understand how different national regulatory frameworks compare against specific indicators.

The SUSREG framework and assessment currently do not consider the extent to which specific regulations and measures are adequately and effectively implemented. Nevertheless, it is critical for financial regulators, supervisors and central banks to build the internal capacity necessary to fully implement officially issued measures.

The following section of the report provides the full list of indicators for the SUSREG framework.

DETAILED FRAMEWORK

BANKING SUPERVISION

Micro-prudential supervision (supervisory expectations)

This section is applicable to regulations or supervisory expectations as they pertain to sustainable banking or, in their absence, to similar guidelines issued by the national banking association.

It looks at the scope of the relevant regulations, supervisory expectations or guidelines, as well as how they are implemented. The assessment focuses on the specific expectations of banks to integrate E&S considerations in their business strategy, governance, decision-making, and risk management policies and processes, including at the portfolio level.

A growing number of banking regulators and supervisors are issuing such principle-based expectations, which are aligned with the measures already taken by a wide range of commercial banks globally. This was one of the key NGFS recommendations, first issued in the *Call for Action* report in April 2019[59] and further detailed in the Guide for Supervisors published in May 2020.

Scope & implementation

It is critical that regulations, supervisory expectations or guidelines cover not only climate-related aspects, but the whole range of E&S issues that can affect banks and their clients. Specifically, environmental issues include greenhouse gas emissions, deforestation, land use change, biodiversity loss, pollution of water, air and soil, and depletion of natural resources. Social issues include human rights violations, labour issues (incl. occupational health & safety), and adverse impacts on local communities (incl. indigenous people).

Such expectations should also apply to the banks' activities beyond lending, to cover for instance capital markets and advisory transactions.

In order to reflect views from various stakeholders, it is good practice to conduct a round of public consultation before issuing the final set of regulations, supervisory expectations or guidelines. The supervisor should regularly monitor the supervised banks' compliance with the official regulations or expectations, based on information published or submitted by the banks.

NO.	INDICATOR
1.1.1	The regulations or supervisory expectations cover a broad range of environmental and social (E&S) issues.
1.1.2	The regulations or supervisory expectations extend beyond lending to cover other financial products & services provided by banks.
1.1.3	Public consultation was carried out prior to the official issuance of regulations or supervisory expectations.
1.1.4	The supervisor regularly assesses the banks' implementation of regulations or supervisory expectations.

Strategy & governance

Banks should be expected to consider how E&S risks and opportunities impact their activities, and to integrate these considerations in their overall business strategy and governance, factoring in the long-term nature of many of these risks.

In this section, 'E&S strategy' refers to a bank's business strategy incorporating E&S considerations, i.e. the management of the E&S risks, opportunities and impacts associated with its business relationships (provision of financial products & services to clients). It does not cover corporate social responsibility (CSR) or philanthropic activities, or the management of a bank's direct impacts (such as energy use and business travel).

To ensure a successful implementation of a bank's E&S strategy, it is critical to create a conducive environment, starting with board oversight. Banks should also be expected to put in place dedicated teams, allocate resources and attribute responsibilities across the organization over the implementation of such strategy – including to their senior management.

Relevant staff, including board and senior management, should not only be trained but incentivized through relevant criteria factored in their appraisal and remuneration review process.

Last but not least, banks should be expected to engage with external stakeholders, to benefit from a wider range of perspectives in the development and implementation of their E&S strategy.

NO.	INDICATOR
1.2.1	Banks are expected to integrate E&S considerations in their business strategy, consistent with the size and nature of their operations.
1.2.2	Banks are expected to factor both short-term and longer-term E&S considerations in their business strategy.
1.2.3	Banks are expected to include oversight of their E&S strategy implementation in their board's responsibilities.
1.2.4	Banks are expected to regularly provide their board with relevant information related to the implementation of their E&S strategy.
1.2.5	Banks are expected to include criteria related to their E&S strategy implementation in their appraisal and remuneration policy.
1.2.6	Banks are expected to dedicate staff and resources to the definition and implementation of their E&S strategy.
1.2.7	Banks are expected to define the roles and responsibilities of the various teams (incl. senior management) involved in the implementation of their E&S strategy.
1.2.8	Banks are expected to conduct regular training on relevant E&S issues for their board, senior management, business lines and functions.
1.2.9	Banks are expected to conduct stakeholder engagement on relevant E&S issues, incl. with civil society representatives.

Policies & processes

In order to adequately identify, assess and mitigate the E&S risks and impacts that they are exposed to through their business relationships, banks should be expected to develop sector-specific policies. By outlining minimum E&S expectations of their clients, and through engagement and support, banks can facilitate the adoption of best practices by corporates, in line with internationally recognized sustainability standards and certification schemes.

As a first step, banks can be expected to focus on sectors with high E&S risks and impacts.[iv] In some jurisdictions, the banking regulator, supervisor or other bodies such as the national banking association can issue sector-specific checklists to guide the banks' approach in certain sectors.

Internally, banks should be expected to incorporate E&S considerations in their risk management and decision-making processes. In particular, to ensure that sector policies and related internal procedures are properly followed, a three lines of defence approach should be applied to the management of E&S risks.

Where possible, banks should be encouraged to insert E&S clauses in the financial documentation. A process should be in place to monitor clients' E&S performance and manage situations where clients do not comply with applicable policies and regulations.

NO.	INDICATOR
1.3.1	Banks are expected to develop and implement sector policies outlining minimum E&S requirements for their clients, particularly in sectors with high E&S risks and impacts.
1.3.2	Banks are expected to refer to internationally recognized sustainability standards and certification schemes in their E&S sector policies.
1.3.3	Banks are expected to engage with and support their clients on the adoption of best practices, based on internationally recognized sustainability standards and certification schemes.
1.3.4	Specific guidelines or checklists covering the banks' activities in sectors with high E&S risks and impacts have been issued by the supervisor.
1.3.5	Banks are expected to integrate E&S considerations in their decision-making and risk management processes.
1.3.6	Banks are expected to put in place internal controls to manage E&S risks, in accordance with the three lines of defence approach.
1.3.7	Banks are expected to seek the inclusion of clauses (e.g. covenants, representations & warranties) related to E&S issues in the loan documentation for bilateral and syndicated credit facilities.
1.3.8	Banks are expected to put in place an internal process to monitor and address situations where clients are not compliant with the banks' E&S sector policies or with applicable laws and regulations.

iv Illustrative list of sectors: mining, power utilities, infrastructure (notably transportation- and energy-related), real estate, agriculture and food, forestry and pulp & paper, fisheries and aquaculture, oil & gas, high-carbon industry (steel, aluminium, cement, chemicals) and high-carbon transportation (automotive, aviation, heavy duty vehicles, shipping).

Portfolio risks & impacts

Beyond the identification and management of E&S risks and impacts at the client or transaction level, banks should be expected to develop a robust understanding of their portfolio-level exposure to these risks and the extent of their negative impacts.

In particular, given the forward-looking nature of these risks, it is important that banks use scenario analysis to test their risk exposure and resilience to various possible future outcomes. The use of multiple scenarios is critical. In relation to climate change, for instance, these would usually include a scenario with high physical risks and two scenarios reflecting an orderly and disorderly transition to a low-carbon economy.

Banks should be expected to set targets, in particular to align their portfolio with the objectives of the Paris Agreement on climate change, taking advantage of the development and ongoing improvement of related methodologies.[v] Similarly, as broader global environmental goals are being defined,[vi] banks should be expected to set science-based targets at the portfolio level for other environmental risks that reflect such goals.

In doing so, it is important for banks to identify, engage and support their clients in transitioning their business models towards more sustainable practices, thereby driving positive change in the real economy.

NO.	INDICATOR
1.4.1	Banks are expected to assess and mitigate their portfolio-level exposure to material E&S risks.
1.4.2	Banks are expected to assess and mitigate their portfolio-level exposure to material E&S risks, by using forward-looking scenario analysis and stress-testing.
1.4.3	Banks are expected to assess and mitigate the material negative E&S impacts associated with their business relationships, at the portfolio level.
1.4.4	Banks are expected to set science-based climate targets to align their portfolio with the objectives of the Paris Agreement.
1.4.5	Banks are expected to set science-based targets to mitigate negative environmental impacts beyond climate, at the portfolio level.

v Such as Science-Based Targets for Financial Institutions. More information on: https://sciencebasedtargets.org/sectors/financial-institutions
vi Notably on biodiversity, through the development of a post-2020 global framework to be adopted at the upcoming 15th Conference of the Parties of the Convention on Biological Diversity. https://www.cbd.int/

Micro-prudential supervision (rule-based)

The integration of risk-based E&S considerations in the prudential rules for banks (Pillar 1 of the Basel regulation), such as capital and liquidity requirements, would contribute to strengthening their risk management systems and ultimately their resilience to, for instance, climate-related or environmental shocks.

While further research and data is needed to adequately quantify these risks and to design associated prudential rules, individual banks can start by identifying the type of risks they are exposed to and evaluate their resilience, e.g. through the Internal Capital Adequacy Assessment Process (ICAAP) exercise. Banks can also assess how E&S risks might affect their liquidity position. In turn, this should inform the implementation of supervisory measures to address the identified risks.

Indeed, the supervisory review process under Pillar 2 gives an opportunity for supervisors to require capital add-ons in case banks are found to be too exposed to certain risks. Supervisors can adjust liquidity ratios to reflect the identified E&S risks – for instance the liquidity coverage ratio (through the definition of high-quality liquid assets) or the net stable funding ratio (through the definition of required stable funding).

NO.	INDICATOR
1.5.1	Banks are expected to integrate E&S considerations in their Internal Capital Adequacy Assessment Process (ICAAP).
1.5.2	Minimum capital requirements or capital add-ons for banks incorporate E&S considerations, through a differentiated risk-based approach.
1.5.3	Banks are expected to integrate E&S considerations in their liquidity risk management process.
1.5.4	Liquidity ratios are adjusted to take E&S considerations into account, through a differentiated risk-based approach.

Disclosure & transparency

Public disclosure of decision-useful information on E&S risks and impacts by financial and non-financial corporates is key to help correct market failures and enhance market discipline. It also contributes to better risk management and facilitates the identification of sustainable finance opportunities.[60]

It is critical that banking regulators and supervisors strengthen their disclosure requirements. Banks should be expected to include all relevant and material information in their annual reports, thereby providing investors, clients and all stakeholders with a comprehensive overview of their business strategy and risk management practices, including on E&S aspects.

As much as possible, to promote harmonized and meaningful disclosures, internationally recognized sustainability reporting frameworks should be used – such as the recommendations of the Taskforce for Climate-related Financial Disclosures (TCFD).

Banks should also be expected to provide their stakeholders with information on their exposure to and management of E&S risks, as well as on their negative impacts. Where they exist, taxonomies for sustainable (or unsustainable) activities should be used, to shed light on banks' exposure to activities that are compatible (or not) with defined national or international goals.

NO.	INDICATOR
1.6.1	Banks are expected to publicly disclose how E&S considerations are integrated in their business strategy, governance, policies and risk management processes.
1.6.2	Banks are expected to use internationally recognized sustainability reporting frameworks to guide their public disclosures.
1.6.3	Banks are expected to include information on their E&S strategy and its implementation in their annual report.
1.6.4	Banks are expected to publicly disclose their credit exposure by industry sub-sectors, based on international industry classification systems.
1.6.5	Banks are expected to publicly disclose the share of their total lending portfolio that is aligned with existing classification systems for sustainable or unsustainable activities (taxonomies).
1.6.6	Banks are expected to report publicly on their portfolio-level exposure to material E&S risks and the associated mitigation measures.
1.6.7	Banks are expected to report publicly on their exposure to and management of climate-related risks and opportunities, in line with the TCFD recommendations.
1.6.8	Banks are expected to report publicly on the material negative E&S impacts associated with their business relationships, at the portfolio level.

Macro-prudential supervision

Macro-prudential supervision has gained prominence in the aftermath of the 2008 Global Financial Crisis, when it became clear that ensuring the stability of individual firms was no longer sufficient. To secure a stable financial system, macro-level tools had to be developed that could detect and address system-wide imbalances such as asset price bubbles, or to test the system's ability to absorb large shocks.

Specifically, scenario analysis and stress-testing are important to understand the implications of climate-related or environmental risks in particular for the financial system's stability. As methodologies are being continuously developed and refined, it is important for supervisors to seek expert feedback through public consultation. With the disclosure of key results from stress-testing exercises and associated recommendations, supervisors contribute to advancing the understanding and implications of these risks.

When particular E&S risks concentrations are identified, measures such as countercyclical capital buffers can be used to mitigate the build-up of systemic risk and reinforce banks' resilience. Other potential measures can be considered to address identified risks, such as sectoral leverage ratio, large exposure rules, maximum credit ceilings, caps to loan-to-value or loan-to-income ratios, or adjustments of the capital conservation buffer.

Most of these of these macro-prudential supervision tools can also be used for micro-supervision, as the two approaches inform each other.

NO.	INDICATOR
1.7.1	The supervisor has assessed the exposure of banks to material E&S risks and the implications for financial system stability, by using forward-looking scenario analysis and stress-testing.
1.7.2	The supervisor has published its methodology for forward-looking scenario analysis and stress-testing for public consultation.
1.7.3	The supervisor has published the aggregated results of its stress-testing exercises on material E&S risks, as well as its recommendations.
1.7.4	The supervisor has developed specific risk indicators to monitor the exposure of banks to material E&S risks.
1.7.5	The supervisor has issued prudential rules to limit the exposure of banks to certain activities, in order to prevent and protect against the build-up of systemic risk, based on E&S considerations.

Leadership & internal organization

Banking regulators and supervisors themselves need to develop their internal capacity and expertise on E&S risks.

By joining the NGFS, supervisors not only signal their commitment to tackle these issues, but benefit from a growing collective experience on the management of climate-related and E&S risks, by participating in various working groups that develop detailed and practical guidance.

The development of a strategy or roadmap that is validated by the board and that outlines measures to foster a sustainable financial system is critical to give supervised institutions clarity over upcoming regulatory changes and expectations. Such a strategy should be in line with the supervisor's mandate, and backed by an appropriate internal organization and allocation of resources.[61]

In order to start quantifying the exposure of banks to E&S risks and to understand how these can be better managed, the supervisor can conduct initial studies and publish results as well as associated recommendations. These studies can be a first step before more in-depth scenario analysis and stress-testing work is performed.

NO.	INDICATOR
1.8.1	The supervisor is a member of the Network for Greening the Financial System (NGFS).
1.8.2	The supervisor has published an official strategy or roadmap outlining measures to address E&S risks and opportunities in the financial sector, in line with its mandate.
1.8.3	The supervisor has established an internal organization and allocated resources to the implementation of its E&S strategy or roadmap.
1.8.4	The supervisor has conducted studies to assess the banking sector's exposure to and management of E&S risks, and published its conclusions and recommendations.

THE SUSREG FRAMEWORK

CENTRAL BANKING

Monetary policy

This section is applicable to regulations or supervisory expectations as they pertain The public debate on the role of monetary policy, particularly in addressing the climate and environmental crises, is relatively recent. While more research is required to better understand the transmission mechanisms of climate and E&S risks to inflation control and price stability, and to better quantify the magnitude of potential impacts, there is a growing recognition that central banks have an important role to play.

For instance, corporate asset purchase programmes (or quantitative easing) could be modified to factor in E&S considerations. In particular, these programmes could better reflect the actual climate-related or E&S risks faced by corporate issuers, and how these are mitigated, thereby further encouraging companies to adopt sustainable practices.

Similarly, collateral frameworks could be modified, for instance by reflecting climate and E&S risks in haircuts and collateral valuations, incentivizing banks to better factor E&S considerations into the financial products and services they deliver.

Through subsidized loans or preferential targeted refinancing lines, central banks can incentivize banks to provide additional support to certain industry sectors, in line with national sustainable development objectives.

NO.	INDICATOR
2.1.1	The central bank takes E&S considerations into account when implementing corporate asset purchase programmes.
2.1.2	The central bank takes E&S considerations into account in its collateral framework.
2.1.3	The central bank integrates E&S considerations in the management of its foreign exchange reserves portfolio.
2.1.4	The central bank offers subsidized loans or preferential targeted refinancing lines based on E&S considerations.
2.1.5	The central bank takes E&S considerations into account in determining reserve requirements for banks.

Leadership & internal organization

Alongside banking regulators and supervisors, central banks also need to develop their internal capacity and expertise on the broad range of E&S risks.

By joining the NGFS, central banks not only signal their commitment to tackle these issues, but benefit from a growing collective experience on the management of climate-related and environmental risks, by participating in various working groups that develop detailed and practical guidance, including on how these risks relate to monetary policy.

The development of a strategy or roadmap that is validated by the board and that outlines measures to foster a sustainable financial system is critical to give finance sector stakeholders clarity over upcoming policy changes. Such a strategy should be in line with the central bank's mandate, and backed by an appropriate internal organization and allocation of resources.[62]

It is worth emphasizing that central banks have the unique opportunity to lead by example, by assessing and disclosing the exposure of the various portfolios to E&S risks, as well as by developing, implementing and publishing a responsible investment strategy applicable to their own portfolios, as well as to third-party assets where relevant. Central banks can also encourage transparency in the financial sector by starting to publish the share of their own portfolio that is aligned with existing taxonomies for sustainable or unsustainable activities.

NO.	INDICATOR
2.2.1	The central bank is a member of the Network for Greening the Financial System (NGFS).
2.2.2	The central bank has published an official strategy or roadmap outlining measures to address E&S risks and opportunities in the financial sector, in line with its mandate.
2.2.3	The central bank has established an internal organization and allocated resources to the implementation of its E&S strategy or roadmap.
2.2.4	The central bank assesses and discloses the exposure of its portfolios to E&S risks (for its policy, own, pension and third-party portfolios as applicable).
2.2.5	The central bank integrates E&S considerations in its asset management practices (for its own, pension and third-party portfolios as applicable).
2.2.6	The central bank publicly discloses the share of its portfolios that is aligned with existing classification systems for sustainable or unsustainable activities (taxonomies).

ENABLING ENVIRONMENT

This section covers measures that are not necessarily within the traditional mandates of central banks and supervisors, or that are under the remit of other entities. However, these measures are key to facilitate the adoption of sustainable finance principles by banks and more generally to contribute to the alignment of financial flows with global goals.

As such, multi-stakeholder initiatives can prove particularly useful for the finance sector to define joint solutions to overcome existing barriers to sustainable finance, including by building the capacity of both financial institutions and regulatory authorities.

The development of taxonomies, or classification systems for (un)sustainable activities, backed by associated disclosure requirements for financial and non-financial corporates, is crucial to reduce the risks of greenwashing and ensure that financial flows are channelled towards meeting pre-defined sustainable development goals.

Some central banks and supervisors also have the ability to set targets or incentivize banks to support certain industry sectors, in line with the national sustainable development objectives.

Regulations or guidelines can be issued to guide the provision of sustainable financial products (such as green bonds), and can be complemented by specific incentives such as grant schemes.

Finally, the establishment of a carbon pricing mechanism (such as a carbon tax) is essential to achieve material greenhouse gas emissions reductions in the real economy.

NO.	INDICATOR
3.1.1	A multi-stakeholder sustainable finance initiative is in place, involving representatives from the banking industry, regulatory and supervisory authorities, as well as from civil society.
3.1.2	The central bank, supervisor or banking association is supporting capacity building efforts for the banking industry, on sustainable banking practices and related aspects.
3.1.3	A classification system for sustainable activities (taxonomy) is in place, and has been developed following a science-based and multi-stakeholder process.
3.1.4	A classification system for unsustainable activities (taxonomy) is in place, and has been developed following a science-based and multi-stakeholder process.
3.1.5	Non-financial corporates are required to disclose information on the alignment of their current and planned activities with existing taxonomies for sustainable or unsustainable activities.
3.1.6	Targets or incentives are in place for banks to support certain industry sectors, based on E&S considerations.
3.1.7	Regulations or guidelines covering the issuance or provision of sustainable financial products are in place, and are based on standards developed following a science-based and multi-stakeholder process.
3.1.8	Targeted mechanisms are in place to promote adherence of sustainable financial products with internationally recognized standards.
3.1.9	A carbon pricing mechanism is being implemented in the country.

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